VERIFICATION REPORT

GLOBAL CARBON BV

VERIFICATION OF THE

UTILIZATION OF COKE GAS WITH ELECTRICITY GENERATION

BY TWO 6 MWE CHP AT "ZAPOROZHCOX PLANT"

REPORT NO. UKRAINE -VER/0240/2011

REVISION NO. 02

BUREAU VERITAS CERTIFICATION

Report No: UKRAINE-ver/0240/2011

VERIFICATION REPORT

Date of first issue: 19/05/2011	Organizational unit: Bureau Veritas Certification Holding SAS
Client: Global Carbon BV	Client ref.: Lennard de Klerk

Summary:
Bureau Veritas Certification has made the 2nd periodic verification of the "Utilization of coke gas with electricity generation by two 6 MWe CHP at "ZaporozhCox Plant", JI Registration Reference Number UA2000026, project of ZaporozhCox Plant located in Zaporizhya, Ukraine, and applying the JI specific approach, on the basis of UNFCCC criteria for the JI, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 6 of the Kyoto Protocol, the JI rules and modalities and the subsequent decisions by the JI Supervisory Committee, as well as the host country criteria.

The verification scope is defined as a periodic independent review and ex post determination by the Accredited Entity of the monitored reductions in GHG emissions during defined verification period, and consisted of the following three phases: i) desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification report and opinion. The overall verification, from Contract Review to Verification Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

The first output of the verification process is a list of Clarification, Corrective Actions Requests, Forward Actions Requests (CR, CAR and FAR), presented in Appendix A.

In summary, Bureau Veritas Certification confirms that the project is implemented as per determined changes. Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately. The monitoring system is in place and the project is generating GHG emission reductions. The GHG emission reduction is calculated accurately and without material errors, omissions, or misstatements, and the ERUs issued totalize 67 598 tons of CO2eq for the monitoring period that covers the period from 01/01/2010 to 31/03/2011.
Our opinion relates to the project's GHG emissions and resulting GHG emission reductions reported and related to the approved project baseline and monitoring, and its associated documents.

Report No.: UKRAINE-ver/0240/2011	Subject Group: JI	
Project title: Utilization of coke gas with electricity generation by two 6 MWe CHP at "ZaporozhCox Plant"		
Work carried out by: Ivan Sokolov - Team Leader, Lead verifier Oleg Skoblyk - Team Member, Lead Verifier Svitlana Gariyenchyk - Team Member, Verifier		
Work reviewed by: Leonid Yaskin – Internal Technical Reviewer		
Work approved by: Flavio Gomes - Operational Manager		
Date of this revision: 25/05/2011	Rev. No.: 02	Number of pages: 39

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1 INTRODUCTION

Global Carbon BV has commissioned Bureau Veritas Certification to verify the emissions reductions of its JI project Utilization of coke gas with electricity generation by two 6 MWe CHP at "ZaporozhCox Plant" (hereafter called "the project"), in Zaporizhya, Ukraine.

This report summarizes the findings of the verification of the project, performed on the basis of UNFCCC criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

1.1 Objective

Verification is the periodic independent review and ex post determination by the Accredited Independent Entity of the monitored reductions in GHG emissions during defined verification period.

The objective of verification can be divided in Initial Verification and Periodic Verification.

UNFCCC criteria refer to Article 6 of the Kyoto Protocol, the JI rules and modalities and the subsequent decisions by the JI Supervisory Committee, as well as the host country criteria.

1.2 Scope

The verification scope is defined as an independent and objective review of the project design document, 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:

Ivan Sokolov
Bureau Veritas Certification Team Leader, Climate Change Lead Verifier

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

Svitlana Gariyenchyk
Bureau Veritas Certification Team Member, Climate Change Verifier

This verification report was reviewed by:

Leonid Yaskin
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 Global Carbon BV and additional background documents related to the project design and baseline, i.e. country Law, Project Design Document (PDD) and Guidance on criteria for baseline setting and monitoring, Host party criteria, Kyoto Protocol 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 and 2.0 and project as described in the determined PDD.

2.2 Follow-up Interviews

On 27/04/2011 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 Global Carbon BV and JSC “ZaporozhCox Plant” were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
JSC "ZaporozhCox Plant"	• Project implementation status • Organizational structure • Responsibilities and authorities • Personnel training • Quality management procedures and technology • Data logging • Data archiving • Data reporting • Records of equipment installation • Control of metering equipment • Metering record keeping system, database • Cross-check of the information provided in the MR with other sources • IT management
Global Carbon BV	• 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 documented in the Verification Protocol in Appendix A. The verification of the Project resulted in 10 Corrective Action Requests, 18 Clarification Requests, and 1 Forward Action Requests.

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

3.1 Remaining issues and FARs from previous verifications

No remaining FARs from the previous verification.

3.2 Project approval by Parties involved (90-91)

Written project approval by Ukraine and the Netherlands have been issued by the DFP of that Parties when submitting the first verification report to the secretariat for publication in accordance with paragraph 38 of the JI guidelines, at the latest. They are listed among Category 1 Documents in the Reference section of this report

The abovementioned written approvals are unconditional.

