VERIFICATION REPORT

JSC "YASYNIVSKYI COKE PLANT"

VERIFICATION OF THE

UTLIZATION OF SURPLUS COKE OVEN GAS WITH THE ELECTRICITY GENERATION AT JSC "YASYNIVSKYI COKE PLANT"

SECOND PERIODIC

(01 JANUARY 2010 – 31 DECEMBER 2010)

REPORT NO. UKRAINE-VER/0211/2011

REVISION NO. 02

BUREAU VERITAS CERTIFICATION

Date of first issue:	Organizational unit:
11/02/2011	Bureau Veritas Certification Holding SAS
Client:	**Client ref.:**
PJSC "Yasynivskyi Coke Plant"	Viktor Chalenko

Summary:

Bureau Veritas Certification has made the 2nd periodic verification of the "Utilization of surplus coke oven gas with the electricity generation at JSC "Yasynivskyi Coke Plant", JI Registration Reference Number UA1000185, project of PJSC "Yasynivskyi Coke Plant" located in Makiyivka, Donetsk region, Ukraine, and applying the methodology ACM0012/ version 03.1, 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 under Track 1 procedure.

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 generating GHG emission reductions. The GHG emission reduction is calculated accurately and without material errors, omissions, or misstatements, and the ERUs issued totalize 69222 tons of CO_2eq for the monitoring period from 01/01/2010 to 31/12/2010.

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.:	Subject Group:
UKRAINE-ver/0211/2011	JI
Project title:	
Utilization of surplus coke oven gas with the electricity generation at JSC "Yasynivskyi Coke Plant"	
Work carried out by:	
Oleg Skoblyk – Team Leader, Lead Verifier Iuliia Pylnova – Team member, Verifier Olena Manziuk – Team member, Verifier	
Work reviewed by:	
Ivan Sokolov – Internal Technical Reviewer	
Work approved by:	
Flavio Gomes - Operational Manager	

Date of this revision:	Rev. No.:	Number of pages:
29/03/2011	02	38

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

☒ No distribution without permission from the Client or responsible organizational unit

☐ Limited distribution

☐ Unrestricted distribution

Abbreviations

AIE	Accredited Independent Entity
BVCH	Bureau Veritas Certification Holding SAS
CAR	Corrective Action Request
CL	Clarification Request
CO_2	Carbon Dioxide
ERU	Emission Reduction Unit
FAR	Forward Action Request
GHG	Green House Gas(es)
IETA	International Emissions Trading Association
JI	Joint Implementation
JISC	JI Supervisory Committee
MoV	Means of Verification
MP	Monitoring Plan
PCF	Prototype Carbon Fund
PDD	Project Design Document
UNFCCC	United Nations Framework Convention on Climate Change

Table of Contents *Page*

1 INTRODUCTION

PJSC ”Yasynivskyi Coke Plant” (PJSC “Yasynivskyi Coke Plant” was established by changing the name of juridical person JSC “Yasynivskyi Coke Plant” to PJSC “Yasynivskyi Coke Plant”) has commissioned Bureau Veritas Certification to verify the emissions reductions of its JI project “Utilization of surplus coke oven gas with the electricity generation at JSC ”Yasynivskyi Coke Plant” (hereafter called “the project”) in Makiyivka, Donetsk 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 Accredited Independent Entity of the monitored reductions in GHG emissions. The verification is based on the submitted monitoring report and the determined project design document including the project’s baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations.

The verification is not meant to provide any consulting towards the Client. However, stated requests for clarifications 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

Iuliia Pylnova
Bureau Veritas Certification 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 verification protocol is enclosed in Appendix A to this report.

2.1 Review of Documents

The Monitoring Report (MR) submitted by PJSC ”Yasynivskyi Coke Plant” and additional background documents related to the project design and baseline, i.e. country Law, Project Design Document (PDD), Approved CDM methodology ACM0012 (version 03.1), Tool for the demonstration and assessment of additionality and 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 versions 1.0, 2.0, 3.0, and project as described in the determined PDD version 4.

2.2 Follow-up Interviews

On 03/02/2010 Bureau Veritas Certification performed (on-site) interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of PJSC "Yasynivskyi Coke Plant" and Environmental (Green) Investments Fund LTD were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
PJSC "Yasynivskyi Coke Plant"	Organizational structure Responsibilities and authorities Roles and responsibilities for data collection and processing Installation of equipment Data logging, archiving and reporting Metering equipment control Metering record keeping system, database IT management Training of personnel Quality management procedures and technology Internal audits and check-ups
Environmental (Green) Investments Fund LTD	Baseline methodology Monitoring plan Monitoring report

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 Requests and Corrective Action Requests are stated, in the following sections and are further documented in the Verification Protocol in Appendix A. The verification of the Project resulted in 10 Clarification Requests, no Corrective and Forward Action Requests are arisen.

