VERIFICATION REPORT

LLC "ECO-ALLIANCE"

VERIFICATION OF THE

"CMM UTILISATION ON THE COAL MINE № 22 "KOMMUNARSKAYA" OF THE STATE HOLDING JOINT-STOCK COMPANY "GOAO SHAKHTOUPRAVLENYE DONBASS"

2nd periodic

REPORT NO. UKRAINE-VER/0197/2010

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BUREAU VERITAS CERTIFICATION

Report No: UKRAINE-ver/0197/2010

VERIFICATION REPORT

Date of first issue: 25/05/2011	Organizational unit: Bureau Veritas Certification Holding SAS
Client: LLC “Eco-Alliance”	Client ref.: Volodymyr Kasyanov

Summary:
Bureau Veritas Certification has made the 2nd periodic verification for the period from 01 April 2010 to 15 March 2011 of the “CMM utilisation on the Coal Mine № 22 “Kommunarskaya” of the State Holding Joint-Stock Company “GOAO Shakhtoupravlenye Donbass”, JI Registration Reference Number 0078, project of LLC “Eco-Alliance” located in Suyevka city, Donetsk region, Ukraine, and applying the methodology ACM0008 version 03, 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 166441 tons of CO_2eq for the monitoring period from 01/04/2010 to 15/03/2011.

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/0197/2010	Subject Group: JI	
Project title: “CMM utilisation on the Coal Mine № 22 “Kommunarskaya” of the State Holding Joint-Stock Company “GOAO Shakhtoupravlenye Donbass”		
Work carried out by: Team Leader, Lead Verifier: Igor Kachan Team Member, Verifier: Victoria Legka Team Member, Technical Specialist: Igor Antipko		
Work reviewed by: Ivan Sokolov - Internal Technical Reviewer Dmytro Balyn - Technical Specialist		
Work approved by: Flavio Gomes – Operational Manager		
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Abbreviations

AIE	Accredited Independent Entity
BVC	Bureau Veritas Certification Holding SAS
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CH_4	Methane
CL	Clarification Request
CMM	Coal Mine Methane
CO_2	Carbon Dioxide
DVM	Determination and Verification Manual
ERU	Emission Reduction Unit
FAR	Forward Action Request
GHG	Green House Gas(es)
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
JI	Joint Implementation
JISC	Joint Implementation Supervisory Committee
MP	Monitoring Plan
MR	Monitoring Report
DFP	Designated Focal Point
NMHC	Non methane hydrocarbons
QA/QC	Quality Assurance/Quality Control
PDD	Project Design Document
UNFCCC	United Nations Framework Convention for Climate Change
VAH	Ventilation Air Heater

1 INTRODUCTION

Public Joint Stock Company “CMM utilisation on the Coal Mine № 22 “Kommunarskaya” of the State Holding Joint-Stock Company “GOAO Shakhtoupravlenye Donbass” (hereafter called “the project”) at Suyevka city, 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.

The verification covers the period from 1st April 2010 to 15th March 2011.

1.1 Objective

Verification is the periodic independent review and ex post determination by the Accredited Independent Entity (AIE) 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, the determined project design document including the project’s baseline study, revised monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations.

The verification is not meant to provide any consulting towards the Client. However, stated requests for clarifications, corrective and/or forward actions may provide input for improvement of the project monitoring towards reductions in the GHG emissions.

1.3 Verification Team

The verification team consists of the following personnel:

Igor Kachan
Bureau Veritas Certification Team Leader, Climate Change Lead Verifier

Victoria Legka
Bureau Veritas Certification Team Member, Climate Change Verifier

Igor Antipko
Bureau Veritas Certification Team Member, Technical Specialist

This verification report was reviewed by:

Ivan Sokolov
Bureau Veritas Certification, Internal Technical Reviewer

Dmytro Balyn
Bureau Veritas Certification, Technical Specialist

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 LLC “Eco-Alliance” and additional background documents related to the project design, baseline, and monitoring plan, i.e. country Law, Project Design Document (PDD), Approved CDM methodology ACM0008 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 version 1 of 07 March 2011, ver.2 of 08 April 2011, ver.3 of 13 May 2011 and ver.5 of 24 May 2011; revised Monitoring Plan versions 1 of 10 March 2011, 3 of 15 May 2011 and 5 of 24 May 2011 and project as described in the determined PDD.

2.2 Follow-up Interviews

On 17/03/2011 Bureau Veritas Certification verification team conducted a visit to the project site, State Open Joint-Stock Company "Shakhtoupravlenye Donbass" (SOJSC Shakhtoupravlenye Donbass"), and performed (on-site) interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of the SOJSC "Shakhtoupravlenye Donbass", Eco-Alliance Ltd. and Carbon-TF B.V. were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
SOJSC "Shakhto-upravlenye Donbass", Eco-Alliance Ltd.	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
Consultants: Carbon-TF B.V., Eco-Alliance Ltd.	Baseline methodology Monitoring plan Revision to the monitoring plan Monitoring report Deviations from PDD.

2.3 Resolution of Clarification, Corrective and Forward Action Requests

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

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

(a) Corrective action request (CAR), requesting the project participants to correct a mistake that is not in accordance with the monitoring plan;

(b) Clarification request (CL), requesting the project participants to provide additional information for the 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 31 Corrective Action Requests, 13 Clarification Requests and 4 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

During previous 1st periodic verification conducted for the period of 07/07/2008-31/03/2010 by TÜV SÜD two Forward Action Request were issued:
FAR 01. Please provide till the next verification a Monitoring Manual including the Quality Management/QM procedures.

FAR 02. A project permission issued by the Ukrainian environmental authority has to be presented to the verifier at the next verification date.

The Clarification Request 10 has been raised by the BVC verification team in order to clarify how both FARs have been addressed.
As a response to FAR 01 the project participants provided the Monitoring Manual containing procedures for data collection, monitoring and quality assurance. Hence, FAR 01 has been resolved.
In respect of FAR 02 the project's permission by national environmental authority is still under consideration; the request and relevant documentation package have already been submitted by the coal mine to the national authority and the permission is expected to be available by the end of 2011. Thus, a FAR (FAR 04 of this report) has been raised. The project's permission by the Ukrainian environmental authority will be checked during next periodic verification.

3.2 Project approval by Parties involved (90-91)

The project was approved by the host Party, Ukraine, which is confirmed by the Letter of Approval of Ministry for Environmental Protection of Ukraine No 3873/11/10-08, issued on 26/03/2008. The written project approval by the Netherlands, the other Party involved, has 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 (Approval of voluntary participation in a Joint Implementation Project of the Ministry of Economic Affairs of the Netherlands, Ref. 2008JI05, dated 22/04/2008).

The abovementioned written approvals are unconditional.

3.3 Project implementation (92-93)

The present JI project implies utilization of CMM from the suction system of the re-activated coal mine № 22 "Kommunarskaya" for heat and power generation and its further destruction by flaring.

The project has not been implemented as planned. Additionally to already installed ventilation air heater, flare No.1, cogeneration unit No.1 and two

gas-fired boilers No.1 and No.2 as envisaged in the PDD tree more upgrade boilers and two further flares have been installed.

Since the last verification flare No.2 of 8 MW capacity and flare No.3 of 10 MW capacity were installed and started their operation on 08/08/2010 and 05/11/2010 respectively. Also, the electronically monitoring systems for boilers and ventilation air heater (VAH) have been installed for the monitoring of the gas amount sent to these units on 12/06/2010 and 15/12/2010 respectively. Until indicated dates the gas amount sent to boilers and VAH was not monitored.

The installation of the second cogeneration unit (planned for January 2009 in the PDD) is delayed due to lacking funds and was rescheduled for spring 2011.

The status of project activity implementation compared with the PDD is presented in the table below:

Table 2. Status of implementation including updated timetable for project component

Unit	**Planned installation date and firing capacity, as stated in the PDD**	**Implementation status and updated timetable**
boiler No.1 & No.2	December 2007, two units of 3,150 MW capacity each (total 6,3 MW)	October 2008 – two units, October 2009 – tree units 1,167 MW capacity per unit (total 5,835 MW)
Flare No: 1	December 2007, 5 MW capacity	December 2008, 10 MW capacity
Flare No: 2	Not envisaged in the PDD	August 2010, 8 MW capacity
Flare No: 3	Not envisaged in the PDD	October 2010, 10 MW capacity
ventilation air heater	January 2008, 3 MW capacity (tree identical modules of 1 MW capacity each)	October 2009, 2 modules of 1 MW capacity each and one module of 0,75 MW (total 2,75 MW)
cogeneration unit 1	January 2008, 1,35 MW capacity	January 2010, 1,35 MW installed capacity
cogeneration unit 2	January 2009, 1,35 MW capacity	delayed; the installation is planned for spring 2011

As mentioned and evident from the table above, there were changes to the project's design as described in the PDD that occurred after the determination had been deemed final. The changes relate to the following:

- delay in installation of all project unit compared to the timeline in the PDD;
- the number and capacity of boilers installed: five modified gas-fired boilers with total capacity of 5,835 MW were installed instead of instead of two new gas boilers with total capacity of 6,3 MW as planned in the PDD;
- the extension the firing capacity of the flare No.1 from 5 MW as stated in the PDD to 10 MW in order to increase the CMM utilization level;
- change in capacity of ventilation air heater to 2,7 MW instead of 3 MW;
- additional implementation of the flares No.2 and No.3.

The project participants presented the detailed description of all changes that have occurred and provide justification for these changes in the Annex 5 of the current Monitoring Report. The description and justification of the changes (within the Monitoring Report) was made publicly available via UNFCCC web-site.
The first four modifications as listed above (regarding project implementation delay, capacity of the flare No.1 and VAH, number and total capacity of gas-fired boilers) occurred during previous monitoring period and were positively determined by AIE TUV SUD in its 1st periodic verification report No.600500457 of 16/03/2011. In respect of those changes, it was concluded that project remained additional, and conditions stated in the "Procedures regarding changes during project implementation" were confirmed.

In course of the present monitoring period further deviation from the project design as described in the PDD has occurred: two additional flares No.2 (8 MW capacity) and No.3 (10 MW capacity) for methane destruction have been installed. Both flares have been installed because of the much higher than expected methane amount at the coal mine. As the flares produce only costs without JI-revenues, the project gains more investment and operational costs without any additional income. Thus, the additionality of the project remains intact.

As per JISC "Procedures regarding changes during project implementation", Version 1, Bureau Veritas Certification can confirm that the conditions defined by paragraph 33 of the JI guidelines are still met for the project, and that the changes do not alter the original determination opinion for the project. Specifically, BVC confirms that:
(a) The physical location of the project has not changed;
(b) The emission sources have not changed;
(c) Baseline scenario has not changed;

(d) The changes are consistent with the applied CDM methodology ACM0008 upon which the determination was prepared for the project.

