



BUREAU
VERITAS

VERIFICATION REPORT LLC “ECO-ALLIANCE”

VERIFICATION OF THE

CMM UTILISATION ON THE COAL MINE
SHCHEGLOVSKAYA-GLUBOKAYA OF THE
STATE HOLDING JOINT-STOCK COMPANY
“GOAO SHAKHTOUPRAVLENYE DONBASS”

2nd periodic

REPORT NO. UKRAINE-VER/0198/2010

REVISION No. 02

BUREAU VERITAS CERTIFICATION



VERIFICATION REPORT

CMM UTILISATION ON THE COAL MINE SHCHEGLOVSKAYA-GLUBOKAYA OF THE STATE
HOLDING JOINT-STOCK COMPANY "GOAO SHAKHTOUPRAVLENYE DONBASS"

Date of first issue: 24/05/2011	Organizational unit: Bureau Veritas Certification Holding SAS
Client: LLC "ECO-ALLIANCE"	Client ref.: Mr. 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 Shcheglovskaya-Glubokaya of the State Holding Joint-Stock Company "GOAO Shakhtoupravlenye Donbass", JI Registration Reference Number 0077, project of LLC "ECO-ALLIANCE" located in 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 67425 tons of CO₂eq 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/0198/2010	Subject Group: JI
Project title: CMM utilisation on the coal mine Shcheglovskaya-Glubokaya of the State Holding Joint-Stock Company «GOAO Shakhtoupravlenye Donbass»	
Work carried out by: Team Leader, Lead Verifier: Igor Kachan Team Member, Technical Specialist: Igor Antipko Team Member, Financial Specialist: Denis Pishchalov	
Work reviewed by: Ivan Sokolov - Internal Technical Reviewer Dmytro Balyn - Technical Specialist	
Work approved by: Flavio Gomes – Operational Manager	
Date of this revision: 25/05/2011	Rev. No.: 02
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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
PDD	Project Design Document
UNFCCC	United Nations Framework Convention for Climate Change



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1 INTRODUCTION

LLC "ECO-ALLIANCE" has commissioned Bureau Veritas Certification to verify the emissions reductions of its JI project "CMM utilisation on the coal mine Shcheglovskaya-Glubokaya of the State Holding Joint-Stock Company «GOAO Shakhtoupravlenye Donbass» (hereafter called "the project") in 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.



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1.3 Verification Team

The verification team consists of the following personnel:

Igor Kachan

Bureau Veritas Certification Team Leader, Climate Change Lead Verifier

Igor Antipko

Bureau Veritas Certification Team Member, Technical Specialist

Denis Pishchalov

Team Member, Bureau Veritas Certification Financial 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, monitoring



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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 08 March 2011, version 2 of 01 April 2011, version 3 of 12 May 2011 and version 5 of 19 May 2011; revised Monitoring Plan version 1 of 07 March 2011, version 3 of 28 April 2011, version 5 of 19 May 2011 and project as described in the determined PDD.

2.2 Follow-up Interviews

On 15/03/2011 Bureau Veritas Certification verification team conducted a visit to the project site (LLC "ECO-ALLIANCE") and performed (on-site) interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of Coal Mine Shcheglovskaya-Glubokaya, Eco-Alliance LLC. 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
Coal Mine Shcheglovskaya-Glubokaya	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
Consultant: Carbon-TF B.V., Eco-Alliance LLC.	Baseline methodology Monitoring plan Revision to the monitoring plan Monitoring report Deviations from PDD.



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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 25 Corrective Action Requests, 07 Clarification Requests and 02 Forward Action Request.

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

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3.1 Remaining issues and FARs from previous verifications

No open issues from the previous verification conducted for the period 01.01.2008 – 31.03.2010 by TÜV SÜD Industrie Service GmbH were identified by the verification team.

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 #3872/11/10-08, 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. 008JI04, 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 coal mine "Shcheglovskaya-Glubokaya" for heat and power generation and for flaring. CMM has been utilized in upgraded previous coal boilers, a ventilation air heater, a flare, a cogeneration unit and an emergency generator.

The project has not been implemented as planned. The ventilation air heater worked only in a short period of about four months in winter. The emergency generator did not work during this monitoring period. The winter boiler house had worked until 19/04/2010, after that summer boiler house had worked until 06/10/2010.

In winter 2009/2010 the available utilizable CMM amount was significantly fallen down. The reason is a change to a new coal seam, which has surprisingly low CH₄ concentration. Consequently the CH₄ utilization decreased. The flare was shut down on 23/10/2010 due to lack of gas amount. In summer 2011 flare will be returned on site of the coal mine Shcheglovskaya-Glubokaya.