3.3 Project implementation (92-93)

The project proposes to make use of excess coke oven gas (COG) to generate electricity by two new steam turbine generators, one backpressure and one condensing, replacing power currently being sourced from the national grid. The installation of the backpressure turbine was competed in February 2008 as it stated in the relevant commissioning act. The completion of the condensing turbine, according

to the determined PDD version 5.0, was expected in March 2010 but was postponed from the planned date due to the lack of financing. Now all assembling works are finished and turbine was completely put into operation in June 2010.

Outstanding issue related to Project implementation, PP's response and BV's conclusion are described in Appendix A Table 2 (refer to CL 02).

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

Excluding the issues reported in 3.5 below, 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 influencing the baseline and the activity level of the project and the emissions as well as risks associated with the project were taken into account, among them are the following:

- all electricity generated by the project from the COG is carbon neutral;
- there is no consumption of electricity for cleaning of COG;
- installation of the new equipment or modernization of the existing one can result in an increase in electricity consumption which is considered carbon neutral because it is generated from the waste heat;
- accounting the amount of COG, which would not be supplied to external consumers due to the project activity;
- amount of COG for the project scenario and for the baseline scenario can be assumed to be the same for each year;
- all significant leakages are to be taken into consideration.

Data sources used for calculating emission, such as:

- data of the state company „Zaporozhstandartmetrologiya";
- values obtained through Automatic system for technological process control (ASTPC);
- readings of the meters;
- orders of the Ukrainian DFP on the approval of the emission factor for the national electricity grid

are clearly identified, reliable and transparent.

The following emission factors applied by the project participants

- emission factor for the electricity from the grid in the 2010 year;
- emission factor for the electricity from the grid in the 2011 year;

- emission factor for natural gas

are selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice.

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

Outstanding issues related to Compliance of the monitoring plan with the monitoring methodology, PP's response and BV's conclusion are described in Appendix A Table 2 (refer to CL 01, CL 08, CAR 03, CAR 06).

3.5 Revision of monitoring plan (99-100)

It was stated in the determined PDD version 5.0 that the time of monitoring referring to the Emission factor for electricity from the Ukrainian power grid was to be fixed ex-ante during determination and its value of 0.896 tCO2/MWh was determined for the period 2008-2012.
According to the PDD, electricity generated by the project from the COG and consumed by ZCP's auxiliaries apply an Emission Factor (EF) of 0.896 tCO2/MWh as a project reducing electricity consumption from the grid. The emission factor for the Ukrainian electricity grid, developed by Global Carbon B.V., determined by TUV SUD and final determined by the JISC, was to be used for the baseline emissions calculation. At the time of determination, it was the most accurate Emission Factor for electricity production in Ukraine.
In 2011, the National Environmental Investment Agency of Ukraine has set a new Emission Factors for electricity production as 1,067 tCO2/MWh for 2010 and 1,063 tCO2/MWh for 2011. New emission factors based on recent studies of fuel consumption for electricity production in Ukraine are used in the revised Monitoring plan.

The project participants provided an appropriate justification for the proposed revision, which is the respective Orders of National Environmental Investment Agency mentioned among Category 1Documents of the Reference section of the present Verification Report.

The proposed revision improves the accuracy and applicability of information collected compared to the original monitoring plan without changing conformity with the relevant rules and regulations for the establishment of monitoring plans.
Thus, the determination of the verification team concerning the revised monitoring plan submitted by the project participants is positive.

3.6 Data management (101)

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

The implementation of data collection procedures is in accordance with the monitoring plan, including the quality control and quality assurance procedures.
The monitoring plan:

- Describes all key characteristics that are monitored, among them:
  - amount of electricity, generated by new turbines under the project activity;
  - amount of electricity consumed by project equipment;
  - amount of COG, which would not be supplied to external consumers due to the project activity;
- Specifies the indicators, constants and variables used (Sections B.2.1. and B.2.2.);
- Describes the methods employed for data monitoring and recording (Section B.3.);
- Presents the quality assurance and control procedures for the monitoring process. This includes information on trainings, involvement of third parties, internal audits and control measures, troubleshooting procedures (Sections C 1.2.; C.2 – C.4);
- Clearly identifies the responsibilities and authority regarding the monitoring activities (Section B.2.; C.1.1.);

On the whole, the procedures applied for monitoring process reflect good monitoring practices.

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.

Outstanding issues related to Data management, PP's response and BV's conclusion are described in Appendix A Table 2 (refer to CL 03 - CL 07, CL 09 – CL18, CAR 02, CAR 04 – CAR 10, FAR 01).

FAR 01 is left open till the next Monitoring Report.

4 VERIFICATION OPINION

Bureau Veritas Certification has performed 2nd periodic verification of the "Utilization of coke gas with electricity generation by two 6 MWe CHP at "ZaporozhCox Plant" Project in Ukraine, which applies the 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 verification covers the period from 01/01/2010 to 31/03/2011.

The management of JSC"ZaporozhCox 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 5.0. 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 versions 1.0. and 2.0 for the reporting period as indicated below. Bureau Veritas Certification confirms that the project is implemented as per determined changes. Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately. The monitoring system is in place and the project is generating GHG emission reductions.