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

The monitoring occurred in accordance with the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website and revised monitoring plan ver.5 of 24/05/2011 which was positively determined in course of the current verification.

For calculating the emission reductions, key factors, such as availability and amount of extracted coal gas, concentration of methane in the extracted gas, heat demand at the coal mine and others, influencing the baseline emissions and the activity level of the project and the emissions as well as risks associated with the project were taken into account.

Data sources used for calculating emission reductions such as appropriately calibrated measuring devices, equipment specifications, official data for Ukrainian power grid published by National Environmental Agency of Ukraine, sectoral standards, IPCC guidelines, laboratory analysis etc., are clearly identified, reliable and transparent.

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

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

3.5 Revision of monitoring plan (99-100)

In the course of considered monitoring period (01/04/2010 – 15/03/2011) the original monitoring plan described in the registered PDD version 06 of 06/07/2009 was modified by the project participants. The project participants submitted for determination the Revised Monitoring Plan which was determined by BVC during current verification. Final version of the Revised Monitoring Plan, version 5 of 24/05/2011, contains detailed descriptions of all the changes introduced and appropriate justification for these changes. The changes are as follows:

1. The amount of heat produced by the ventilation air heater (VAH), the parameter $HEAT_{VAH}$, is not directly measured as prescribed by the PDD but calculated using the heat generation efficiency by the VAH specified by the manufacturer, monitored methane amount destroyed in VAH and heating value of methane.

The parameter's determination method has been changed because of the impossibility to install the heat meter at VAH. For calculation of heat amount produced by VAH the lowest value of heat production efficiency has been taken from VAH's technical report (74,2%); this is considered to be conservative. The amount of methane sent to VAH is measured by a flow meter with 15 min cycle. The methane heating value is adopted from the international standard DIN EN ISO 6976 which is a reliable data source. Thus, the introduced modification is appropriately justified and is in line with the rules for establishment of the monitoring plans.

2. Formulas for calculation of methane amount destroyed through flaring (MD_{FL}), power (MD_{ELEC}) and heat (MD_{HEAT}) generation and for CMM capture in the project activity (CMM_{PJ}) were added; these were missing in the original monitoring plan.

The formulas are based on the applied monitoring methodology ACM0008 and their inclusion makes the monitoring plan more compliant with the applied methodology. This also improves the transparency of the project monitoring and accuracy to the monitoring plan.

3. The monitoring plan has been clarified in order to provide for monitoring of VAH related data. So, for the parameters MM_{HEAT} (methane sent to heat generation) and HEAT (heat generation by the project) it has been specified that they represent the calculated sum of two separate measurement for boiler and VAH.

In order to demonstrate the nature of parameters MM_{HEAT} and HEAT, the formulas (7a) and (25) have been added to the monitoring plan. This change improves transparency and accuracy of the project monitoring.

4. The quality assurance and quality control procedures for parameters P5 (power consumption) and B46 (power production) were modified in respect of calibration interval of the power meters. The PDD indicates this as 2 years, but in fact it is 6 years.

The calibration intervals have been changed according to the installed power meters' passports. This modification provides more correct and up-to-date information compared to original monitoring plan.

5. The project operational and management structure and underlying responsibilities were updated according to the current situation.

The described updated responsibilities under the project were confirmed during the verification; they reflect the project equipment providers' responsibilities and present the situation observed during the considered monitoring period and nowadays.

6. The formula for calculation of the project emissions from uncombusted methane has been updated; project emissions from flaring are presented as a separate parameter PE_{Flare} in updated formula. The formula for calculation of PE_{Flare} was adopted from

"Tool to determine project emissions from flaring gases containing methane" and adjusted to fit the applied measuring/monitoring method better and to be applied to variable monitoring periods.

The revised formula for calculation of the project emissions from uncombusted methane now corresponds to the monitoring methodology ACM0008. It provides for more accurate calculation of project emissions from uncombusted methane.

7. The frequency of determination (calculation) of some monitoring parameters, which are cumulative values, (PE, BE, BE_{MR}, BE_{Use}, CMM_{PJ}, GEN, HEAT) was changed from annual to a monitoring period length.

The original monitoring plan in the PDD indicates that these parameters are to be calculated for the year y, however, the current monitoring period is shorter that a year. Therefore, in order to provide the possibility to calculate the emission reductions for the various monitoring periods the minor change to the description of parameters was done. This modification has mostly a specifying nature; no changes to project monitoring system or data recording were made. The existing project monitoring system provides for measurement of major monitoring input data with 15 min interval. This change was found to be appropriate as it improves the accuracy of the monitoring plan.

8. A minor change in symbol name and description of the parameters B55 and B57 was made due to the inconsistent naming used in the original monitoring plan in the PDD.

The modification provides consistency in parameters' identification and better traceability. The changed names now are congruent with ACM0008.

Based on above mentioned, BVC can conclude that the proposed revision of the monitoring plan 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.

3.6 Data management (101)

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

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

Three separate monitoring systems are used for electronically data collection in the project. All three of them are of the similar operational scheme.

Data from the boilers and the VAH are collected, processed and stored using a Siemens SIMATIC PLC S7 system and Siemens WINCC programming software. All data is stored in the internal memory about 2 GB and one time per hour are sent via GPS to an Internet-based Server data base. Eco-Alliance ensures regular back up's and archiving. The data can be read any time from the internet data base by authorised personnel. As all input data are stored, the automatically calculation can by checked in retrospect any time.

Data from the flare and the cogeneration unit are collected, processed and stored using a Siemens SIMATIC PLC S7 system and Siemens WINCC programming software. The data are read daily by Kuhse GmbH via GPS and stored in the Kuhse database in Germany. The data can be viewed any time using special access software provided by Kuhse. Kuhse ensures regular back ups and archiving. The data are regularly reviewed by Carbon-TF and LLC "Eco-Alliance". Carbon-TF provides regularly storing and archiving of the data as well as regularly transfer to Excel sheets for analysis, evaluation and reporting procedures.

The data on CMM flow to the cogeneration unit are recorded by a DAVID System (Data acquisition and visualisation device) developed by the Fraunhofer Institute UMSICHT. The data are stored in the internal memory of the DAVID. One time per day the data are recalled via GPS to the central data base at the Fraunhofer Institute and are available via an internet front end. The server provider ensures regular back ups and archiving.

For plausibility checks and potential data back up, data recorded by coal mine personnel in hand written journals can be taken. The journals are stored by the coal mine.

Eco-Alliance together with coal mine personnel conduct periodic audits of the project monitoring process including service audits. The regular back-up is performed for the monitoring data.

The monitoring activities including data collection procedures, the quality control and the quality assurance procedures are written down in the project Monitoring Manual.

The function of the monitoring equipment, including its calibration status, is in order. The measurement equipment used for project monitoring is serviced, calibrated and maintained in accordance with the original manufacturer's instructions and industry standards; relevant records are kept as required.

The evidence and records used for the monitoring are maintained in a traceable manner. All necessary information for monitoring of GHGs emission reductions are stored in paper or/and electronic formats.

The data collection and management system for the project is in accordance with the PDD and revised monitoring plan.

The general project management is implemented by the Technical Director of Shakhtoupravlenye Donbass, the Holding Company of the Coal Mine Nr.22 Kommunarskaya, through supervision and coordination of activities of his subordinates, such as deputy director on surface degasification, heat technician, and heads of safety engineering departments. The project management structure is presented in the MR section C.1.1.

Daily a group of mechanics and electricians who are responsible for the measures and maintenance of all technological equipment and measuring instruments are present on-site. The operation and maintenance of the plant is provided by LLC "Eco-Alliance". The monitoring system is supervised by the administration of the coal mine under the existing control and reporting system.

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

3.7 Verification regarding programmes of activities (102-110)

Not applicable.

4 VERIFICATION OPINION

Bureau Veritas Certification has performed the 2nd periodic verification for the period from 01 April 2010 to 15 March 2011 of the "CMM utilisation on the Coal Mine № 22 "Kommunarskaya" of the State Holding Joint-Stock Company "GOAO Shakhtoupravlenye Donbass" project in Ukraine, which applies the methodology ACM0008 version 3. 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 monitoring reports, 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 LLC "Eco-Alliance" 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 06 and revised monitoring plan ver. 5. The development and maintenance of records and reporting procedures are 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 5, for the reporting period from 01/04/2010 to 15/03/2011 as indicated below. Bureau Veritas Certification confirms that the project is implemented as per determined changes. Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately. The monitoring system is in place and the project is generating GHG emission reductions.

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

Reporting period: From 01/04/2010 to 15/03/2011

For the period from 01/04/2010 to 31/12/2010

Baseline emissions	: 132234	t CO_2 equivalents;
Project emissions	: 17795	t CO_2 equivalents;
Emission Reductions	: 114439	t CO_2 equivalents.

For the period from 01/01/2011 to 15/03/2011

Baseline emissions	: 60114	t CO_2 equivalents;
Project emissions	: 8112	t CO_2 equivalents;
Emission Reductions	: 52002	t CO_2 equivalents.

Total for the period from 01/04/2010 to 15/03/2011:

Baseline emissions	: 192348	t CO_2 equivalents;
Project emissions	: 25907	t CO_2 equivalents;
Emission Reductions	: 166441	t CO_2 equivalents.