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

Unit	Installation date (PDD)	Date of installation or envisaged new date of installation
boiler No: 1	10/2006	October 2006
boiler No: 2	10/2006	October 2006
boiler No: 3	10/2007	October 2007
summer boiler 1	6/2006	Summer 2006



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summer boiler 2	6/2006	Summer 2006
ventilation air heater	11/2006	November 2006
emergency power generation unit	07/2006	July 2006
flare No: 1	03/2009	March 2009 removed in October 2010 re-installation pending
flare No: 2	09/2009	Pending
cogeneration unit	06/2009	October 2009

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 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 changes concern:

- Delay of most project components installation. Delay in installation of the project units is caused by lacking funds due to the global financial crisis and should follow in 2011.
- Firing capacity of installed flare. In the PDD a flaring capacity of 5 MW was given. The installed flare has originally a capacity of up to 8.525 MW and has been slightly modified to reach an extended capacity of up to 10 MW. This allowed a higher utilization of CH₄ during the start-up period of the project while the installation of the other units was delayed.

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

http://ji.unfccc.int/JI_Projects/DB/PYQSXU6BW4J575X0VBZ8LNYNTNTYG



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[/Determination/DNV-CUK1227774526.4/viewDeterminationReport.html](#)

and revised monitoring plan version 5 of 19/05/2011 which was positively determined in course of the current verification.

For calculating the emission reductions, key factors, such as availability and amount of extracted gas, concentration of methane in the extracted gas 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 passports, the study of standardized emission factors for the Ukrainian electricity grid, sectoral standards, IPCC guidelines, laboratory analysis, are clearly identified, reliable and transparent.

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

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 07 of 06/08/2009 was modified by the project participants. The project participants submitted for determination the Revised Monitoring Plan version 1 of 07/03/2011 which was reviewed by BVC during current verification. Final version of the Revised Monitoring Plan, version 5 of 19/05/2011, contains descriptions of all the changes introduced and appropriate justification for these changes. The modifications are determined as described below.

The calculation of the emission reductions is not calculated on a yearly basis, but for an individual period. Flow data and flare efficiency as well as the methane amount destroyed by flaring are calculated in 15 min. intervals. Generally all project variables determined on a yearly basis in the original version of the monitoring plan have been transferred to individual periods. The frequency of determination (calculation) of some monitoring parameters 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 than 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



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monitoring system or data recording were made. This change was found to be appropriate as it improves the accuracy of the monitoring plan. The existing project monitoring system provides for measurement of major monitoring input data with 15 min interval, thus calculation of the emission reduction on a monthly basis or even shorter period is possible.

The heat amount produced by the ventilation air heater and the power amount produced by the emergency power generation are not measured but calculated using the utilized methane amount. The main emissions variables for project emissions, baseline emissions and emissions reductions are calculated on a monthly basis. Yearly sums and a total sum for the monitoring are calculated.

The power amount consumed by the power generation units was not measured with power meters, but calculated using a fixed percentage of the produced power. The percentage has been fixed to 3.5%. The value was set in a conservative manner that is confirmed by the data provided in the supporting documentation.

The formula for the calculation of project emissions from uncombusted methane has been updated. Formulae from the methodological "Tool to determine project emissions from flaring gases containing methane" have been adopted for the determination of the project emissions from flaring. 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.

In contrast to the flaring tool the combustion efficiency of 99.5%, (according to IPCC guidelines) has been taken into account for combustion temperatures above 850°C. The default value of 90% is used in the range from 500°C to 850°C and the default value of 0% - below 500°C.

The power amount of the emergency power generator (GEN_{EPG}) has not been counted. The electricity production has been recalculated using the methane amount consummated by the unit and the power efficiency as given in the PDD. The power amount is not measured with a power meter but calculated using a fixed power generation efficiency of 36% as stated in the determined PDD. The value was set in a conservative manner.

The formulae used to calculate the amount of methane sent to power generation (MM_{ELEC}), the amount of methane sent to heat generation (MM_{HEAT}), the power generation by the project activity (GEN), the heat generation by the project ($HEAT$) were clarified in the revised monitoring plan in order to reflect that these parameters are calculated as a sum of the few separate measurements. The missing formula (14a) used for CMM captured in the project activity (CMM_{PJ}) calculation was added to the revised monitoring plan. These revisions provide more accurate and transparent algorithm of monitoring.



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Formulae (24) and (30) were added to the revised monitoring plan in order to calculate methane amount sent to cogeneration unit (MM_{CHP}) in April 2010 when the monitored data was unavailable due to malfunctioning data acquisition system.

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 changes in project design and represent the situation observed during the considered monitoring period.

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. 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 units installed in the project are designed to run fully automatic, so that the operating personnel have only to supervise the correct operation of the plant and the plausibility of the monitored data. In case of disturbances and emergency the plant is shut down automatically and no unintended emissions are caused. In case of emergency an alarm message is sent to a permanently manned place in the control room. The operating personnel, who are on duty, check the plant status and decide on further procedures as clearing the fault, eliminating danger and restarting the plant, sending a service team, informing the project manager, a fire brigade, etc.