Bureau Veritas Certification can confirm that the GHG emission reduction is accurately calculated and is free of material errors, omissions, or misstatements. Our opinion relates to the project's GHG emissions and resulting GHG emissions reductions reported and related to the approved project baseline and monitoring, and its associated documents. Based on the information we have seen and evaluated, we confirm, with a reasonable level of assurance, the following statement:

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

Baseline emissions	: 71 012	t CO2 equivalents.
Project emissions	: 0	t CO2 equivalents.
Leakages	: 18 281	t CO2 equivalents.
Emission Reductions	: 52 731	t CO2 equivalents.

Reporting period: From 01/01/2011 to 31/03/2011.

Baseline emissions	: 20 266	t CO2 equivalents.
Project emissions	: 0	t CO2 equivalents.
Leakages	: 5 399	t CO2 equivalents.
Emission Reductions	: 14 867	t CO2 equivalents.

Total for the period from 01/01/2010 to 31/03/2011:

Baseline emissions	: 91 278	t CO2 equivalents.
Project emissions	: 0	t CO2 equivalents.
Leakages	: 23 680	t CO2 equivalents.
Emission Reductions	: 67 598	t CO2 equivalents.

5 REFERENCES

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

/1/ Project Design Document "Utilization of coke gas with electricity generation by two 6 MWe CHP at "ZaporozhCox Plant", version 5.0 dated 27/10/2010
/2/ Monitoring Report version 1.0 dated 15/04/2011
/3/ Monitoring Report version 2.0 dated 13/05/2011
/4/ Calculation of emission reductions Excel spreadsheet version 1.0 dated 15/04/2011
/5/ Calculation of emission reductions Excel spreadsheet version 2.0 dated 13/05/2011
/6/ Determination Report by Bureau Veritas Certification Holding SAS No UKRAINE/0071/2009 of 12/03/2010
/7/ Letter of Approval ref No 2010JI01 issued on 25 February 2010 by the Netherlands DFP
/8/ Letter of Approval ref No 567/23/7 dated 17.05.2010 issued by the National Environmental Investment Agency of Ukraine
/9/ Order of the National Environmental Investment Agency of Ukraine № 43 dated 28/03/2011
/10/ Order of the National Environmental Investment Agency of Ukraine № 75 dated 12/05/2011
/11/ 2006 IPCC Guidelines, V.2-Energy, Table 1.4, http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_1_Ch1_Introduction.pdf

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

/1/ Determination Report by Bureau Veritas Certification Holding SAS No UKRAINE/0071/2009 of 12/03/2010
/2/ Certificate on energy generation at JSC "ZaporozhCox" in 2010
/3/ Certificate on energy generation at JSC "ZaporozhCox" in the 1st quarter of 2011
/4/ Passport on electric three-phase power meter Alpha A1140, serial #05002014 (generator #1)
/5/ Passport on electric three-phase power meter Alpha A1140, serial #05002014 (generator #1)
/6/ Passport on electric power meter type Energiya-9, serial #26711 (turbine #1)
/7/ Passport on electric three-phase power meter Alpha A1140, serial #05002024 (turbine #1)

/8/ Passport on electric three-phase power meter Alpha A1800, serial #01191079 (turbine #2)
/9/ Passport on electric power meter type Energiya-9, serial #50111 (turbine #2)
/10/ Passport on electric power meter type Energiya-9, serial #19467 (turbine #2)
/11/ Certificate #56/1 dated 20/02/2004
/12/ Certificate #58/07 dated 01/02/2007
/13/ Certificate #296/08 series КТЦ dated 22/07/2008
/14/ Certificate #114942 series 12CB dated 07/12/2009
/15/ Certificate #401/1 dated 21/12/2005
/16/ Certificate #89-4/08 dated 12/03/2008
/17/ Certificate #89-1/08 dated 12/03/2008
/18/ Certificate #89-2/08 dated 12/03/2008
/19/ Certificate #118-1/08 dated 03/04/2008
/20/ Certificate #20-40/08 dated 18/01/2008
/21/ Certificate #118-4/08 dated 03/04/2008
/22/ Annex 1 to the #60м-11 dated 25/11/2010. List of the measuring equipment in operation that are to be calibrated
/23/ Summary schedule on state calibration of BTS equipment dated 30/12/2010
/24/ Passport dated 23/02/2010 on flow-meter type Metran 100, serial #412710
/25/ Passport dated 26/02/2010 on flow-meter type Metran 100, serial #460897
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/43/ Photo - Input steam pressure sensor in the new turbine #2, type Metran 100, serial #459619
/44/ Technical passport 106-M-6195 on turbine P6-3,4/1,0-1, serial #2416
/45/ Agreement #60м-2011/2468 dated 25/11/2010
/46/ Photo - Input flow sensor of steam in the new turbine #2, type Metran 100, serial #173372
/47/ Photo - Output flow sensor of steam in the new turbine #2, type Metran 100, serial #412710
/48/ Report on thermal and technical operation parameters of БКЗ-75 and РК-85 boilers at BTS boiler department. Hourly average value of parameters per 27/04/2011
/49/ Statement #3 dated 25/06/2010 on object readiness for running into operation
/50/ Permit #2310136600-47 dated 09/09/2009, dated 08/09/2014 on stationary sources air pollution, issued by the Ministry of Environmental protection of Ukraine
/51/ Order #247 dated 15/07/2009
/52/ License Series АБ #175237, issued by the Ministry of Education and Science of Ukraine
/53/ License #534-DAK darted 06/04/2011(scopes of accreditation included) on providing training and educational activities issued by the State Accreditation Board of Ukraine
/54/ Record on energy resources supply and production at OJSC “ZaporozhCox” for 2011, 2010
/55/ Report dated 19/01/2011 on heat power plant operation for 2010. Form #6-тп (annual)
/56/ Electricity balance, energy equipment structure and report dated 19/01/2011 on heat power plant operation for 2010. Form #24-energy (annual)
/57/ Contract #2646 dated 17/12/2010
/58/ Report on energy consumption for 2010-2011
/59/ Agreement #112/10/992 dated 12/05/2010
/60/ Project on rehabilitation of coke battery #1-бис complex at OJSC “ZaporozhCox”
/61/ Working conditions chart #30-08
/62/ Working conditions chart #30-22
/63/ Working conditions chart #30-09
/64/ Agreement #8/09/386 dated 27/02/2009
/65/ Contract #155 dated 17/01/2011
/66/ Extract #534-DAK dated 06/04/2011from the decision of State Accreditation Commission of Ukraine
/67/ Diagram of industrial screening testing