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 approvals by Ukraine, Host party, (Letter of Approval of Ministry for Environmental Protection of Ukraine No 1282/23/7, issued on 27/08/2010) and Switzerland (Approval of the Federal Office for the Environment (FOEN) of Switzerland No J294-0485, issued on 23/08/2010) have been issued by the DFP of that Party when submitting the first verification report to the secretariat for publication in accordance with paragraph 38 of the JI guidelines, at the latest.
The abovementioned written approval are unconditional.

3.2 Project implementation (92-93)

According to the registered PDD (version 4) the implementation status of the project consists of several phases:

- 2004 – beginning of the project investment stage;
- 2006 – launch of reconstructed coke oven battery #1 and installed first PT-12 turbogenerator;

- 2012 – launch of reconstructed coke oven battery #4, installed additional steam boiler BK-50, and installed second PT-12 turbogenerator.

Implementation of the project activity is realized according to the project implementation schedule. There are no deviations or revisions to the determined PDD (version 4).

The actual implementation status of the proposed project is operation of reconstructed coke oven battery #1 and installed first PT-12 turbogenerator.

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 and is so listed on the UNFCCC JI website.

For calculating the emission reductions, key factors, e.g., CO_2 emission factor for coke, CO_2 emission factor for electricity grid of Ukraine; production level, fuel consumption, market situation and other risks associated with the project (that can influence baseline and project emissions) were taken into account, as appropriate.

Data sources used for calculating emission reductions, such as appropriately calibrated measuring equipment, the study of standardized emission factors for the Ukrainian electricity grid, IPCC guidelines, laboratory analysis, are clearly identified, reliable and transparent.

Emission factors, including default emission factors, are selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice.

As regards the value of emission factor for electricity generation in the year 2010, for this monitoring period emission factor for Ukrainian electricity grid is fixed according to the latest Decree of the National Environmental Investment Agency. Decree #43 of NEIA from March 28, 2011 sets specific carbon dioxide emissions values for 2010 electricity generation by thermal power plants connected to the electricity system of Ukraine, which was calculated and approved in accordance with the Methodology for specific carbon dioxide emissions calculation from electricity generation by thermal power plants and its consumption. Pursuant to this Decree the value was set at 1,067 kg CO_2/kWh and recommended for applying during annual monitoring reports preparation.

The approach for calculation of specific carbon dioxide emissions from electricity generation by an indicated group of thermal power plants connected to the electricity system of Ukraine, provided in the

Methodology, corresponds to the option A1 for calculation of the operating margin emission factor $EF_{grid\ OMsimple\ y}$, according to the methodological tool "Tool to calculate the emission factor for an electricity system", version 02, approved by the CDM Executive Board, United Nations Framework Convention on Climate Change.

For the monitoring report provided for verifier, EF applicable for supply-side projects was applied for the reasons that were described in PDD (please see section B.2 of PDD, version 4). The special feature of the electricity supply scheme at PJSC «YCP» is that the enterprise has to supply a part of project-generated energy to the grid, wherefrom it is delivered to consumers of PJSC «YCP» via power step down transformer. The conservative baseline suggests that all the electricity produced due to the project activity is supplied to the grid. To calculate emissions reduction it is necessary to use emissions factor which is defined for energy displacement in the National Energy System of Ukraine for the energy, produced during the project activity. The emission factor value set for 2010 in accordance with the Methodology for specific carbon dioxide emissions calculation from electricity generation by thermal power plants and its consumption is higher than the emission factor value used for calculation of expected emissions reduction in PDD. Thus amount of emission reductions reached in 2010 is higher than it was planned during PDD preparation.

For monitoring report EF applicable for supply-side projects was applied for the reasons that were described in PDD (please, see section B.2 of PDD, version 4). The special feature of the electricity supply scheme at PJSC «YCP» is that the enterprise has to supply a part of project-generated energy to the grid, wherefrom it is delivered to consumers of PJSC «YCP» via power step down transformer. The conservative baseline suggests that all the electricity produced due to the project activity is supplied to the grid. To calculate emissions reduction it is necessary to use emissions factor which is defined for energy displacement in the National Energy System of Ukraine for the energy, produced during the project activity. The emission factor value set for 2010 in accordance with the Methodology for specific carbon dioxide emissions calculation from electricity generation by thermal power plants and its consumption is higher than the emission factor value used for calculation of expected emissions reduction in PDD. Thus amount of emission reductions reached in 2010 is higher than it was planned during PDD preparation.