5 REFERENCES

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

/1/ Monitoring Report for the period from 01/04/2010 till 15/03/2011 version 1 dated 07/03/2011

/2/ Monitoring Report for the period from 01/04/2010 till 15/03/2011 version 2 dated 08/04/2011

/3/ Monitoring Report for the period from 01/04/2010 till 15/03/2011 version 3 dated 13/05/2011

/4/ Monitoring Report for the period from 01/04/2010 till 15/03/2011 version 5 dated 24/05/2011

/5/ Revised Monitoring Plan version 1 of 10/03/2011

/6/ Revised Monitoring Plan version 2 of 08/04/2011

/7/ Revised Monitoring Plan version 3 of 15/05/2011

/8/ Revised Monitoring Plan version 5 of 24/05/2011

/9/ Calculation of Emission Reductions – excel file “ER-K22-2010-04-01 to 2011-03-15.V2.xls”, Version 2

/10/ Calculation of Emission Reductions – excel file “ER-K22-2010-04-01 to 2011-03-15.V3.xls”, Version 3

/11/ Calculation of Emission Reductions – excel file “ER-K22-2010-04-01 to 2011-03-15.V5a.xls”, Version 5a

/12/ Flare No.1 measurement data – excel file “K22-F1_Measuring_Data_2010-04-01 to 2011-03-15.V2.xls”

/13/ Flare No.2 measurement data – excel file “K22-F2_Measuring_Data_2010-08-07 to 2011-03-15.V2.xls”

/14/ Flare No.3 measurement data – excel file “K22-F3_Measuring_Data_2010-11-05 to 2011-03-15.V2.xls”

/15/ Boilers measurement data – excel file ”K22-B1_Measuring Data_2010-06-12 to 2011-03-15.V2.xls”

/16/ Ventilation air heater measurement data – excel file ”K22-VAH_Measuring Data_2010-12-15 to 2011-03-15.V2.xls”

/17/ Cogeneration unit measuring data – excel file ”K22-M1_Measuring_Data_2010-04-01 to 2011-03-15.V2.xls”

/18/ Project Design Document of the project “CMM utilisation on the Coal Mine № 22 “Kommunarskaya” of the State Holding Joint-Stock Company “GOAO Shakhtoupravlenye Donbass”, version 06 dated 06/07/2009

/19/ 1st periodic verification report “CMM utilisation on the Coal Mine № 22 “Kommunarskaya” of the State Holding Joint-Stock Company “GOAO Shakhtoupravlenye Donbass” No. 600500457, revision 5 dated 16/03/2011

/20/ Letter of Approval of Ministry of Environmental Protection of Ukraine No 3873/11/10-08, issued on 26/03/2008

/21/ Approval of voluntary participation in a Joint Implementation Project of the Ministry of Economic Affairs of the Netherlands No 2008JI05, issued on 22/04/2008

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

/1/ Approved consolidated baseline methodology ACM0008 version 03 "Consolidated baseline methodology for coal bed methane and coal mine methane capture and use for power (electrical or motive) and heat and/or destruction by flaring"

/2/ Methodological "Tool to determine project emissions from flaring gases containing methane"

/3/ Procedures regarding changes during project implementation, JISC22, Annex 2

/4/ Guidance on Criteria for Baseline Setting and Monitoring, version 02, JISC

/5/ Technical data of the equipment TBG620V16K

/6/ Container gas utilization unit CGUU5/8, documentation

/7/ Block-HP Operating manual

/8/ ERU automated monitoring system, serial #5

/9/ Ventilation air heater (VAH) operation logbook for the period from 15/12/2010 till 10/03/2011

/10/ Flare unit #2 operation logbook for the period since 28/12/2010 till 16/02/2011

/11/ Flare unit #1 operation logbook for the period since 15/10/2010 till 13/03/2011

/12/ Failure, interruption journal of flare unit #1 for the period from 01/09/2010 till 15/03/2011

/13/ Failure, interruption journal of flare unit #2 for the period from 25/08/2010 till 15/04/2011

/14/ Failure, interruption journal of generator for the period from 01/10/2010 till 08/03/2011

/15/ Failure, interruption journal of gas generator for the period from 01/10/2010 till 09/01/2011

/16/ Gas generator operation logbook for the period from 12/09/2009 till 17/03/2011

/17/ Flare unit #3 (CGUU-5/8), photo

/18/ Resistance thermometer, serial #4571/1, photo

/19/ Pressure transmitter, serial #08W18C3059154001001, photo

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/21/ Flare unit #1 (CGUU-5/8) operation logbook for the period since 06/11/2010 till 28/02/2011

/22/ Emission reduction units automated calculation system, serial #4

/23/ Boilers operation logbook for the period since 12/06/2010 till 07/03/2011

/24/ Statement dated 16/10/2009 of working committee on acceptance of 5 boilers E-1/9 at boiler house #1 of Coal Mine #22 "Kommunarskaya"

/25/ Upgraded gas boilers, photo

/26/ Flare units #1, #2, photo

/27/ Flare unit #1 gas analyzer, photo

/28/ Flare temperature sensor, photo

/29/ Pressure difference transmitter, serial #08W18C3059154001001

/30/ Gas analyzer, flare unit #2, photo

/31/ Flare #2 temperature sensor, photo

/32/ Gas calculation unit, flare #2, photo

/33/ Power plant electricity meter, photo

/34/ Control sheet of KTEC NCG20K16 unit, serial #143901, for the period since 14/02/2011 till 18/03/2011

/35/ Operation report on KTEC NCG20K16 unit, serial #143901, for the period since 12/01/2011 till 19/01/2011

/36/ Electricity meter type SL7000, serial #5302, documentation

/37/ Passport on gas analyzer type Binos 100, serial #120482003016 (flare #1)

/38/ Passport on gas analyzer type Binos 100, serial #49939003 (flare #2)

/39/ Passport on resistance thermometer type JUMO, serial #98026 (generator)

/40/ Passport on resistance thermometer type Pt 100, serial #4571 (flare unit #1)

/41/ Passport on resistance thermometer type JUMO, serial #98026/2 (flare unit #2)

/42/ Passport on standard orifice, produced 11/05/2010 (VAH)

/43/ Passport on standard orifice, produced 25/11/2010 (boiler house)

/44/ Passport on standard orifice, produced 11/05/2010 (boiler house)

/45/ Passport on standard orifice, serial #491973 (generator)

/46/ Passport on standard orifice, serial #501871 (K22-F1) (flare unit #1)

/47/ Passport on standard orifice, serial #486343 (flare unit #2)

/48/ Multipurpose power meter SL 7000 Smart, documentation

/49/ Certificate #2278 on calibration of pressure transmitter type P121-E02-311, serial #Ex812127126, valid till 18/11/2011, issued by Sumy Regional Scientific and Production Centre of Standardization, Metrology and Certification State Enterprise (generator)

/50/ Certificate #2486 on calibration of pressure transmitter type P121-E02-311, serial #Ex812126961, valid till 20/12/2011, issued by Sumy Regional Scientific and Production Centre of Standardization, Metrology and Certification State Enterprise (flare unit #1)

/51/ Certificate #2277 on calibration of pressure transmitter type P121-EB4-311, serial #Ex612124593, valid till 18/11/2011, issued by Sumy Regional Scientific and Production Centre of Standardization, Metrology and Certification State Enterprise (flare unit #2)

/52/ Certificate #2279 on calibration of pressure transmitter type ST 3000, serial #08W30 C3088100001001, valid till 18/11/2011, issued by Sumy Regional Scientific and Production Centre of Standardization, Metrology and Certification State Enterprise (generator)

/53/ Certificate #2485 on calibration of pressure transmitter type ST 3000, serial #08W18 C3059154001001, valid till 20/12/2011, issued by Sumy Regional Scientific and Production Centre of Standardization, Metrology and Certification State Enterprise (flare unit #1)

/54/ Certificate #2280 on calibration of pressure transmitter type ST 3000, serial #0609 C2801413001001, valid till 18/11/2011, issued by Sumy Regional Scientific and Production Centre of Standardization, Metrology and Certification State Enterprise (flare unit #2)

/55/ Gas analyzer type Binos 100, serial #120482003016 (flare unit #1), documentation

/56/ Gas analyzer type DGM9-OXK, serial #49939003 (flare unit #2), documentation

/57/ Gas analyzer type Binos 100, serial #120482003017 (flare unit #3), documentation

/58/ Pressure transmitter type SITRANS P serie Z, serial #AZB/XD188388 (boiler house cold chamber), documentation

/59/ Pressure transmitter type SITRANS P serie Z, serial #AZB/XD188387 (boiler house hot chamber), documentation

/60/ Pressure transmitter type P121-E02-311, serial #Ex812127126 (generator), documentation

/61/ Pressure transmitter type P121-E02-311, serial #Ex812126961

(flare unit #1), documentation

/62/ Pressure transmitter type P121-EB4-311, serial #Ex612124593 (flare unit #2), documentation

/63/ Pressure transmitter type ST SMART, serial #09W33C3180872001003 (VAH), documentation

/64/ Pressure transmitter type ST SMART, serial #08W30C3088100001001 (generator)

/65/ Pressure transmitter type ST SMART, serial #09W33C3180872001002 (boiler house), documentation

/66/ Pressure transmitter type ST SMART, serial #08W18C3059154001001 (flare unit #1), documentation

/67/ Pressure transmitter type ST SMART, serial #0609C2801413001001 (flare unit #2)

/68/ Pressure transmitter type ST SMART, serial #08W18C3059154001003 (flare unit #3), documentation

/69/ Water temperature on an input resistance thermometer TSPU 1-3 Pt100, serial #09454 (boiler house), documentation

/70/ Water temperature resistance thermometer TSPU 1-3 Pt100, serial #09439 (boiler house), documentation

/71/ Standard orifice (generator), photo

/72/ Standard orifice (flare unit #1), photo

/73/ Standard orifice #486343 (flare unit #2), photo

/74/ Standard orifice (flare unit #3), photo

/75/ Resistance thermometer type TSPU1-3 Pt100, serial #09438 (VAH), documentation

/76/ Acceptance certificate dated 02/2010 on transformer of electric current type T-0.66, serial #18077

/77/ Acceptance certificate dated 09/2009 on transformer of electric current type T-0.66, serial #22610

/78/ Acceptance certificate dated 09/2008 on transformer of electric current type T-0.66, serial #65344

/79/ Pressure transmitter, serial #812126972 (VAH), documentation

/80/ Pressure transmitter, serial #812127139 (VAH), documentation

/81/ Pressure transmitter, serial #41210405 (boiler house), documentation

/82/ Pressure transmitter, serial #812127127 (boiler house), documentation

/83/ Pressure transmitter, serial #812126966 (flare unit #3), documentation

/84/ Power meter, serial #008656037356170, documentation

/85/ Operation manual on power meter type ЦЭ6803В

/86/ Acceptance certificate on electricity meter type ЦЭ6803В/1, serial #0865680707893854, produced 07/2008
/87/ Electricity meter type SL761CO71, serial #53026020 (generator), documentation
/88/ Electricity meter type ЦЭ6803В, serial #008656018001765 (flare unit #1), documentation
/89/ Electricity meter type ЦЭ6803В, serial #0865680707893854 (flare unit #3), documentation
/90/ Thermocouple type S, Pt/PtRh, serial #66315 (flare unit #3), documentation
/91/ Thermocouple type S, Pt/PtRh, serial #56934 (flare unit #1), documentation
/92/ Thermocouple type S, Pt/PtRh, serial #66503 (flare unit #2), documentation
/93/ Resistance thermometer type TSPU 1-3 Pt100, serial #09441 (VAH), documentation
/94/ Resistance thermometer type JUMO, serial #98026 (generator), documentation
/95/ Resistance thermometer type TSPU 1-3 Pt100, serial #09453 (boiler house), documentation
/96/ Resistance thermometer type JUMO, serial #4571 (flare unit #1), documentation
/97/ Resistance thermometer type JUMO, serial #98026/2 (flare unit #2), documentation
/98/ Resistance thermometer type JUMO, serial #4571/1 (flare unit #3), documentation
/99/ Transformer of electric current type Т 0,66 У3, serial #08043, documentation
/100/ Transformer of electric current type Т 0,66 У3, serial #09704, documentation
/101/ Transformer of electric current type Т 0,66 У3, serial #38052, documentation
/102/ Passport on transformer of electric current type Т 0,66, serial #17691
/103/ Passport on transformer of electric current type Т 0,66, serial #18060
/104/ Passport on transformer of electric current type Т 0,66, serial #23463
/105/ Transformer of electric current type Т 0,66 У3, serial #18077 (flare unit #1), documentation
/106/ Transformer of electric current type Т 0,66 У3, serial #22610 (flare unit #1), documentation
/107/ Transformer of electric current type Т 0,66 У3, serial #65344 (flare unit #1), documentation
/108/ Transformer of electric current type Т 0,66 У3, serial #17691 (flare unit #3), documentation