/68/ Electricity production for 2010-2011
/69/ Energy consumption by generators at OJSC “ZaporozhCox” for 2010-2011
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/71/ Inventory chart on back-up steam boiler type БКЗ-75
/72/ Inventory chart on upgraded steam boiler type РК12-85-40/440-180
/73/ Statement #790 dated 20/11/2008 on acceptance-transmitting of the main equipment
/74/ Inventory chart on steam boiler type РК-85-40/440, serial #55412
/75/ Statement #534 dated 18/12/2006 on acceptance-transmitting of the main equipment
/76/ Inventory chart on steam turbine type П-6-3,4/1,0, serial #4007
/77/ Statement #498 dated 28/02/2008 on acceptance-transmitting of the main equipment
/78/ Inventory chart on turbine generator type Т-6-2У3
/79/ Statement #499 dated 28/02/2008 on acceptance-transmitting of the main equipment
/80/ Inventory chart on steam turbine type Р6-3,4/1,0-1, serial #2416
/81/ Statement #76 dated 29/07/2010 on acceptance-transmitting of the main equipment
/82/ Certificate of TUV NORD CERT on applying the system of management in accordance with a standard ISO 14001:2004, valid till 11/02/2012
/83/ Note on generator II-6-3,4/1.0 test carried out on 22/07/2010
/84/ Passport on generator T-6-2UZ
/85/ Passport on generator PRC-6-2EUZ
/86/ Passport on turbine 106-M-10271/FO
/87/ Passport on turbine 106-M-6195
/88/ Contract #155 dated 17/01/2011 with the Sanitary Service
/89/ Note #46 dated 05/05/2011 stating that the only fuel used for stem generation was coke gas

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/ Valery Rubchevsky - First Deputy General Director on Production, Chief Engineer, ZaporozhCox Plant
/2/ Vladimir Sharagin - Chief Heat and Power Engineer, ZaporozhCox Plant
/3/ Dmitry Morozov - Chief of Investment Department, ZaporozhCox Plant
/4/ Sergey Novik - Deputy Chief Engineer on Ecology, Chief of the Environment Protection Laboratory, ZaporozhCox Plant
/5/ Vladimir Makovsky – Engineer of Investment Department, ZaporozhCox Plant

/6/ Alexander Balagura - Chief Electrician of the Boiler and Turbine Shop, ZaporozhCox Plant
/7/ Vadim Prosyanchuck – Chief of HR Department, ZaporozhCox Plant
/8/ Svetlana Ovchinnikova – QMS Deputy Chief Engineer, Chief of the Central Plant Laboratory, ZaporozhCox Plant
/9/ Yury Troyan – Chief of Technical Production Automation Shop, ZaporozhCox Plant
/10/ Konstantin Kyrychek – Mechanic of Control and Measuring Devices, ZaporozhCox Plant
/11/ Tatyana Zabavko – Energy Resources Planning and Accounting Engineer, ZaporozhCox Plant
/12/ Denis Rzhanov - Engineer, Global Carbon BV
/13/ Natallia Belskaya - Engineer, Global Carbon BV