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.

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.
Key monitoring activities are described (in the section B of the Monitoring report) as follows.

Accounting of energy production
Reading of meters for the produced energy is conducted on unit-to-unit basis every 12 hours and is entered into the log book. The data is aggregated into the monthly and annual reports and is stored in paper and electronic formats.
Data collection is carried out by a shift caretaker of the Main control board. The responsible person for the collection and archiving of the data is the head of the electricity area.
Meters check is conducted according to the verification methodology certified by the Ukrainian state scientific-production centre for standardization, metrology and certification (UkrCSM). The Electrotechnical laboratory of the enterprise is responsible for meeting the meters checks deadlines.
The amount of electricity consumed for the PT-12 own needs is determined by monthly calculations in consideration of the working auxiliary equipment load factor, as well as its capacity. The data is archived and stored in paper and electronic formats. The responsible person for the collection and archiving of the data is the head of the electricity area.

Accounting of coal consumption of CHP boilers
The amount of coal, consumed by the boilers, is determined when coal is supplied to the CHP by using the electro-mechanical scales. Data on the amount of coal is entered into the logbook. The responsible person is the head of the production department.
The net caloric value of coal supplied to the CHP and combusted in the boilers is determined according to the technical specifications

У 10.1-23472138-161:2005 for coal sort G, belonging to which was established by state enterprise “Luganskstandartmetrology”.

Accounting of the coke oven gas consumption in CHP boilers

Accounting of the coke oven gas consumption in CHP is determined by the meter on gas-flow inlet to the boiler house (pie chart). The pie chart readings is conducted manually every 24 hours by shift caretaker of Control, Measurement and Automation department, reduced to the normal conditions and entered into logbooks and electronic data base. The responsible person for the collection and archiving of the data is the head of Control, Measurement and Automation department.

Coke oven gas NCV is determined monthly by the Central plant laboratory. The results are entered into the logbook.

Information from coke oven gas flow meters and electric meters is saved continuously. The archiving period for the log files is at least one year. Information about coal consumption is accounted when coal is supplied to the CHP stock and summarized in annual reports. All data are archived electronically in month and annual reports. Electronically archived data and handwritten journals will be stored until the end of crediting period plus two years, that was enjoined by the plant order №498 dated 14.08.2010. The vice-chief of heat and power sector of the plant is responsible for the keeping of the monitoring data.

Besides, at PJSC “Yasynivskyi Coke Plant” was introduced and applied a quality management system ISO 9001:2008. This fact is evidenced by a certificate issued by TÜV Thüringen e.V. (valid until 23.07.2012). The registration number is TIC 15 100 96386. This certification provides for regular supervisory audits. Last supervisory audit was conducted 11-14 of May, 2010, and the validity of the certificate was confirmed. Procedures for dealing with data gaps and uncertainty conducts with accordance to this standard. E.Sova, the chairman of the quality, was responsible for the quality audit conducting.

Every day persons responsible for the present and valid “Instruction on monitoring of the project “Utilization of surplus coke oven gas with the electricity generation at JSC “Yasynivskyi Coke Plant” (dated 6.05.2006) fulfillment reports to the Vice-chief of heat and power sector of the plant about any malfunctioning. So, in case of any meter failure, data discrepancy will be found within one day. The meter will be substituted by working one. CO_2 emissions reduction will be calculated by cross-checking method for this period. If any inappropriateness of monitored data is revealed, corrective measures will be conducted either on the monitoring system for the item specified above. In such case, monitored data will be corrected in a conservative manner. All the information of corrective measures taken on the monitoring system and monitored data itself will be archived along with original monitored data for future verification of emission reductions.

Therefore, the Monitoring Report version 3.0 provides sufficient information on the assigning roles, responsibilities and authorities for implementation and maintenance of monitoring procedures including control of data. The verification team confirms effectiveness of the existing management and operational systems and found them eligible for reliable project monitoring.

3.6 Verification regarding programmes of activities (102-110)

Not applicable.