/109/ Transformer of electric current type T 0,66 У3, serial #18060 (flare unit #3), documentation

/110/ Transformer of electric current type T 0,66 У3, serial #23463 (flare unit #3), documentation

/111/ Data record on electricity meter type ЦЭ6803В, serial #008656018001765

/112/ Installation scheme including metering positions (Coal Mine #22 "Kommunarskaya")

/113/ Installation scheme including metering positions (Coal Mine #22 "Zuevskaya")

/114/ Data on power consumption by Coal Mine "Kommunarskaya" boilers

/115/ Data on power consumption by Coal Mine "Kommunarskaya" flares

/116/ List of power (produced by MGVA-5MW unit, serial #1192) consumers

/117/ Kuhse Powerful Solutions Data Publisher TeleControl Client description

/118/ Statement on acceptance-transmitting of flare unit CGUU-5/8, serial #1423, and container heat and power station NC620K16, serial #143901

/119/ Statement dated 08/08/2010 on commissioning of methane utilization unit CGUU, serial #1256

/120/ Statement dated 05/11/2010 on pre-commissioning CGUU-5/8 unit, serial #143901

/121/ Statement dated 12/06/2010 on commissioning of methane utilization unit ERU ACS #4

/122/ Statement dated 15/12/2010 on commissioning of methane utilization unit ERU ACS #5

/123/ Operational chart on water heating boiler #1 type E-1/9 at boiler house #1 of Coal Mine #22 "Kommunarskaya"

/124/ Operational chart dated 03/12/2009 on heat generator VAH 1.0 #1 type E-1/9 at VAH of Coal Mine #22 "Kommunarskaya"

/125/ Accreditation certificate dated 01/12/2009, registration #2H555, valid till 30/11/2012, issued by the National Accreditation Agency of Ukraine

/126/ Environmental impact assessment of the Transition of E 1/9 5 Boilers from Coal Fuel to Degassing Gas at Coal Mine #22 "Kommunarskaya" work project

/127/ Expert opinion #232.09.00.232.09 dated 02/12/2009, issued by State Makiivka Scientific Research Institute on Safety in Mines of Makiivka

/128/ Information on Data Acquisition and Visualization Device (DAVID), description of the device

/129/ Information on Kuhse Data Publisher system

/130/ Statement dated 13/05/2011 on data collection and storage provided by Pro2 Anlagentechnik GmbH

Persons interviewed:
List of persons interviewed during the verification or persons that contributed with other information that are not included in the documents listed above.

/1/ Viktor Orlov – Chief Engineer of the SOJSC "Shakhtoupravlenye Donbass"
/2/ Mykola Shliakhta – Coal Mine #22 "Kommunarskaya" Chief Engineer
/3/ Tetiana Balashova – Mining Works Lead Engineer of the Coal Mine #22 "Kommunarskaya"
/4/ Andriy Zherdyev – coal mine Senior Power Engineer of the Coal Mine #22 "Kommunarskaya"
/5/ Mark Synhayevskiy – degassing department Head of the Coal Mine #22 "Kommunarskaya"
/6/ Victor Vasylevych – Heating Engineer of the Coal Mine #22 "Kommunarskaya"
/7/ Vitaliy Sobolyev – ventilation department Head of the Coal Mine #22 "Kommunarskaya"
/8/ Volodymyr Kasyanov– Managing Director of LLC "Eco-Aliance"
/9/ Pavlo Shelegeda – Deputy Director of LLC "Eco-Aliance"
/10/ Victor Avtonomov– JI Project Manager of LLC "Eco-Aliance"
/11/ Oleksandr Didenko – Head of maintenance department of LLC "Eco-Aliance"
/12/ Karl Wöste – Senior Consultant of Carbon-TF B.V.
/13/ Achim Wörsdörfer – Managing Director of A-TEC Anlagentechnik GmbH

APPENDIX A: PROJECT VERIFICATION PROTOCOL

BUREAU VERITAS CERTIFICATION HOLDING SAS

VERIFICATION PROTOCOL

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

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
Project approvals by Parties involved				
90	Has the DFPs of at least one Party involved, other than the host Party, issued a written project approval when submitting the first verification report to the secretariat for publication in accordance with paragraph 38 of the JI guidelines, at the latest?	The project has been approved by both the host Party (Ukraine) and the other Party involved (the Netherlands). The written project approvals were issued by DFPs of Parties involved (see chapter 7 References in the verification report); the respective Letters of Approval were available at the beginning of 1st verification of the project.	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 not been implemented as planned in the PDD. There were changes to project design that occurred after the determination had been deemed final. Firstly, there was a delay in implementation of all project units because of lacking fund due to the global	CAR 01 CL 01	OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		financial crisis. Next, instead of two new boilers with capacity of 3,150 MW each (total capacity of 6,3 MW) as envisaged in the PDD, five upgraded smaller boilers with total capacity of 5,835 MW (1,167 MW per unit) were installed. Also, the flaring capacity of the flare No.1 was changed from 5 MW in the PDD to 10 MW: the flare has been modified to reach an extended capacity of up to 10 MW for higher gas utilization. As to the ventilation air heater, instead of the installation of tree identical modules as described in the PDD, two bigger modules with capacity of 1 MW and one smaller module with 0,75 MW capacity have been installed. The installation of the second cogeneration unit, originally planned for January 2009, is still pending. Additionally to planned project units, two further flares have been installed: flare No.2 with capacity of 8 MW and flare No.3 of 10 MW capacity. The flare No.2 was originally installed at the Molodogvardeyskaya in August 2007, and then moved to the coal mine Krasnoarmeyskaya-Zapadnaya No.1 in July 2008, although was not put in operation there. In summer 2010 this flare was installed by Eco-Alliance at the Coal Mine No.22 Kommunarskaya. The flare No.3 has been originally installed at the coal mine Shcheglovskaya-Glubokaya also owned by SOJSC “Shakhtoupravlenye Donbass“ but due to the lacking gas amount there the flare was moved to the coal mine Nr.22 “Kommunarskaya».		

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		In respect of the emission reductions achieved, they are lower than those planned in the PDD; however, this deviation was not explained in the MR ver.1: **CAR 01**. Please, provide comparison of the planned in the PDD and actually achieved values of emission reductions, and explain a deviation. Because of the project design change the clarification is needed concerning project's additionality: **CL 01.** Due to the fact that there were changes to project implementation since the last verification, please, show the significance of the deviations on the additionality of the project.		
93	What is the status of operation of the project during the monitoring period?	There was delay in project implementation as scheduled in the PDD caused by lacking funds due to the global financial crisis. During the given monitoring period 5 upgraded gas-fired boilers, ventilation air heater, cogeneration unit No.1, flare No.1 and two additional flares No.2 and No.3 (both installed in course of this monitoring period) were operational. The flare No.1 has been in operation since December 2008; the installation of all boilers and ventilation air heater was finished in October 2009; the cogeneration unit No.1 started its operation in January 2010. The installation of the cogeneration unit No.2 is	CAR 02 CAR 03 CAR 04 CAR 05 CAR 06 CL 02	OK OK OK OK OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		delayed and has been rescheduled for spring 2011. The inconsistency is observed as to the flares (1, 2 and 3) operation start date in the MR: –flare Nr. 1: in the section A.6 start of operation is on 20/12/2009 while in the A.7 it is 10/2008; – flare Nr. 2: in A.6 it is 20/12/2010 and in A.7 – 10/08/2010; – flare Nr. 3: 29/12/2010 in the section A.6 Vs. 29/10/2010 in A.7 and Annex 4. **CAR 02**. Please, provide correct flares operation start date and confirm these with respective documents. Also, the MR ver.1 contains incongruent information on flare No.2 capacity: **CAR 03.** Different capacity of the flare No. 2 is indicated in the MR: 10 MW (section A.6) and 8 MW (section A.7). Please, make the information consistent. There is inconsistency in the reported documents regarding power amount produced by the cogeneration unit No.1: **CAR 04**. The amount of power generated by the cogeneration unit which is indicated in the Table-2 of the MR does not correspond to the respective value indicated in the emission reduction calculation Excel spreadsheet. Please, make the information consistent. Additionally, some other modifications concerning		