APPENDIX A: COMPANY PROJECT VERIFICATION PROTOCOL

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

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
Project approvals by Parties involved				
90	Has the DFPs of at least one Party involved, other than the host Party, issued a written project approval when submitting the first verification report to the secretariat for publication in accordance with paragraph 38 of the JI guidelines, at the latest?	The project has been approved by both Host Party (Ukraine) and sponsor party (The Netherlands). The written project approvals were issued by NFPs of both Parties involved (see chapter 5 References in the verification report).	OK	OK
91	Are all the written project approvals by Parties involved unconditional?	Yes, all the written project approvals by Parties involved are unconditional.	OK	OK
Project implementation				
92	Has the project been implemented in accordance with the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website?	The project has been implemented in accordance with the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website	OK	OK
93	What is the status of operation of the project during the monitoring period?	The status of project activity implementation compared to the PDD is presented in the Monitoring Report Section A.6. Appropriate justifications of the deviations from the implementation schedule in the determined PDD are also provided. **CL 02.** It is indicated in the MR that June	CL02	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		2010 is the date of the 2nd turbine installation. Please, provide information and supporting documents on the date when it was put into operation		
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 System is in place and operational. Monitoring of GHG emission reductions occurred basically in accordance with the determined Monitoring Plan included in the PDD regarding which the determination has been deemed final.	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) of the DVM, 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?	Key factors influencing the baseline and the activity level of the project and the emissions as well as risks associated with the project were taken into account, among them are the following: • all electricity generated by the project from the COG is carbon neutral; • there is no consumption of electricity for cleaning of COG; • installation of the new equipment or modernization of the existing one can	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		result in an increase in electricity consumption which is considered carbon neutral because it is generated from the waste heat; • accounting the amount of COG, which would not be supplied to external consumers due to the project activity; • amount of COG for the project scenario and for the baseline scenario can be assumed to be the same for each year; • all significant leakages are to be taken into consideration.		
95 (b)	Are data sources used for calculating emission reductions or enhancements of net removals clearly identified, reliable and transparent?	**CL 01.** Please, explain whether the amount of COG measured or calculated, make it clear in the MR (p.3) **CL 08.** Please, provide supporting documents on the values claimed in the table of Section B.2.3.of the MR	CL01 CL08	OK OK
95 (c)	Are emission factors, including default emission factors, if used for calculating the emission reductions	**CAR 01.** The electricity grid EF differs throughout the MR and excel spreadsheet. Please, bring it in line and make due	CAR01 CAR06	OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	or enhancements of net removals, selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice?	corrections to the MR **CAR 06.** It is stated in the determined PDD version 5.0 that the time of monitoring referring to the Emission factor for electricity from the grid is to be fixed ex-ante during determination and its value 0.896 tCO2/MWh was determined for the period 2008-2012 . The EF must be applied taking into consideration the respective Orders of the NEIA of Ukraine. Please, check this out and make due corrections to the MR and excel spreadsheet		
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?	**CAR 03.** Provide the description for the index ***y*** used in formulas	CAR03	OK
Applicable to JI SSC projects only				
96	Is the relevant threshold to be classified as JI SSC project not exceeded during the monitoring period on an annual average basis? If the threshold is exceeded, is the maximum emission reduction level estimated in the PDD for the JI SSC project or the bundle for the monitoring period determined?	N/A	N/A	N/A
Applicable to bundled JI SSC projects only				

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
97 (a)	Has the composition of the bundle not changed from that is stated in F-JI-SSCBUNDLE?	N/A	N/A	N/A
97 (b)	If the determination was conducted on the basis of an overall monitoring plan, have the project participants submitted a common monitoring report?	N/A	N/A	N/A
98	If the monitoring is based on a monitoring plan that provides for overlapping monitoring periods, are the monitoring periods per component of the project clearly specified in the monitoring report? Do the monitoring periods not overlap with those for which verifications were already deemed final in the past?	N/A	N/A	N/A
Revision of monitoring plan				
Applicable only if monitoring plan is revised by project participant				
99 (a)	Did the project participants provide an appropriate justification for the proposed revision?	The project participants provided an appropriate justification for the proposed revision	OK	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	The proposed revision improves the accuracy and/or applicability of information collected compared to the original monitoring plan without changing conformity with the relevant rules and regulations for the establishment of	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	relevant rules and regulations for the establishment of monitoring plans?	monitoring plans		
Data management				
101 (a)	Is the implementation of data collection procedures in accordance with the monitoring plan, including the quality control and quality assurance procedures?	The implementation of data collection procedures is in accordance with the determined monitoring plan **CL 15.** Please, provide the more detailed description of the internal audit and control procedures applied to the project	CL15	OK
101 (b)	Is the function of the monitoring equipment, including its calibration status, is in order?	**CL 04.** Please, provide information on the ASTPC mentioned in the current MR **CL 06.**The next check date for Alpha A1140 (ID number 1), mentioned in the present MR is 14.04.2014 that differs from the one in the previous MR **CL 07.** Please, explain whether the calibration schedule has been developed; provide supporting documents to prove this **CAR 09.** According to the passports for the meters THK-1-1 #3360 and #26880 the date of their issuing is 24/03/2011 and the date of calibration is 05/04/2011 which doesn't correspond to the new turbine operation start date. Please explain when they were installed, how the input and output steam temperature was measured	CL04 CL06 CL07 CAR09	OK OK OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
101 (c)	Are the evidence and records used for the monitoring maintained in a traceable manner?	**CL 03.** Please, explain who the external consumers of the COG are **CL 05.** What is the PP's view on how the consumption of the fuels other than COG is to be checked **CL 09.** Please, paraphrase the description for the conversion factor 1000 used in formula D.1.4. so as to make it more clear and understandable. **CL 10.** It is stated in Section B.2.6. that once in half year the SES (sanitary and epidemiological service) tests the working environment for negative effects such as excessive level of noise and vibration. Please, provide documented evidences to prove this. **CL11.** Please provide references for the noise and vibration nominal permitted level **CAR 04.** Please, indicate the dates when the Cards on working conditions mentioned in Section B.2.6. of the MR were issued **CL 12.**Please, explain where the data base is saved and who is responsible for the data base processing? **CL 14.** Please, provide explanation on what device the LCD display mentioned in Section B.3.refers to **CL 13.** Please, provide the service contract with "TRAFIC" company	CL03 CL05 CL09 CL10 CL11 CL12 CL13 CL14 CL18 CAR04 CAR07 CAR08 CAR10	OK OK OK OK OK OK OK OK OK OK OK OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		CAR 07. Passports on turbines and generators were not submitted **CAR 08.**Passports for METRANS 100 #412710, #460897, #459619, #173372 were not submitted, the dates of the subsequent calibration of those meters differ in the calibration schedule and MR. Please check this and make appropriate corrections **CL 18.** Please, provide documents to prove the date of putting into operation the new turbine **CAR 10.** According to the certificate on accounting the power generated in 2010, the power generated by generator #2 is accounted since May 2010. On the other hand the PPs claim that the date of putting it into operation is June 2010. Please, provide explanation for this		
101 (d)	Is the data collection and management system for the project in accordance with the monitoring plan?	**CAR 02.** It is stated in the operational and management structure that data from the log books are sent to the Chief of Heat and Power Department monthly. It was revealed by the verifier during the site visit that those data are forwarded to that Department daily. Please, explain which is correct and reflect this in the MR. **CAR 05.** Specify what kinds of metering the	CAR02 CAR05 CL16 CL17 FAR01	OK OK OK To be checked during the next verification