4 VERIFICATION OPINION

Bureau Veritas Certification has performed the 2nd periodic verification of the "Utilization of surplus coke oven gas with the electricity generation at JSC "Yasynivskyi Coke Plant" project in Ukraine, which applies the approved consolidated methodology ACM0012 version 03.1. 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 PJSC "Yasynivskyi Coke Plant" 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 4. 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 3.0 for the reporting period as indicated below. Bureau Veritas Certification confirms that the project is implemented as planned and described in approved project design documents. Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately. The monitoring system is in place and the project is generating GHG emission reductions.

Bureau Veritas Certification can confirm that the GHG emission reduction is accurately calculated and is free of material errors, omissions, or misstatements. Our opinion relates to the project's GHG emissions and resulting GHG emissions reductions reported and related to the approved

project baseline and monitoring, and its associated documents. Based on the information we have seen and evaluated, we confirm, with a reasonable level of assurance, the following statement:

Reporting period: From 01/01/2010 to 31/12/2010

Baseline emissions	: 69399 t CO_2 equivalents.
Project emissions	: 177 t CO_2 equivalents.
Emission Reductions	: 69222 t CO_2 equivalents.

5 REFERENCES

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

/1/ PDD “Utilization of surplus coke oven gas with the electricity generation at JSC «Yasynivskyi Coke Plant” version 4 dated 11.12.2009.
/2/ Monitoring Report “Utilization of surplus coke oven gas with the electricity generation at JSC «Yasynivskyi Coke Plant” version 1.0 dated 20.01.2010.
/3/ Monitoring Report “Utilization of surplus coke oven gas with the electricity generation at JSC «Yasynivskyi Coke Plant” version 2.0 dated 09.02.2011.
/4/ Monitoring Report “Utilization of surplus coke oven gas with the electricity generation at JSC «Yasynivskyi Coke Plant” version 3.0 dated 28.03.2011.
/5/ Verification Report No. UKRAINE/0108/2010 of the project “Utilization of surplus coke oven gas with the electricity generation at JSC «Yasynivskyi Coke Plant” dated 13.07.2010.
/6/ Calculation of Emission Reductions - excel file “Emissions calc. (monitor) 2010-(v.2.0)” dated 28.01.2011.
/7/ Calculation of Emission Reductions - excel file “Utilization of coke oven gas at JSC YCP - ERUs calc 2010(v.3.0)” dated 28.03.2011.
/8/ Approved consolidated methodology ACM0012 version 03.1 “Consolidated baseline methodology for GHG emission reductions from waste energy recovery projects” dated 28.11.2008.
/9/ Tool for the demonstration and assessment of additionality ver. 05.2 dated 26.08.2008.
/10/ Letter of Approval of Ministry for Environmental Protection of Ukraine No 1282/23/7 dated 27/08/2010.
/11/ Approval of the Federal Office for the Environment (FOEN) of Switzerland No J294-0485 dated 23/08/2010.
/12/ Decree #43 on approval of indexes of specific carbon dioxide emissions in the year 2010 issued by NEIA dated 28.03.2011.

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

/1/ Photo. Device for determining caloric value of coke.
/2/ Attestation certificate of Central plant laboratory #06544-2-4-11/3 ГОМС. Registration date: 07.10.2012. Annex to the attestation certificate dated 07.10.2009 #06544-5-1-125-ВЛ. Certification sector: Central plant laboratory of JSC "Yasynivskyi coke plant" for

conducting of measurements within and out of the sphere of distribution of state metrological supervision.
/3/ Schedule of departmental and periodic verification of electrical appliances and electric meters.
/4/ Photo. Turbine, inv. #104101855.
/5/ Photo. Electronic recorder MTM-РЭ-160.
/6/ Photo. Electric meter "Indigo+".
/7/ Passport. Electric multifunctional meters Indigo+.
/8/ Acceptance certificate. Electric meter of type of Indigo+, ser. #UA015673.
/9/ Daily flow diagram of coke oven gas consumption.
/10/ Daily flow diagram of coke oven gas pressure.
/11/ Passport for the flow meter (variable drop). ДКО ser. #1411. КСДЗ ser. #299048 dated 23.06.2008. Date of the last verification: 23.06.2010.
/12/ Logbook for registration of occupational safety issues.
/13/ The certificate of conformance of management system with requirements of the standard EN IO 9001:2008.
/14/ Scheme of installation of counters in the power supply system at JSC "YCP".
/15/ Letter of Endorsement for the JI project “Utilization of surplus coke oven gas with the electricity generation at JSC “Yasynivskyi Coke Plant”. #1070/23/7 dated 11.09.2009.
/16/ Minutes of approval of the works (services) SOE "Donetsk Scientific-Production Centre of Standardization, Metrology and Certification" to the contract #24/11 dated 12.01.2010.
/17/ Certificate on attestation № 06544-5-1-125-ВЛ of 07.10.2009 of central plant laboratory CJSC ''Yasynivskyi Coke Plant''. Valid to 8.10.2012. Annex to certificate of attestation № 06544-5-1-125-ВЛ of 07.10.09.
/18/ Permit on the starting of work execution with high dangerous # 3505.09.30-74.30.0. Validity term: 20.11.2009 - 20.11.2012.
/19/ Electrical energy meter, electronic multifunctional Indigo+, Passport.
/20/ Daily list of electrical energy counting at HPP YCP of 01.09.2010.
/21/ Daily list of electrical energy counting at HPP YCP of 13.12.2010.
/22/ Daily list of electrical energy counting at HPP YCP of 17.12.2010.
/23/ Accounting and technical card for bell-type manometer.
/24/ Journal ВВ-150Э-1, № 003 (0405).
/25/ Track electromechanical scales ВВ-150Э-1, Operational guidance, Ат-002А РЭ.
/26/ Journal of gas and water counting for November 2010.
/27/ Journal of gas and water counting for September 2010.
/28/ Journal of gas and water counting for August 2010.
/29/ Journal of gas and water counting for July 2010.
/30/ Contract № 24/11/42/52 for metrological works execution of 12.01.2010.