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		project implementation and electronic monitoring system installation must be made to the MR: **CAR 05.** Not all deviations to the PDD are described in the section A.7. Please, supplement the section with description of other changes to project implementation and give a reference to the Annex 4 where all deviations are listed. Also, please, state if all conditions mentioned in the *Procedures Regarding Changes During Project Implementation, Version 1*, are still met by the project. **CAR 06.** The information on electronic monitoring system for boilers and ventilation air heater is contradictory in the MR section A.9 and Annex 4. Please, clearly state when the electronic monitoring systems has been installed and started its operation. Documentation/records confirming this should be provided. As PDD envisaged the installation of cogeneration unit for combined heat and power generation, the clarification is needed: **CL 02.** Please, clarify whether the installed cogeneration unit produced heat during the considered monitoring period and how this was accounted in emission reduction calculation.		
Compliance with monitoring plan				
94	Did the monitoring occur in accordance	The monitoring occurred in accordance with the PDD	CAR 07	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	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?	regarding which the determination has been deemed final with some changes presented in the revised monitoring plan (for further information refer to cl.99 (a) – 99 (b) of this check-list). Due to the fact that monitoring plan was revised, the project monitoring as well as GHG emission reduction calculation must be performed according to the Revised Monitoring Plan (refer to CARs regarding determination of the Revised Monitoring Plan), however there are some deviations from the revised monitoring plan in the MR ver.1, therefore the CAR is raised: **CAR 07.** Please, make the MR consistent with the final version of the revised monitoring plan. Where applicable, reference to that plan must be provided rather than to the PDD.		
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, such as availability and amount of extracted coal gas, concentration of methane in the extracted gas, heat demand at the coal mine etc, influencing the baseline emissions and the activity level of the project and the emissions as well as risks associated with the project were taken into account for calculating the emission reductions.	OK	OK
95 (b)	Are data sources used for calculating	All the data sources used for calculating emission	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	emission reductions or enhancements of net removals clearly identified, reliable and transparent?	reductions are clearly identified, reliable and transparent. They are listed in the revised monitoring plan and MR sections B.1.2, B.2.1, B.2.2. The data sources used in the present monitoring period include: - direct measurement of the CMM amount sent to the power plant, to heat generation and flaring; heat and power generation by the project; methane concentration in the extracted gas, flare flame temperature etc. performed with appropriate calibrated measurement equipment (flow meter, pressure transmitter, electric power meter, resistance thermometer etc.); - laboratory analysis of NMHC concentration in the extracted gas; - IPCC data for efficiency of methane destruction/oxidation in the power and heat plants, carbon emission factor for combusted methane, methane GWP, emission factor for fuel (coal) used for captive power or heat; - national officially approved Orders on Ukrainian power grid emission factors; - international standard (DIN EN ISO 6976) for methane heating value; - equipment specifications (passport, boiler and VAH technical reports etc.) for energy efficiency of coal fired heat plant and VAH, flare combustion efficiency etc.		
95 (c)	Are emission factors, including default emission factors, if used for calculating	Emission factors applied in calculation of the emission reduction for this monitoring period, such as carbon	CAR 08	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	the emission reductions or enhancements of net removals, selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice?	emission factor for combusted methane, CO_2 emission factor of fuel used for captive power or heat and carbon emission factor for power grid, are selected by carefully balancing accuracy and reasonableness, and are appropriately justified of the choice. First two factors were taken from IPCC Guidelines. As to the electricity grid emission factor, the SenterNovem (ERUPT) data are used for ERU calculations in the MR ver.1. However, the revised monitoring plan and determined PDD imply that "should a new officially approved standardized baseline for Ukraine be adopted, the baseline carbon emission factor will be changed accordingly". Such national factor for Ukrainian power grid has been adopted in March 2011, therefore it should be applied. **CAR 08.** The electricity emission factor for 2010 officially approved for Ukraine (Order № 43 on approval of specific CO2 emissions in 2010 of 28/03/2011 issued by National Environmental Investment Agency of Ukraine, http://www.neia.gov.ua/nature/doccatalog/document?id=126006) must be used for ERUs calculation in 2010.		
95 (d)	Is the calculation of emission reductions or enhancements of net removals based on conservative assumptions and the most plausible scenarios in a transparent manner?	The performed calculation of emission reductions is based on conservative assumptions and the most plausible scenarios in a transparent manner. The continuation of situation exciting before project implementation, namely venting of the CMM into the	CAR 09 CAR 10 CAR 11 CAR 12 CL 03	OK OK OK OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		atmosphere, heat generation with the existing coal fired boilers, and the full purchase of electricity from the grid, was proven in the determined PDD to be the most plausible scenario. The results of emission reduction calculation are presented in the MR as a totals for 9 months of 2010 and 2,5 months of 2011, although they should be provided by emission sources; thus, the CAR was issued: **CAR 09.** In the MR, please, provide calculation of project and baseline emissions and emission reduction by sources. Also, the total value of baseline emissions does not correspond to the respective values for 2010 (01.04.2010-31.12.2010) and 2011 (01.01.2011-15.03.2011) in the MR. Apparently, this occurs due to rounding of values in the Excel spreadsheets, still the values for 2 periods and sum for the whole period must be arithmetically consistent: **CAR 10.** In the MR the totals of baseline emissions are not consistent with relevant values for 2 sub-periods. Please, correct. Some inconsistencies were observed in the ERU calculation Excel spreadsheet as well; the relevant		

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		CARs have been issued: **CAR 11.** Please, correct the following discrepancies identified as to the ERU calculation Excel spreadsheets: – Total 2011 values of the parameters P14, P15 and P17 do not include data for 1 – 15 March 2011. This must be corrected. – For total 2011 emission reduction (ER) the Excel function "roundup" is used which is not conservative, as no rounding applies to project and baseline emissions. Please, replace it simple sum of monthly values as for all other parameters. **CAR 12.** The values of baseline emission and emission reductions for 01/01/2011-15/03/2011 stated in the MR do not correspond to the respective values indicated in the Excel spreadsheets. Please, recheck the calculations and make data consistent. The PDD states that the electric power consumption by the flare unit, upgraded boiler and ventilation air heater is negligible and is not taken into account. Due to the changes to project implementation the clarification on electricity consumption by the project is needed: **CL 03.** Please, explain why the reported amount of electricity consumed by the project is zero.		

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		In respect of this clarification is needed: - for boilers: PDD and revised monitoring plan envisage that the upgraded CMM fired boilers needs less electric power than the old coal fired boilers, thus provide the detailed justification that this is still applicable to the project taking into account changes to project design (5 boilers were installed instead of 2). The justification must be supported with appropriate calculations/estimations. - for flares: Considering the fact that 3 flares instead of 1 were installed, please, clarify why electricity consumed by flare units is not accounted. - for cogeneration unit: The PDD indicated that the cogeneration unit needs additional power especially for the cooling fans and this has to be taken into account. However, electricity consumption by cogeneration unit is not taken into account in project emission calculation for considered monitoring period. Moreover, no information regarding this is available in the revised monitoring plan (see pg.9, D.1.1.2). Please, provide actual values/calculations to support the assumption made.		
Applicable to JI SSC projects only				
96	Is the relevant threshold to be classified as JI SSC project not exceeded during	N/a	N/a	N/a

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	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?			
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				
99 (a)	Did the project participants provide an appropriate justification for the proposed revision?	In the course of the present monitoring period the original monitoring plan described in the registered PDD version 06 was modified by the project	CAR 13 CAR 14 CAR 15	OK OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		participants. The project participants submitted for determination the Revised Monitoring Plan ver.1 of 10/03/2011, which was reviewed by the verification team and the following issues were raised: **CAR 13**. In the Revised Monitoring Plan, please, list all the revisions and changes compared to the original monitoring plan, provide the justification of all proposed revisions to the monitoring plan and confirm whether 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 monitoring plans (see CARs below): **CAR 14.** The revised monitoring plan should provide for monitoring of the CMM utilization in ventilation air heater; however no information is available on monitoring of methane sent to VAH. It is not clearly indicated if the efficiency of methane destruction in heat plant applies to VAH. As to the methane destroyed by VAH ($MD_{HEAT, VAH}$) is it not clear how it is determined because the reference to D.1.1.4 given in D.1.1.1 is irrelevant as no formula for $MD_{HEAT,VAH}$ calculation is available there. Data source for the parameter B47 in D.1.1.3 implies boilers only where heat meters are used and does not imply VAH where heat amount is calculated. Please, make it clear in	CAR 16 CAR 17 CAR 18 CAR 19 CAR 20 CAR 21 CAR 22 CAR 23 CAR 24 CAR 25 CAR 26 CL 04 CL 05 CL 06 CL 07	OK OK OK OK OK OK OK OK OK OK OK OK OK OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		monitoring plan how the VAH related data are monitored. **CAR 15.** In the section D.1.1.2 of the revised monitoring plan the provided assumption as to the additional electricity consumed by the project takes into account not all project units (cogeneration plant and VAH were not considered). This is also different from the PDD. Please, revise the information. **CAR 16.** The methods of determination of heat generation efficiency for ventilation air heater and methane heating value are indicated incorrectly in the table D.1.1.1 of the revised monitoring plan (these are taken from VAH passport and standard respectively, thus estimated but not measured). **CAR 17.** In the revised monitoring plan QA & QC procedures for heat production are presented in respect of measurement equipment installed. However, the heat generated by ventilation air heater (VAH) is not measured but calculated. In this regard, please, provide QA/QC procedure for heat produced by VAH. **CAR 18.** The parameters $Eff_{HEAT,\ VAH}$ and HV_{CH4} are used for determination of baseline, thus should be described in the table D.1.1.3 but not D.1.1.1.		

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		CAR 19. In the section D.1 of the Revised Monitoring Plan the incorrect data is provided as to the applied combustion efficiency for the temperature below 500 C. Please, correct. **CAR 20.** Regarding QC & QA Procedures described in the section D.2 of the Revised Monitoring Plan some deviations from PDD were identified which are not listed as a revision, namely the calibration intervals for power consumption (P5) and power production (B46) in the Revised Monitoring Plan differs from the calibration interval in the PDD (1 year vs. 2 years in the PDD). Moreover, the actual calibration frequency is 6 years. Please, make proper corrections and describe this change in the relevant section of the Revised MP. **CAR 21**. In the Revised Monitoring Plan some deviations from the PDD concerning operational and management structure of the project (D.3) were identified which are not listed as revisions and justified appropriately: – Eco-Alliance instead of plant manager in the PDD is identified as responsible for data base administration, verification of data, checkups for plausibility and errors etc; – Instead of SU “Donbass” in the PDD Eco Alliance is indicated as project manager (pg.21);		

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		– Eco Alliance also took over the responsibilities for the service and maintenance of the cogeneration units instead of Pro2 Anlagentechnik GmbH and the personnel of the Ukrainian corporate group Ukrrosmetall JSC (pg. 21); – Carbon-TF B.V. is envolved in monitoring instead of Emissions-Trader ET GmbH; – Project management structure presented on the figure D-1 was revised; new roles and responsibilities added. All these and any other changes must be described and appropriately justified (see CAR 13). **CAR 22.** For the formula (25) in the revised monitoring plan no interpretation is given for HV_{CH4} parameter. Please, add the information under the formula. Additionally, in the ERUs calculation Excel spreadsheet the methane amount sent to VAH is used in this formula rather than methane destroyed for heat generation by VAH. Please clarify/correct this. **CAR 23**. In the Revised Monitoring Plan the project monitoring parameters PE, PE_{ME}, PE_{MD}, PE_{UM} and baseline parameters BE, BE_{MR}, BE_{Use} have different recording frequency while it should be consistent for all of this parameters. Please, correct.		