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		persons listed in Section C.1.1. of the MR are responsible for **CL 16.** Please, provide information on where the troubleshooting events are reflected **CL 17.** Please, provide the supporting documents for the outstanding issues presented by the verifiers on the preliminary list of CARs and CLs **FAR 01.** The documents on EIA requested from the PPs by the verifiers refer to the "Reconstruction of the Coke Battery#1bis Complex" Project		
Verification regarding programs of activities (additional elements for assessment)				
102	Is any JPA that has not been added to the JI PoA not verified?	N/A	N/A	N/A
103	Is the verification based on the monitoring reports of all JPAs to be verified?	N/A	N/A	N/A
103	Does the verification ensure the accuracy and conservativeness of the emission reductions or enhancements of removals generated by each JPA?	N/A	N/A	N/A
104	Does the monitoring period not overlap with previous monitoring periods?	N/A	N/A	N/A
105	If the AIE learns of an erroneously included JPA, has the AIE informed	N/A	N/A	N/A

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	the JISC of its findings in writing?			
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	N/A	N/A	N/A

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	verified; − The length of monitoring periods of the JPAs being verified; and − The samples selected for prior verifications, if any?			
107	Is the sampling plan ready for publication through the secretariat along with the verification report and supporting documentation?	N/A	N/A	N/A
108	Has the AIE made site inspections of at least the square root of the number of total JPAs, rounded to the upper whole number? If the AIE makes no site inspections or fewer site inspections than 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
109	Is the sampling plan available for submission to the secretariat for the JISC.s ex ante assessment? (Optional)	N/A	N/A	N/A
110	If the AIE learns of a fraudulently included JPA, a fraudulently monitored JPA or an inflated	N/A	N/A	N/A

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	number of emission reductions claimed in a JI PoA, has the AIE informed the JISC of the fraud in writing?			

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
CAR 01. The electricity grid EF differs throughout the MR and excel spreadsheet. Please, bring it in line and make due corrections to the MR	95 (c)	Excel spreadsheet and monitoring report were corrected. *Please find revised Excel spreadsheet and Monitoring Report , version 2.0 (p. 3, 18).*	CAR 01 is closed based on the relevant corrections made to the MR
CL 01. Please, explain whether the amount of COG measured or calculated, make it clear in the MR (p.3)	95 (b)	Amount of COG, which would not be supplied to external consumers due to the project activity. This value can be calculated by the difference between steam input and steam output amounts of condensing turbine, in accordance with the project conditions. *Please find revised MR, version 2.0 (p.4).*	Issue is closed based on the explanation provided

CL 02. It is indicated in the MR that June 2010 is the date of the 2nd turbine installation. Please, provide information and supporting documents on the date when it was put into operation	93	2nd turbine was put into operation in June 2010. *Please find revised MR, version 2.0 (p.4).* *Please find the folder Act of putting into operation in the archive 20110505_MR002_ZaporozhCox_CAR _files.rar*	CL 02 is closed based on the information provided
CL 03. Please, explain who the external consumers of the COG are	101 (c)	The external consumer of the COG for this monitoring period is Zaporizhstal Integrated Iron & Steel Works JSC only. *No changes to MR needed*	CL 03 is closed based on the explanation provided
CL 04. Please, provide information on the ASTPC mentioned in the current MR	101 (b)	ASTPC is part of the general energy resources accounting system of the enterprise. The energy resources accounting system developed and maintained by private enterprise "Traffic" in accordance with the contract. Please find the file: Please find the folder Traffic contract in the archive 20110505_MR002_ZaporozhCox_CAR _files.rar	CL 04 is closed based on the information provided