/31/ Certificate № ПК 010-2009 of certificate of authorization of SOE "Donetsk Scientific-Production Centre of Standardization, Metrology and Certification" for conducting verification of measuring equipment 17.07.2009.
/32/ Order # 498 of 19.07.2010 on ensuring storage of data on monitoring of JI project «Utilization of surplus coke oven gas with the electricity generation at JSC «Yasynivskyi Coke Plant».
/33/ Instruction on project monitoring of utilization of surplus coke oven gas with the electricity generation at JSC «Yasynivskyi Coke Plant of 06.05.2006.
/34/ Order # 491 of 14.07.2010 on assignment of responsible persons for execution of Instruction on monitoring of the project «Utilization of surplus coke oven gas with the electricity generation at JSC «Yasynivskyi Coke Plant» of 06.05.2006.
/35/ Actual fuel consumption for some types of production and work execution at the PJSC "Yasynivskyi Coke Plant" for the year 2010 (form #11-МТП).
/36/ Report on the 1st supervision audit DIN EN ISO 9001:2008 (ISO 9001) dated 16.06.2010.
/37/ Report on coke oven gas consumption at the PJSC "Yasynivskyi Coke Plant" for 2010

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/ E.L. Okhrymenko – head of the Central plant laboratory,
/2/ D.M. Bogdanov – head of the electricity area,
/3/ L.V. Krivaya – chief metrologist of the plant,
/4/ O.V. Gonchar – head of the Electrotechnical laboratory,
/5/ M.V. Kabyka - chief engineer,
/6/ M.M. Kritsyn – electrician of CHP,
/7/ M.L. Rusanov – head of control, measurements and automation,
/8/ O.V. Sova – deputy chief of QMS at the PJSC “Yasynivskyi Coke Plant”,
/9/ S.I. Skybyk – inventory and project expert, Environmental (Green) Investments Fund LTD.