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		CAR 24. In the revised monitoring plan it is indicated that the methane amount destroyed by flaring (P11) is recorded monthly, however from the formula (5) it is evident that this parameter is determined with 15 min interval. Please, correct/clarify. **CAR 25.** In the sections D.1.1.1 and D.1.1.3 of the Revised Monitoring Plan (column "Comment") for calculated parameters, please, provide references to the exact formulas used for calculation of those parameters. **CAR 26.** The data units must be indicated in the section D.1.1.1 of the Revised monitoring plan for parameters P16, P19, P23, P24, P28. **CL 04.** Please, provide clarification on method used for determination of power production by cogeneration unit (IDs 14 and 14a, two devices). If the value of electricity generated is measured by Actaric SL-7000, for what purpose Deif PPU meter is used. **CL 05.** Please, provide justification of the value of heat plant energy efficiency (B57) of 91%. As this parameter applies to all heat generation units in baseline, please, clarify whether this parameter implies the efficiency of old coal boilers only or whether it takes into account the efficiency of former heat generation unit replaced by		

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		the VAH too, and provide justification of this. In the MR the value of B57 applied in the calculation must be stated and it must be consistent with the revised monitoring plan. **CL 06.** Please, provide a VAH passport in order to confirm the value of efficiency of the heat generating by the VAH which is 98,5%. **CL 07.** Please, provide more detailed information on determination of parameters CMM amount to flares, cogeneration plant, boilers, VAH (ID 3, 9, 15, 22, 29, 40).		
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?	The proposed changes presented in the revised monitoring plan improve accuracy and applicability of the collected information compared to the original monitoring plan in the PDD. The conformity with the relevant rules and regulations for the establishment of the monitoring plans remains unchanged as well as the conservativeness of the approach to the emission reductions calculations. Although, some issues related to the revised monitoring plan were identified. See 99 (a) above.	OK	OK
Data management				
101 (a)	Is the implementation of data collection procedures in accordance with the	The implementation of data collection procedures is in accordance with the PDD and revised monitoring plan,	CL 08 CL 09	OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	monitoring plan, including the quality control and quality assurance procedures?	including the quality control and quality assurance procedures. In respect of the QA/QC procedures for NMHC analysis, the accreditation status of the respective laboratory during the whole monitoring period should be proved: **CL 08**. Please, submit the accreditation certification of the laboratory which undertakes the NMHC analysis of the captured gas. Note, that lab's accreditation validity during the whole monitoring period must be confirmed. The data on CMM flow to the cogeneration unit are recorded by a DAVID System (Data acquisition and visualisation device) developed by the Fraunhofer Institute UMSICHT. Further clarification on the DAVID system is needed, thus CL has been raised: **CL 09.** Please, provide documentation on DAVID data acquisition and visualization system and documentation confirming the responsibility of server provider for data securing and system proper functioning. During the previous 1st periodic verification performed by AIE TUV SUD two FARs were issued: FAR 1: Please provide till the next verification a Monitoring Manual including the Quality	CL 10	FAR 04 has been issued. The FAR will be checked at next verification

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		Management/QM procedures); FAR 2: A project permission issued by the Ukrainian environmental authority has to be presented to the verifier at the next verification date. In order to clarify how both issues have been addressed the CL was raised by BVC verification team: **CL 10**. Please, present responses and the corresponding documentation to FAR 1 and FAR 2 issued during the previous 1st periodic verification.		
101 (b)	Is the function of the monitoring equipment, including its calibration status, in order?	The measurement equipment used for project monitoring is serviced, calibrated and maintained in accordance with the original manufacturer's instructions and industry standards. Still, some issues as to the used monitoring equipment which need to be corrected or clarified were indentified: **CAR 27**. Calibration frequency of some measuring equipment is not indicated (section B.1.2, Table-5 of the MR). Please, provide information on calibration frequency for all equipment used in project monitoring. **CAR 28**. In the list of monitoring equipment for each gauge/parameter it should be clearly indicated where it is installed, i.e., data for which unit (flare, boiler etc.) is measured by each particular meter. **CAR 29.** Please, provide a serial number for monitoring	CAR 27 CAR 28 CAR 29 CAR 30 CAR 31 CL 11	OK OK FAR 03 has been raised. The FAR is to be checked during next verification OK OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		equipment with ID 30 (standard orifice). **CAR 30.** Please, indicate the last calibration date for monitoring equipment with ID 31, ID 42, ID 43. **CAR 31.** In the MR there is a confusion with the serial numbers of resistance thermometers installed at flare 1 and flare 2 (ID 7 and ID 26 respectively), as during site visit is was observed that the resistance thermometer 98026/2 is installed at flare 1 and 4571 at flare 2. Please, make corrections. **CL 11**. For methane concentration infrared measurement (ID 1, 20, 27), please, clarify the frequency of the regular calibrations made by Eco-Alliance and indicate this in the MR.		
101 (c)	Are the evidence and records used for the monitoring maintained in a traceable manner?	All necessary information for monitoring of GHGs emission reductions are stored in paper or/and electronic formats. In the section C.1.1 of the MR it is stated that the overview calculation about the methane amount utilized are made on a monthly and yearly basis and notified in the journal, however, during site visit it was revealed that no such journal is available. **CL 12**. Please, correct/clarify the information about the journal where emission reduction calculation results are notified and specify who performs such overview	CL 12 FAR 01 FAR 02	OK FAR 01 and FAR 02 will be closed during next verification.

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		calculations. The interviews conducted during site visit demonstrated that monitoring records storage time is not clearly established and known by all responsible personnel. So, the FAR was issued: **FAR 01**. A documented instruction/decree prescribing the storage of data monitored and required for ERUs calculation for two years after the last transfer of ERUs for the project should be issued and communicated to all responsible persons. Also, not all calibration certificates for those meters which were replaced during monitoring period were available. Thus, the FAR was raised: **FAR 02.** The evidences (e.g., calibration certificates) of the due calibration status of all meters used in the project monitoring during the whole monitoring period (including those which were replaced in course of the monitoring period) must be kept and made available upon request; the records confirming the meters replacement, if applicable, are to be maintained as well.		
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 is in accordance with the PDD and revised monitoring plan. The verification team confirms effectiveness of the existing management and operational systems and found them eligible for reliable	CL 13	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		project monitoring. The MR indicates that the company Kuhse GmbH is involved in the data recording, however, this organization is not mentioned in revised monitoring plan: **CL 13**. Please, provide more detailed information regarding Kuhse GmbH and its responsibilities is the project monitoring. Also, please, provide documentation confirming its legally binding obligations in project monitoring (e.g., contracts, agreement etc.).		
Verification regarding programs of activities (additional elements for assessment)				
102	Is any JPA that has not been added to the JI PoA not verified?	N/a	N/a	N/a
103	Is the verification based on the monitoring reports of all JPAs to be verified?	N/a	N/a	N/a
103	Does the verification ensure the accuracy and conservativeness of the emission reductions or enhancements of removals generated by each JPA?	N/a	N/a	N/a
104	Does the monitoring period not overlap with previous monitoring periods?	N/a	N/a	N/a
105	If the AIE learns of an erroneously included JPA, has the AIE informed the JISC of its findings in writing?	N/a	N/a	N/a
Applicable to sample-based approach only				
106	Does the sampling plan prepared by the	N/a	N/a	N/a

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	AIE: (a) Describe its sample selection, taking into account that: (i) For each verification that uses a sample-based approach, the sample selection shall be sufficiently representative of the JPAs in the JI PoA such extrapolation to all JPAs identified for that verification is reasonable, taking into account differences among the characteristics of JPAs, such as: − The types of JPAs; − The complexity of the applicable technologies and/or measures used; − The geographical location of each JPA; − The amounts of expected emission reductions of the JPAs being verified; − The number of JPAs for which emission reductions are being verified; − The length of monitoring periods of the JPAs being verified; and − The samples selected for prior verifications, if any?			
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

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
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 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 verification team	Ref. to checklist question in table 1	Summary of project participant response	Verification team conclusion
CAR 01. Please, provide comparison of the planned in the PDD and actually achieved values of emission reductions, and explain a deviation.	92	The MR has been extended.	The comparison of expected and achieved emission reductions has been provided in the MR. The calculated percentage of achievement compared to the PDD for is 97,4% the period of 01/04/2010-15/03/2011. The issue is closed.

CAR 02. Please, provide correct flares operation start date and confirm these with respective documents.	93	*Response #1:* MR has been corrected. Acceptance acts are attached: Kom22-1 - Acceptance protocol-F1+M1.pdf Kom22-2 - Acceptance protocol-F2.pdf Kom22-3 - Acceptance protocol-F3.pdf *Response #2:* 1) 1423 is the correct commission number. 142301 is the equivalent visible part number of the flare container. The manufacturer Pro2 Anlagentechnik GmbH uses a four digit number as main commission number and a two digit add on ID for the identification of multiple parts of the same commission. In this case the commission exists only of one part, so only the ID-01 is existing (142301 for the flare container). If there would be a second part, e.g. a second container with a gas cleaning system, a second number 142302 would be available, belonging to the same commission 1423.	*Conclusion on response #1:* 1) The serial number of the flare Nr.1 indicated in the MR is not consistent with the flare commissioning statement. Please, correct/clarify. 2) According to the provided commissioning statement the flare Nr.2 operation start date is 08/08/2010. The MR was modified appropriately. 3) The date of the flare Nr.3 operation start indicated in the Annex 4 of the MR does not correspond to the flare commissioning statement [05/11/2010 in the commissioning statement vs. 29/10/2010 in the Annex 4].

		3) The MR has been corrected. 4) The cogeneration was installed at 18/12/2008 but due to problems with a broken part first power production started at 29/01/2009.	4) The provided commissioning statement indicates the cogeneration unit operation start as 18/12/2008, however, in the MR 29/01/2009 is stated. Please, correct/clarify. *Final conclusion:* The clarification and corrections made have been accepted. The issue is closed.
CAR 03. Different capacity of the flare No. 2 is indicated in the MR: 10 MW (section A.6) and 8 MW (section A.7). Please, make the information consistent.	93	Changes have been made in MR.	The issue is closed based on the correction made.
CAR 04. The amount of power generated by the cogeneration unit which is indicated in the Table-2 of the MR does not correspond to the respective value indicated in the emission reduction calculation Excel spreadsheet. Please, make the information consistent.	93	The MR has been corrected. A new version of the ER-Table has been provided.	The information on generated power amount is now consistent in the MR and Excel spreadsheet. The issue is closed.

CAR 05. Not all deviations to the PDD are described in the section A.7. Please, supplement the section with description of other changes to project implementation and give a reference to the Annex 4 where all deviations are listed. Also, please, state if all conditions mentioned in the *Procedures Regarding Changes During Project Implementation, Version 1*, are still met by the project.	93	The MR has been extended.	The issue is closed based on corrections made.
CAR 06. The information on electronic monitoring system for boilers and ventilation air heater is contradictory in the MR section A.9 and Annex 4. Please, clearly state when the electronic monitoring systems has been installed and started its operation. Documentation/records confirming this should be provided.	93	Changes have been made in MR. Supporting documents are attached: Kom22-4 - Акт ввода САУЕСВ_котельная.pdf Kom22-5 - Акт ввода САУЕСВ_ВНС.pdf	The Statements of electronic automated monitoring system commissioning in boiler house (12/06/2010) and VAH (15/12/2010) were submitted. The MR has been corrected appropriately. The issue is closed.