CL 05. What is the PP's view on how the consumption of the fuels other than COG is to be checked	101 (c)	All kinds of fuel used in the enterprise are recorded in ASTPC and displayed in reports. Those reports show that no other fuels were used during this monitoring period. The reports and information from ASTPC were available for auditing team during the site visit *No changes to MR needed.*	CL 05 is closed based on the information provided
CL 06. The next check date for Alpha A1140 (ID number 1), mentioned in the present MR is 14.04.2014 that differs from the one in the previous MR	101 (b)	The previous report contained an error. The correct date is 14.04.2014 *Please find revised Table B1.2 of MR, version 2.0 (p.7).*	CL 06 is closed based on the corrections made to the MR
CL 07. Please, explain whether the calibration schedule has been developed; provide supporting documents to prove this	101 (b)	The calibration schedule has been developed. *Please find the folder Calibration schedule in the archive 20110505_MR002_ZaporozhCox_CAR_files.rar* *No changes to MR needed*	CL 07 is closed based on the additional information provided

CAR 02. It is stated in the operational and management structure that data from the log books are sent to the Chief of Heat and Power Department monthly. It was revealed by the verifier during the site visit that those data are forwarded to that Department daily. Please, explain which is correct and reflect this in the MR.	101 (d)	Data from the log books are sent to the Chief of the Heat and Power Department daily. *Please find revised MR, version 2.0 (p.9).*	CAR 02 is closed based on the information provided and corrections made to the MR
CL 08. Please, provide supporting documents on the values claimed in the table of Section B.2.3.of the MR	95 (b)	*Please find the folder Supporting documents in the archive 20110505_MR002_ZaporozhCox_CAR _files.rar*	CL 08 is closed based on the documented evidence provided
CAR 03. Provide the description for the index ***y*** used in formulas	95 (d)	Index ***y*** is monitoring period. *Please find revised MR, version 2.0 (p.12, 18, 19).*	
CL 09. Please, paraphrase the description for the conversion factor 1000 used in formula D.1.4. so as to make it more clear and understandable.	101 (c)	1000 – conversion factor needed to convert kg CO_2 eq in tCO_2 eq. *Please find revised MR, version 2.0 (p.12).*	CL 09 is closed based on the amendments made to the MR

CL 10. It is stated in Section B.2.6. that once in half year the SES (sanitary and epidemiological service) tests the working environment for negative effects such as excessive level of noise and vibration. Please, provide documented evidences to prove this.	101 (c)	Certification of jobs held once every 5 years according to: Resolution of the Cabinet of Ministers № 40042 of 01.08.1992 "The procedure for attestation of working places on working conditions" Last certification was at 2008 year. As a result of these measurements the working condition cards for relevant workplaces are issued. Last certification was at 2008 year. To investigate this influence the district sanitation and epidemiological service (SES) makes the measurement. Frequency of inspections is established SES. *Please find the folder Working condition cards and file Contract SES.pdf in the archive 20110505_MR002_ZaporozhCox_CAR _files.rar* *Please find the revised MR, version 2.0 (p.12).*	CL 10 is closed based on the documented evidence provided
CL11. Please provide references for the noise and vibration nominal permitted level	101 (c)	*Please find the folder Working condition cards in the archive 20110505_MR002_ZaporozhCox_CAR _files.rar*	Required information has been provided. CL 11 is closed

CAR 04. Please, indicate the dates when the Cards on working conditions mentioned in Section B.2.6. of the MR were issued	101 (c)	Certification of jobs held once every 5 years according to: Resolution of the Cabinet of Ministers № 40042 of 01.08.1992 "The procedure for attestation of working places on working conditions" Last certification was at 2008 year. *Please find the folder Working condition cards in the archive 20110505_MR002_ZaporozhCox_CAR _files.rar*	Required information has been provided. CAR 04 is closed
CL 12. Please, explain where the data base is saved and who is responsible for the data base processing?	101 (c)	The database is stored on a computers in the Heat and Power Department. Tatyana Zabavko is responsible for the data base processing. *No changes to MR needed*	Appropriate explanation has been provided. CL 12 is closed
CL 13. Please, provide the service contract with "TRAFIC" company.	101 (c)	*Please find the folder Traffic contract in the archive 20110505_MR002_ZaporozhCox_CAR _files.rar*	The required information has been submitted to the verifiers. Issue is closed
CL 14. Please, provide explanation on what device the LCD display mentioned in Section B.3.refers to	101 (c)	The LCD display of electricity meters. *Please find revised MR, version 2.0 (p.13).*	Appropriate explanation has been provided. CL 114 is closed