BUREAU VERITAS CERTIFICATION HOLDING SAS

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

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclu-sion
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?	Letter of approval (LoA) of the Swiss Designated Focal Point has been issued when submitting the first verification (Issue date of the LoA is 23.08.2010).	OK	OK
91	Are all the written project approvals by Parties involved unconditional?	The written project approvals by Parties involved are unconditional.	OK	OK
Project implementation				
92	Has the project been implemented in accordance with the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website?	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 the project during the monitoring period?	According to the PDD, there are several phases of the JI project implementation: - 2004 – beginning of the project	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclu-sion
		investment stage; - 2006 – launch of reconstructed coke oven battery #1 and installed first PT-12 turbogenerator; - 2012 – launch of reconstructed coke oven gas battery #4, installed additional steam boiler BK-50, and installed second PT-12 turbogenerator. Monitoring report indicates the current status of the project activity implementation.		
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 "Yasynivskyi Coke Plant" (according to the documentation checked, 13/10/2010 PJSC "Yasynivskyi Coke Plant" was established by changing the name of juridical person JSC "Yasynivskyi Coke Plant" to PJSC "Yasynivskyi Coke Plant") is carried out in accordance with the monitoring plan included in the registered PDD version 4 dated 11.12.2009.	OK	OK
95 (a)	For calculating the emission reductions or enhancements of net removals, were key factors, e.g. those listed in 23 (b) (i)-(vii) above, influencing the baseline	According to the monitoring report, key factors such as CO_2 emission factor for coke, CO_2 emission factor for electricity grid of Ukraine; production level, fuel consumption, market situation and other	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclu-sion
	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?	risks associated with the project (that can influence baseline and project emissions) are taken into account.		
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 identified in the Monitoring report. See section B of the Monitoring report. Information from meters is saved continuously. Information about coal consumption is accounted when coal is supplied to the CHP stock and summarized in annual reports. All data are archived electronically in month and annual reports. Electronically archived data and handwritten journals will be stored until the end of crediting period plus two years. <u>Clarification Request (CL) 01</u> Please, specify the date from which the approved consolidated methodology ACM0012/ Version 03.1 is valid; also, please, specify the date and version of the "Tool for the demonstration and assessment of additionality". Please, indicate this	The issue is closed due to the amend-ments made in	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclu-sion
		information in the Monitoring report. <u>Clarification request (CL) 02</u> Please, make the units of measuring parameters consistent throughout the whole Monitoring Report (for example, while calculating amount of electricity generated use only *MWh* instead of *kWh and MWh*).	the Monitoring report. Based on the correct-ions made, the issue is closed.	 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?	Emission factors, including default emission factors, are selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice. For the monitoring report provided for verifiers, new value of specific carbon dioxide emissions (in the year 2010) for electricity generation by thermal power plants connected to the electricity system of Ukraine is used (according to the latest Decree #43 of NEIA dated 28.03.2011) In accordance with the Decree, emission factor for Ukrainian electricity grid was fixed as 1,067 kg CO_2/kWh and recommended for applying during annual monitoring reports preparation.	OK	OK
95 (d)	Is the calculation of emission	The calculation of emission reductions is		

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclu-sion
	reductions or enhancements of net removals based on conservative assumptions and the most plausible scenarios in a transparent manner?	based on conservative assumptions and the most plausible scenarios. As a result of documents revision, all data connected to estimation of emission reductions is presented in the Monitoring report and Excel spreadsheet with calculation. Clarification Request (CL) 03 Please, clarify the difference between the amount of ERUs for the year 2010 which is indicated in the PDD (63261 tCO_2eq) and the amount of ERUs for the same monitoring period which is stated in the Monitoring report (69222 tCO_2eq). Please, add explanation of the cause of this difference to the sections B.2 and D.3 of the Monitoring Report. Clarification Request (CL) 04 Please, specify the name of the Excel spreadsheet with calculation of ERUs.	Based on the clarifica-tion received, CL 03 is closed. CL 04 is closed due to the amend-ments made.	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	N/A	N/A	N/A

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclu-sion
	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?			
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
97 (b)	If the determination was conducted on the basis of an overall monitoring plan, have the project participants submitted a common monitoring report?	N/A	N/A	N/A
98	If the monitoring is based on a monitoring plan that provides for overlapping monitoring periods, are the monitoring periods per component of the project clearly specified in the monitoring report? Do the monitoring periods not overlap with those for which verifications were already deemed final in the past?	N/A	N/A	N/A
Revision of monitoring plan				
Applicable only if monitoring plan is revised by project participant				

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclu-sion
99 (a)	Did the project participants provide an appropriate justification for the proposed revision?	N/A	N/A	N/A
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
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. The data collection procedures is also in accordance with "Instruction on monitoring of the project "Utilization of surplus coke oven gas with the electricity generation at JSC "Yasynivskyi Coke Plant" dated 6.05.2006. See section C of the Monitoring Report. <u>Clarification Request (CL) 05</u> Please, give the full name of the instruction	The issue	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclu-sion
		on monitoring in the section C.4 of the Monitoring report.	is closed based on the amend-ments made in the Monitoring report.	
		<u>Clarification Request (CL) 06</u> Please, give brief description of the data collection in the section B.2 of the Monitoring report (or give clear references not only to the PDD section, but also to the sections of the Monitoring Report).	Due to the amend-ments made in the Monitoring report, CL 06 is closed.	OK
		<u>Clarification Request (CL) 07</u> Please, provide (in the section C.3 of the Monitoring report) information on conducting internal audit of quality management system at PJSC “YCP” in the year 2010 (please, indicate the date of conducting this internal audit and the presence of the Report on internal audit).	Based on the informa-tion added to the section C.3 of the Monitoring	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclu-sion
			report, the issue is closed.	
101 (b)	Is the function of the monitoring equipment, including its calibration status, is in order?	The monitoring equipment is properly calibrated. Passports for monitoring equipment and the date of its last calibration were checked by verifiers on the site-visit. <u>Clarification Request (CL) 08</u> Please, clarify why coke oven gas temperature meter "KSMz-P" is not included in the list of monitoring equipment types (see section B.1 of the Monitoring Report); and, if necessary, please, include this meter in the list.	CL 08 is closed due to the amend-ments made in the Monitoring report.	OK
101 (c)	Are the evidence and records used for the monitoring maintained in a traceable manner?	Information from coke oven gas flow meters and electric meters is saved continuously. The archiving period for the log files is at least one year. Information about coal consumption is accounted when coal is supplied to the CHP stock and summarized in annual reports. All data are archived electronically in month and annual reports. Electronically archived data and handwritten journals will be stored until the end of		