CAR 07. Please, make the MR consistent with the final version of the revised monitoring plan. Where applicable, reference to that plan must be provided rather than to the PDD.	94	The MR and Revised MP have been corrected.	The MR is now consistent with the revised MP. The issue is closed based on due amendments made.

CAR 08. The electricity emission factor for 2010 officially approved for Ukraine (Order № 43 on approval of specific CO2 emissions in 2010 of 28/03/2011 issued by National Environmental Investment Agency of Ukraine, http://www.neia.gov.ua/nature/doccatalog/document?id=126006) must be used for ERUs calculation in 2010.	95 (c)	*Response #1:* The new CEF-Value of 1.067 tCO2eq/MWh has been taken into account. The MR, Revised MP and ER-Table gas been changed. The calculated values of displaced power production and ERU amount have risen. *Response #2:* The new CEF-Value of 1.063 tCO2eq/MWh has been taken into account for 2011. The MR, Revised MP and ER-Table have been changed. The calculated values of displaced power production and ERU amount have changed.	*Conclusion on response #1:* Please, take into account that on 13th May 2011 the national electricity emission factor for 2011 was adopted by the Order #75 of National Environmental Investment Agency of Ukraine (*http://www.neia.gov.ua/nature/doccatalog/document?id=127498*). According to the project's revised monitoring plan the new emission factor must be used for ERUs calculation in 2011. *Final conclusion:* All project monitoring reporting documentation (MR, Revised MP, Excel spreadsheets) were appropriately modified. The issue is closed.
CAR 09. In the MR, please, provide calculation of project and baseline emissions and emission reduction by sources.	95 (d)	The MR has been extended.	The baseline and project emissions are presented by sources in the MR. The issue is closed.

CAR 10. In the MR the totals of baseline emissions are not consistent with relevant values for 2 sub-periods. Please, correct.	95 (d)	The MR has been corrected.	The issue is closed based on due corrections made.
CAR 11. Please, correct the following discrepancies identified as to the ERU calculation Excel spreadsheets: - Total 2011 values of the parameters P14, P15 and P17 do not include data for 1 – 15 March 2011. This must be corrected. - For total 2011 emission reduction (ER) the Excel function "roundup" is used which is not conservative, as no rounding applies to project and baseline emissions. Please, replace it simple sum of monthly values as for all other parameters.	95 (d)	*Response #1*: The ER-table has been corrected. *Response #2:* The Excel sheet has been corrected	*Conclusion on response #1:* In the Excel spreadsheet formulas used for calculation of project emission and parameter PE_{MD} do not correspond to the revised MP. Please, make calculations consistent with the revised MP. *Final conclusion:* The ERU calculation Excel spreadsheet has been modified appropriately. The CAR is closed.

CAR 12. The values of baseline emission and emission reductions for 01/01/2011-15/03/2011 stated in the MR do not correspond to the respective values indicated in the Excel spreadsheets. Please, recheck the calculations and make data consistent.	95 (d)	The MR has been corrected. A new version of the ER-Table has been provided.	The issue is closed based on appropriate corrections made to the MR.
CAR 13. In the Revised Monitoring, please, list all the revisions and changes compared to the original monitoring plan, provide the justification of all proposed revisions to the monitoring plan and confirm whether 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 monitoring plans (see CARs below).	99 (a)	*Response #1:* The Revised MP has been corrected. *Response #2:* The Revised MP has been extended.	*Conclusion on response #1:* The value of efficiency of heat production in VAH (Eff_{VAH}) is not consistent in the revised MP and Excel spreadsheets (98.5% in the revised MP, formula 26 (pg.18) vs. 74,2% in the revised MP's section D.1.1.3 (pg.14) and Excel file). Please, make the value of parameter consistent. *Final conclusion:* The issue is closed based on due amendments made to the revised MP.

CAR 14. The revised monitoring plan should provide for monitoring of the CMM utilization in ventilation air heater; however no information is available on monitoring of methane sent to VAH. It is not clearly indicated if the efficiency of methane destruction in heat plant applies to VAH. As to the methane destroyed by VAH ($MD_{HEAT, VAH}$) is it not clear how it is determined because the reference to D.1.1.4 given in D.1.1.1 is irrelevant as no formula for $MD_{HEAT, VAH}$ calculation is available there. Data source for the parameter B47 in D.1.1.3 implies boilers only where heat meters are used and does not imply VAH where heat amount is calculated. Please, make it clear in monitoring plan how the VAH related data are monitored.	99 (a)	*Response #1:* The Revised MP has been corrected. *Response #2:* The parameter is now consistent.	*Conclusion on response #1:* The value of efficiency of heat production in VAH (Eff_{VAH}) is not consistent in the revised MP and Excel spreadsheets (98.5% in the revised MP, formula 26 (pg.18) vs. 74,2% in the revised MP's section D.1.1.3 (pg.14) and Excel file). Please, make the value of parameter consistent. *Final conclusion:* The correct value of VAH heat production efficiency is 74,2% which is confirmed by the VAH technical report. Due correction were made to the MR. The issue is closed.

CAR 15. In the section D.1.1.2 of the revised monitoring plan the provided assumption as to the additional electricity consumed by the project takes into account not all project units (cogeneration plant and VAH were not considered). This is also different from the PDD. Please, revise the information.	99 (a)	*Response #1:* The Revised MP has been corrected. *Response #2:* The Revised MP has been corrected. The information about combined flares / gas pumps which should be placed on degassing wells was misplaced and has been removed.	*Conclusion on response #1:* The clarification regarding additional electricity consumption by the VAH is still absent; please, add it. There is information about combined flares / gas pumps which will be placed on degassing wells in the section D.1.1.2, however no such equipment is envisaged in the project. Please correct/clarify. *Final conclusion:* The issue is closed based on the appropriate amendments made to the revised monitoring plan.

CAR 16. The methods of determination of heat generation efficiency for ventilation air heater and methane heating value are indicated incorrectly in the table D.1.1.1 of the revised monitoring plan (these are taken from VAH passport and standard respectively, thus estimated but not measured).	99 (a)	*Response #1:* The Revised MP has been corrected. *Response #2:* The required corrections were made.	*Conclusion on response #1:* Please, correct the method of Eff_{VAH} and HV_{CH4} parameters' determination. *Final conclusion:* The appropriate correction has been made to the revised MP. The issue is closed.
CAR 17. In the revised monitoring plan QA & QC procedures for heat production are presented in respect of measurement equipment installed. However, the heat generated by ventilation air heater (VAH) is not measured but calculated. In this regard, please, provide QA/QC procedure for heat produced by VAH.	99 (a)	The Revised MP has been extended.	The QA/QC procedures for heat generated by VAH were added to the section D.2 of the revised MP. The CAR is closed.

CAR 18. The parameters $Eff_{HEAT, VAH}$ and HV_{CH4} are used for determination of baseline, thus should be described in the table D.1.1.3 but not D.1.1.1.	99 (a)	The Revised MP has been corrected.	The revised monitoring plan was modified appropriately. The issue is closed.
CAR 19. In the section D.1 of the Revised Monitoring Plan the incorrect data is provided as to the applied combustion efficiency for the temperature below 500 C. Please, correct.	99 (a)	The Revised MP has been corrected.	The correction has been made as required. The issue is closed.

CAR 20. Regarding QC & QA Procedures described in the section D.2 of the Revised Monitoring Plan some deviations from PDD were identified which are not listed as revisions, namely the calibration intervals for power consumption (P5) and power production (B46) in the Revised Monitoring Plan differs from the calibration interval in the PDD (1 year Vs. 2 years in the PDD). Moreover, the actual calibration frequency is 6 years. Please, make proper corrections and describe this change in the relevant section of the Revised MP.	99 (a)	*Response #1:* The Revised MP has been corrected. *Response #2:* The Revised MP has been extended.	*Conclusion on response #1*: The change of power meters' calibration frequency from 2 to 6 years must be described as a modification to the original MP in the Annex 3 of the revised MP. *Final conclusion:* The deviation regarding power meters' calibration interval has been listed and justified in the revised MP. The issue is closed.

CAR 21. In the Revised Monitoring Plan some deviations from the PDD concerning operational and management structure of the project (D.3) were identified which are not listed as revisions and justified appropriately: – Eco-Alliance instead of plant manager in the PDD is identified as responsible for data base administration, verification of data, checkups for plausibility and errors etc; – Instead of SU “Donbass” in the PDD Eco Alliance is indicated as project manager (pg.21);	99 (a)	The Revised MP has been corrected.	The change in project monitoring responsibilities has been reflected in the revised MP as required. The CAR is closed based on due modifications made to the revised MP.

– Eco Alliance also took over the responsibilities for the service and maintenance of the cogeneration units instead of Pro2 Anlagentechnik GmbH and the personnel of the Ukrainian corporate group Ukrrosmetall JSC (pg. 21); – Carbon-TF B.V. is envolved in monitoring instead of Emissions-Trader ET GmbH; – Project management structure presented on the figure D-1 was revised; new roles and responsibilities added. All these and any other changes must be described and appropriately justified (see CAR 13).			

CAR 22. For the formula (25) in the revised monitoring plan no interpretation is given for HV_{CH4} parameter. Please, add the information under the formula. Additionally, in the ERUs calculation Excel spreadsheet the methane amount sent to VAH is used in this formula rather than methane destroyed for heat generation by VAH. Please clarify/correct this.	99 (a)	The Revised MP has been revised. The ER-Table has been corrected.	The required modifications have been made. The CAR is considered to be closed.
CAR 23. In the Revised Monitoring Plan the project monitoring parameters PE, PE_{ME}, PE_{MD}, PE_{UM} and baseline parameters BE, BE_{MR}, BE_{Use} have different recording frequency while it should be consistent for all of this parameters. Please, correct.	99 (a)	The Revised MP has been corrected.	The information regarding parameters' recording frequency is now consistent. The CAR is closed.

CAR 24. In the revised monitoring plan it is indicated that the methane amount destroyed by flaring (P11) is recorded monthly, however from the formula (5) it is evident that this parameter is determined with 15 min interval. Please, correct/clarify.	99 (a)	The Revised MP has been corrected.	The issue is closed based on due correction made.
CAR 25. In the sections D.1.1.1 and D.1.1.3 of the Revised Monitoring Plan (column "Comment") for calculated parameters, please, provide references to the exact formulas used for calculation of those parameters.	99 (a)	The Revised MP has been corrected.	The clear references to the exact formulas have been provided. The issue is closed.
CAR 26. The data units must be indicated in the section D.1.1.1 of the Revised monitoring plan for parameters P16, P19, P23, P24, P28.	99 (a)	The Revised MP has been corrected.	The data units have been indicated as required. The CAR is closed.