CL 15. Please, provide the more detailed description of the internal audit and control procedures applied to the project	101 (a)	Independently data is submitted and processed in the manufacturing department and the the heat and power department. These units submit the results to the department of planning. In case of differences data is checked and found out the cause. *Please find revised MR, version 2.0 (p.16).*	CL 15 is closed based on the required description provided
CAR 05. Specify what kinds of metering the persons listed in Section C.1.1. of the MR are responsible for	101 (d)	Electricians are responsible for the data registration from the electricity meters. Process engineers are responsible for the data registration from the ASTPC. *Please find revised MR, version 2.0 (p.15).*	CAR 05 is closed based on the explanation provided
CL 16. Please, provide information on where the troubleshooting events are reflected	101 (d)	Troubleshooting events are reflected in Daily lists of the equipment work *Please find the folder Daily lists in the archive 20110505_MR002_ZaporozhCox_CAR_files.rar:*	Required information has been provided. CL 16 is closed

CL 17. Please, provide the supporting documents for the outstanding issues presented by the verifiers on the preliminary list of CARs and CLs	101 (d)	*Please find the files and folder in the archive 20110505_MR002_ZaporozhCox_CAR_files.rar:* *Ownership.pdf* *Contract archiving.pdf* *Teaching license.pdf* *Environmental assessment*	The documents have been provided. CL 17 is closed

CAR 06. It is stated in the determined PDD version 5.0 that the time of monitoring referring to the Emission factor for electricity from the grid is to be fixed ex-ante during determination and its value 0.896 tCO2/MWh was determined for the period 2008-2012 . The EF must be applied taking into consideration the respective Orders of the NEIA of Ukraine. Please, check this out and make due corrections to the MR and excel spreadsheet	95(c)	According to the PDD electricity generated by the project from the COG and consumed by ZCP's auxiliaries apply an Emission Factor (EF) of 0.896 tCO2/MWh as a project reducing electricity consumption from the grid. The emission factor for the Ukrainian electricity grid, developed by Global Carbon B.V., determined by TUV SUD and final determined by the JISC, will be used for the baseline emissions calculation. At the time of determination, it was the most accurate Emission Factor for electricity production in Ukraine. In 2011, the National Environmental Investment Agency of Ukraine has set a new Emission Factors for electricity production as 1,067 tCO2/MWh for 2010 and 1,063 tCO2/MWh for 2011. New emission factors based on recent studies of fuel consumption for electricity production in Ukraine. Therefore, in this monitoring report uses updated Emission Factors. Please find revised Excel spreadsheet and Monitoring Report , version 2.0.	CAR 06 is closed, as the required information has been reflected in the MR.

CAR 07. Passports on turbines and generators were not submitted	101(d)	*Please find folder Passports turbines #1 and #2, folder Passport generator #1 and folder Passport generator #2 in the archive 20110505_MR002_ZaporozhCox_CAR _files.rar*	Required documents have been submitted. Issue is closed
CAR 08. Passports for METRANS 100 #412710, #460897, #459619, #173372 were not submitted, the dates of the subsequent calibration of those meters differ in the calibration schedule and MR. Please check this and make appropriate corrections	101(d)	The dates of the subsequent calibration of those meters are 21.04.2012 because maximum calibration interval for the Metran 100 sensor is equal to 1 year. The last check dates were 21.04.2011 in the passports for METRANS, calibration schedule and MR. Therefore there is no difference between calibration schedule and MR. *Please find folder Passports of Metran 100 and THK-1-1 and folder Calibration schedule in the archive 20110505_MR002_ZaporozhCox_CAR _files.rar*	Required documents have been submitted. Additional explanation has been provided CAR 08 is closed

CAR 09. According to the passports for the meters THK-1-1 #3360 and #26880 the date of their issuing is 24/03/2011 and the date of calibration is 05/04/2011 which doesn't correspond to the new turbine operation start date. Please explain when they were installed, how the input and output steam temperature was measured	101(c)	THK-1-1 #3360 and #26880 meters are part of the basic equipment turbine №2 and installed simultaneously. Meters were put into operation simultaneously with all the equipment turbine №2 at 25/06/2010. The date of preparation of a passport to the meters is 24/03/2011. These meters are included in Automatic system for technological process control (ASTPC) and a separate passport for them is not required. But for the monitoring of the project were completed passports at every counter and held early-calibration meters. *Please find folder Passports of Metran 100 and THK-1-1 in the archive 20110505_MR002_ZaporozhCox_CAR _files.rar*	CAR 09 is closed based on the explanation provided
CL 18. Please, provide documents to prove the date of putting into operation the new turbine	101 (c)	The date of putting into operation the new turbine is 25/06/2010. *Please find folder Act of putting into operation in the archive 20110505_MR002_ZaporozhCox_CAR _files.rar*	CL 18 is closed based on the documentary evidence presented

CAR 10. According to the certificate on accounting the power generated in 2010, the power generated by generator #2 is accounted since May 2010. On the other hand the PPs claim that the date of putting it into operation is June 2010. Please, provide explanation for this	101(c)	The date of putting it into operation is June 2010. In May 2010 were carried out commissioning tests turbine №2 and was generated by a certain amount of electricity that is taken into account in a monitoring report.	CAR 10 is closed based on the documentary evidence presented
FAR 01. The documents on EIA requested from the PPs by the verifiers refer to the "Reconstruction of the Coke Battery#1bis Complex" Project	101(d)		To be checked during the next verification