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclu-sion
		crediting period plus two years. Clarification Request (CL) 09 OJSC "Yasynivskyi coke plant" has issued the order concerning appointment of vice-chief of heat and power sector of the plant responsible for the keeping of the monitoring data; it was checked by verifiers on the site-visit. Please, add the information on the order issued to the section B.3 of the Monitoring Report.	The necessary informa-tion was added to the Monitoring report. The issue is closed.	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. Clarification Request (CL) 10 OJSC "Yasynivskyi coke plant" has issued the order concerning indication of the names of the personnel involved in the key monitoring activities; it was checked by verifiers on the site-visit. Please, add the information on the order issued to the section C.1.1 of the Monitoring Report.	CL 10 is closed based on the informa-tion added to the Monitoring Report.	OK
Verification regarding programs of activities (additional elements for assessment)				
102	Is any JPA that has not been	N/A	N/A	N/A

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

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclu-sion
	extrapolation to all JPAs identified for that verification is reasonable, taking into account differences among the characteristics of JPAs, such as: − The types of JPAs; − The complexity of the applicable technologies and/or measures used; − The geographical location of each JPA; − The amounts of expected emission reductions of the JPAs being verified; − The number of JPAs for which emission reductions are being verified; − The length of monitoring periods of the JPAs being verified; and − The samples selected for prior verifications, if any?			
107	Is the sampling plan ready for publication through the secretariat along with the verification report and supporting documentation?	N/A	N/A	N/A
108	Has the AIE made site inspections	N/A	N/A	N/A

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclu-sion
	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?			
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

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclu-sion
110	If the AIE learns of a fraudulently included JPA, a fraudulently monitored JPA or an inflated number of emission reductions claimed in a JI PoA, has the AIE informed the JISC of the fraud in writing?	N/A	N/A	N/A

Table 2 Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1	Summary of project participant response	Verification team conclusion

Clarification Request (CL) 01 Please, specify the date from which the approved consolidated methodology ACM0012/ Version 03.1 is valid; also, please, specify the date and version of the "Tool for the demonstration and assessment of additionality". Please, indicate this information in the Monitoring report.	95 (b)	Section A.5 of the Monitoring report (version 3.0) was amended with the implementation of the verifier's requirements.	The issue is closed due to the amendments made in the Monitoring report.
Clarification Request (CL) 02 Please, make the units of measuring parameters consistent throughout the whole Monitoring Report (for example, while calculating amount of electricity generated use only *MWh* instead of *kWh and MWh*).	95 (b)	The verifier's recommendation was fulfilled.	Based on the corrections made, the issue is closed.

Clarification Request (CL) 03 Please, clarify the difference between the amount of ERUs for the year 2010 which is indicated in the PDD (63261 tCO_2eq) and the amount of ERUs for the same monitoring period which is stated in the Monitoring report (69222 tCO_2eq). Please, add explanation of the cause of this difference to the sections B.2 and D.3 of the Monitoring Report.	95 (d)	The main reasons for the difference in the amount of ERUs in PDD and in Monitoring report are the following: • Emission factor for electricity grid (fixed according to the latest Decree of NEIA #43 dated 28.03.2011), that was applied in monitoring report, is higher than emission factor that was applied during PDD preparation; • Difference between the amount of electric energy generated actually and the amount that was planned to generate in PDD; • Difference between the amount of coal consumed by CHP boilers actually and the amount that was planned to consume in PDD. All the necessary information is added to the PDD.	Based on the clarification received, CL 03 is closed.
Clarification Request (CL) 04 Please, specify the name of the Excel spreadsheet with calculation of ERUs.	95 (d)	The Excel file was properly entitled.	CL 04 is closed due to the amendments made.
Clarification Request (CL) 05 Please, give the full name of the instruction on monitoring in the section C.4 of the Monitoring report.	101 (a)	The verifier's recommendation was fulfilled.	The issue is closed based on the amendments made in the Monitoring report.