CAR 27. Calibration frequency of some measuring equipment is not indicated (section B.1.2, Table-5 of the MR). Please, provide information on calibration frequency for all equipment used in project monitoring.	101 (b)	Changes have been made in MR.	The required information was provided in the MR and found to be appropriate. The issue is closed.
CAR 28. In the list of monitoring equipment for each gauge/parameter it should be clearly indicated where it is installed, i.e., data for which unit (flare, boiler etc.) is measured by each particular meter.	101 (b)	Changes have been made in MR.	The table 5 in the section B.1 of the MR was supplemented with the specifying information as to the meters' location. The issue is closed.
CAR 29. Please, provide a serial number for monitoring equipment with ID 30 (standard orifice).	101 (b)	The serial number will be provided for next verification because it is inside orifice and can be seen only during calibration	Because of impassibility to identify monitoring equipment's serial number during this verification, a FAR 03 is raised: **FAR 03**. The serial number of standard orifice used for measurement of gas flow to boilers must be provided.

CAR 30. Please, indicate the last calibration date for monitoring equipment with ID 31, ID 42, ID 43.	101 (b)	Changes have been made in MR.	The issue is closed based on due amendments made.
CAR 31. In the MR there is a confusion with the serial numbers of resistance thermometers installed at flare 1 and flare 2 (ID 7 and ID 26 respectively), as during site visit is was observed that the resistance thermometer 98026/2 is installed at flare 1 and 4571 at flare 2. Please, make corrections.	101 (b)	Changes have been made in MR.	The information regarding meters' serial numbers has been corrected in the MR. The issue is closed.
CL 01. Due to the fact that there were changes to project implementation since the last verification, please, show the significance of the deviations on the additionality of the project.	92	The changes made since the last verification are concerning the two new flares. The flares are always additional as they are producing only costs without JI-revenues. The project without ERU revenues gains more investment and operational costs without any additional income.	The clarification is accepted. The issue is closed.

CL 02. Please, clarify whether the installed cogeneration unit produced heat during the considered monitoring period and how this was accounted in emission reduction calculation.	93	The heat produced by the cogeneration unit has not been used during the monitoring period. No heat from the unit has been accounted in emission reduction calculation.	The clarification is accepted. The issue is closed.

CL 03. Please, explain why the reported amount of electricity consumed by the project is zero. In respect of this clarification is needed: - for boilers: PDD and revised monitoring plan envisage that the upgraded CMM fired boilers needs less electric power than the old coal fired boilers, thus provide the detailed justification that this is still applicable to the project taking into account changes to project design (5 boilers were installed instead of 2). The justification must be supported with appropriate calculations/	93	*Response #1*: 1) See Kom22-6 - CONSELEC-Boilers.xls 2) See Kom22-7 - CONSELEC-F1-F3.xls, Kom22-8 - Stromverbrauch KGUU.xls 3) The power amount consumed by the power generation units is not taken explicitly into account as $CONS_{ELEC,PJ}$. The cogeneration unit is connected via one power online to the grid and the (Actaris) power meter, which is mounted after the transformer, is a bidirectional meter, so that the power own consumption is automatically subtracted from the produced power amount and the net produced power is counted as fed-in amount. For comparison there is a second power meter.	*Conclusion on response #1:* 1. Please, provide calculation of boilers' power consumption in the baseline. Please, clarify, why calculation for old boilers was done for 2000 h. 2. As to the power consumption by flares, the provided calculation demonstrated that is value less that 1 %, thus can be neglected. 3. The amount of power consumed by the cogeneration unit must be stated in the Excel spreadsheet. Please, correct the Excel file. *Final conclusion:* The proper modifications to the data in ERU calculation Excel file have been made. The provided clarification was found sufficient. The issue is closed.

- estimations. - for flares: Considering the fact that 3 flares instead of 1 were installed, please, clarify why electricity consumed by flare units is not accounted. - for cogeneration unit: The PDD indicated that the cogeneration unit needs additional power especially for the cooling fans and this has to be taken into account. However, electricity consumption by cogeneration unit is not taken into account in project emission calculation for considered monitoring period. Moreover, no information regarding this is available in the revised monitoring plan (see pg.9, D.1.1.2). Please, provide actual values/calculations to support the assumption made.		Inside the cogeneration unit (DEIF), which is measuring directly the produced power amount without deduction of own consumption. In that way $CONS_{ELEC,PJ}$ can be determined as difference between the two counters. This is shown in the In the Excel-Sheet <K22-M1_Measuring_Data _2010-04-01 to 2011-03-15.V2b.xls>. The measured difference between the DEIF counter, produced power and ACTARIS counter, fed-in power, is the power own consumption $CONS_{ELEC}$. The average value is 2.6%. *Response #2:* 1) 2,000 h full capacity operation time for boilers is a conservative yearly average. The boilers produced 7,452 MWh from June 2010 to 15 March 2011 (9.5 months including the complete winter period). The extrapolation to a full year delivers a value of about 8,750 MWh or 1,500 h full capacity operation. So that the value of 2,000 h is conservative for the operation of electricity. 3) The corrected file has been sent to BV.	

CL 04. Please, provide clarification on method used for determination of power production by cogeneration unit (IDs 14 and 14a, two devices). If the value of electricity generated is measured by Actaric SL-7000, for what purpose the Deif PPU meter is used.	99 (a)	See response to CL 03.	*Conclusion on response #1:* The conclusion is pending on response to CL 03. *Final conclusion:* The provided clarification was found sufficient. The appropriate amendments were made to the revised MP. The issue can be considered closed.

CL 05. Please, provide justification of the value of heat plant energy efficiency (B57) of 91%. As this parameter applies to all heat generation units in baseline, please, clarify whether this parameter implies the efficiency of old coal boilers only or whether it takes into account the efficiency of former heat generation unit replaced by the VAH too, and provide justification of this. In the MR the value of B57 applied in the calculation must be stated and it must be consistent with the revised monitoring plan.	99 (a)	The MR has been corrected. Document justifying boiler efficiency is attached: Kom22-9 - Boiler efficiency.pdf	The boiler's operational chart has been provided. The applied boiler efficiency is equal to 86%. The issue is close based on information and additional documentation provided.
CL 06. Please, provide a VAH passport in order to confirm the value of efficiency of the heat generating by the VAH which is 98,5%.	99 (a)	The value efficiency has been corrected. Justifying document is attached: Kom22-10 - VAH efficiency.pdf	The VAH's operational charts have been provided. The value of 74,2% has been taken as VAH efficiency which is the lowest value in the operational charts and considered conservative. The issue is closed.

CL 07. Please, provide more detailed information on determination of parameters CMM amount to flares, cogeneration plant, boilers, VAH (ID 3, 9, 15, 22, 29, 40).	99 (a)	MR has been extended The Table-9 has been corrected.	The issue is closed based on appropriate corrections made.
CL 08. Please, submit the accreditation certification of the laboratory which undertakes the NMHC analysis of the captured gas. Note, that lab's accreditation validity during the whole monitoring period must be confirmed.	101 (a)	MakNII's license is attached: Kom22-11 - Licence MAKNII 2009-12-01 to 2012-10-30.pdf	The accreditation certification, registration number 2H555, issued for Testing Center of Makiyivka State Scientific and Research Institute on Mining Safety by National Accreditation Agency of Ukraine of 01/12/2009, valid until 30/11/2012, was provided to the verification team. The accreditation is valid during the whole monitoring period. The issue is closed.
CL 09. Please, provide documentation on DAVID data acquisition and visualization system and documentation confirming the responsibility of server provider for data securing and system proper functioning.	101 (a)	Information has been provided to BV. Fraunhofer UMSICHT specifies it's services in the flyer: Kom22-13 - DAVID.rar	The issue is closed based on the documentation and information on DAVID system provided.

CL 10. Please, present responses and the corresponding documentation to FAR 1 and FAR 2 issued during the previous 1st periodic verification.	101 (a)	The Monitoring Manual has been provided to BV: Kom22-14 - Monitoring manual.doc The permissions are attached: Kom22-15 - ОВОС Котельная.pdf Kom22-16 - Разрешение ВГС.pdf The project permission hasn't been provided by national environmental authority yet because of organizational problems, the documents were given to the national authority and permission will be ready until the end of 2011. The permission will be presented during next verification.	The project's Monitoring Manual has been provided. The Monitoring Manual contains monitoring procedures, log-book templates and QA/QC procedures. Therefore, FAR 01 is closed. In respect of the FAR 02 a project permission issued by the Ukrainian environmental authority is still under consideration. Hence, FAR 04 has been issued during this verification: **FAR 04**: The outstanding project permission issued by the Ukrainian environmental authority has to be presented to the verifier at the next verification.
CL 11. For methane concentration infrared measurement (ID 1, 20, 27), please, clarify the frequency of the regular calibrations made by Eco Alliance and indicate this in the MR.	101 (b)	Changes have been made in MR.	The required information was added to the MR. The CL is closed.

CL 12. Please, correct/clarify the information about the journal where emission reduction calculation results are notified and specify who performs such overview calculations.	101 (c)	Changes have been made in MR.	The information about mentioned journal was a misstatement in the MR and has been removed as irrelevant. The issue is closed based on appropriate amendments made to the MR.
CL 13. Please, provide more detailed information regarding Kuhse GmbH and its responsibilities is the project monitoring. Also, please, provide documentation confirming its legally binding obligations in project monitoring (e.g., contracts, agreement etc.).	101 (d)	*Response #1:* Information has been provided to BV. There is a frame agreement with Kuhse GmbH (not available for publishing). By this agreement Kuhse provides the Kuhse internal data base, data transfer, data storage and archiving as well as administrative work. The end users can communicate with the data base via the Data Publisher front end, see Kom22-12 - KUHSE.rar *Response #2:* The Revised MP has been extended.	*Conclusion on response #1:* Please, consider including Kuhse GmbH into the project operational and management structure in the revised MP (section D.3). *Final conclusion:* The revised MP has been modified in respect of Kuhse responsibilities in the project monitoring. The CL is closed.

FAR 01. A documented instruction/decree prescribing the storage of data monitored and required for ERUs calculation for two years after the last transfer of ERUs for the project should be issued and communicated to all responsible persons.	101 (c)	An official instruction which prescribes the procedure of data storage will be provided for the next verification.	The FAR will be checked during next periodic verification.
FAR 02. The evidences (e.g., calibration certificates) of the due calibration status of all meters used in the project monitoring during the whole monitoring period (including those which were replaced in course of the monitoring period) must be kept and made available upon request; the records confirming the meters replacement, if applicable, are to be maintained as well.	101 (c)	An official instruction which prescribes the procedure of evidences storage will be provided for the next verification.	The FAR will be checked during next periodic verification.