Clarification Request (CL) 06 Please, give brief description of the data collection in the section B.2 of the Monitoring report (or give clear references not only to the PDD section, but also to the sections of the Monitoring Report).	101 (a)	The Monitoring report was amended with the implementation of the verifier's requirements.	Due to the amendments made in the Monitoring report, CL 06 is closed.
Clarification Request (CL) 07 Please, provide (in the section C.3 of the Monitoring report) information on conducting internal audit of quality management system at JSC "YCP" in the year 2010 (please, indicate the date of conducting this internal audit and the presence of the Report on internal audit).	101 (a)	The Monitoring report was amended with the implementation of these requirements. Please see section C.2 of the Monitoring report (version 3.0): "At PJSC "Yasynivskyi Coke Plant" was introduced and applied a quality management system ISO 9001:2008. This fact is evidenced by a certificate issued by TÜV Thuringen e.V. (valid until 23.07.2012). The registration number is TIC 15 100 96386. This certification provides for regular supervisory audits. Last supervisory audit was conducted 11-14 of May, 2010, and the validity of the certificate was confirmed. Procedures for dealing with data gaps and uncertainty conducts with accordance to this standard. E.Sova, the chairman of the quality, was responsible for the quality audit conducting".	Based on the information added to the section C.3 of the Monitoring report, the issue is closed.

Clarification Request (CL) 08 Please, clarify why coke oven gas temperature meter "KSMz-P" is not included in the list of monitoring equipment types (see section B.1 of the Monitoring Report); and, if necessary, please, include this meter in the list.	101 (b)	The recommendation was fulfilled. The meter "KSMz-P" was included to the list of monitoring equipment types.	CL 08 is closed due to the amendments made in the Monitoring report.
Clarification Request (CL) 09 JSC "Yasynivskyi coke plant" has issued the order concerning appointment of vice-chief of heat and power sector of the plant responsible for the keeping of the monitoring data; it was checked by verifiers on the site-visit. Please, add the information on the order issued to the section B.3 of the Monitoring Report.	101 (c)	The Monitoring report was amended with the implementation of the verifier's requirements. Now, the section B.3 of the Monitoring report (version 3.0) includes the following information: "All data are archived electronically in month and annual reports. Electronically archived data and handwritten journals will be stored until the end of crediting period plus two years, that was enjoined by the plant order №498 dated 14.08.2010. The *vice-chief of heat and power sector* of the plant is responsible for the keeping of the monitoring data".	The necessary information was added to the Monitoring report. The issue is closed.

Clarification Request (CL) 10 JSC "Yasynivskyi coke plant" has issued the order concerning indication of the names of the personnel involved in the key monitoring activities; it was checked by verifiers on the site-visit. Please, add the information on the order issued to the section C.1.1 of the Monitoring Report.	101 (d)	Requested information was added.	CL 10 is closed based on the information added to the Monitoring Report.

APPENDIX B: VERIFIERS CV'S

Work carried out by:

Oleg Skoblyk, Specialist (Power Management)

Team Leader, Climate Change Lead Verifier
Bureau Veritas Ukraine Health, Safety and Environmental Department Project Manager

Oleg Skoblyk has graduated from National Technical University of Ukraine 'Kyiv Polytechnic University" with specialty Power Management. He has successfully completed IRCA registered Lead Auditor Training Course for Environment Management Systems and Quality Management Systems. Oleg Skoblyk has undergone intensive training on Clean Development Mechanism /Joint Implementation and he is involved in the determination/verification of 29 JI projects.

Iuliia Pylnova (environmental science)

Verifier
Bureau Veritas Ukraine Health, Safety and Environment Project Manager

Iuliia Pylnova 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. Iuliia has undergone an intensive training course on Clean Development Mechanism /Joint Implementation, and she has also been involved in the determination/verification of 14 JI projects.

Olena Manziuk (environmental science)

Verifier
Bureau Veritas Ukraine Health, Safety and Environment Project Manager

Olena Manziuk 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 9 JI projects.

The determination report was reviewed by:

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

Internal Technical Reviewer, Climate Change Lead Verifier
Bureau Veritas Ukraine Acting Chief Executive

Mr. Sokolov 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 Cours and he was involved in the determination/verification over 60 JI/CDM projects.