The collected data are stored electronically and on paper in journals by



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the coal mine personnel. The data are read out hourly from the data logger and stored and archived in an internet-based data base. Eco-Alliance, the administrator of the data base is responsible for the proper work of the data base, routine backups and safe storage. Eco-Alliance regularly verifies the electronically recorded data with the handwritten data and checks the stored data for plausibility, errors, deviations and non-conformity.

The plant manager is responsible for the preparation of the standardized weekly report. He is also in charge for the preparation of the summarized monthly and yearly reports, which are revised by the project manager. The visualization of the data via internet provides a prompt control of the project operation by the project manager. All data are continuously checked for consistency, completeness and integrity by Eco-Alliance. Based on the procedure described above a detailed report is prepared by Eco-Alliance.

The data collection and management system for the project is in accordance with the PDD and the revised monitoring plan. The project management structure is presented in section C of the monitoring report. 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 Shcheglovskaya-Glubokaya 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.



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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 Plan indicated in the final determined and registered PDD and revised monitoring plan version 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 PDD. 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 reductions are accurately calculated and are 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	: 59824	t CO ₂ equivalents;
Project emissions	: 7597	t CO ₂ equivalents;
Emission Reductions	: 52227	t CO ₂ equivalents.

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

Baseline emissions	: 17199	t CO ₂ equivalents;
Project emissions	: 2001	t CO ₂ equivalents;
Emission Reductions	: 15198	t CO ₂ equivalents.

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

Baseline emissions	: 77023	t CO ₂ equivalents;
Project emissions	: 9598	t CO ₂ equivalents;
Emission Reductions	: 67425	t CO ₂ equivalents.

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5 REFERENCES

Category 1 Documents:

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

- /1/ Project Design Document "CMM utilisation on the coal mine Shcheglovskaya-Glubokaya of the State Holding Joint-Stock Company "GOAO Shakhtoupravlenye Donbass", version 07 dated 06/08/2009
- /2/ Monitoring Report "CMM utilisation on the coal mine Shcheglovskaya-Glubokaya of the State Holding Joint-Stock Company "GOAO Shakhtoupravlenye Donbass", version 1 dated 08/03/2011
- /3/ Monitoring Report "CMM utilisation on the coal mine Shcheglovskaya-Glubokaya of the State Holding Joint-Stock Company "GOAO Shakhtoupravlenye Donbass", version 2 dated 01/04/2011
- /4/ Monitoring Report "CMM utilisation on the coal mine Shcheglovskaya-Glubokaya of the State Holding Joint-Stock Company "GOAO Shakhtoupravlenye Donbass", version 3 dated 12/05/2011
- /5/ Monitoring Report "CMM utilisation on the coal mine Shcheglovskaya-Glubokaya of the State Holding Joint-Stock Company "GOAO Shakhtoupravlenye Donbass", version 5 dated 19/05/2011
- /6/ Revised Monitoring Plan version 1 of 07/03/2011
- /7/ Revised Monitoring Plan version 3 of 28/04/2011
- /8/ Revised Monitoring Plan version 5 of 19/05/2011
- /9/ Calculation of Emission Reductions – excel file "ER-SG-2010-04-01 to 2011-02-28_V1", version 1 of 10/03/2011
- /10/ Calculation of Emission Reductions – excel file "ERER-SG-2010-04-01 to 2011-03-15.V2", version 2 of 01/04/2011
- /11/ Calculation of Emission Reductions – excel file "ER-SG-2010-04-01 to 2011-03-15.V3", version 3 of 11/05/2011
- /12/ Calculation of Emission Reductions – excel file "ER-SG-2010-04-01 to 2011-03-15.V5", version 5 of 24/05/2011
- /13/ Letter of Approval of Ministry of Environmental Protection of Ukraine No 3872/11/10-08, issued on 26/03/2008
- /14/ Approval of voluntary participation in a Joint Implementation Project of the Ministry of Economic Affairs of the Netherlands No 008JI04, issued on 22/04/2008



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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/ Photo - Captured gas measurement unit
- /4/ Photo - Flare temperature sensor
- /5/ Ventilation air heater (VAH) operation logbook
- /6/ Photo - Operation control system of shaft #1 ventilation air heater (VAH -1)
- /7/ Photo - Cogeneration unit, serial #146401
- /8/ Photo - GHG measuring system operation panel
- /9/ Photo - Power meter
- /10/ Photo - Cogeneration unit operation panel
- /11/ Photo - Power meter, NZR, serial #475072
- /12/ Cogeneration unit logbook, daily data
- /13/ Gas analyzer calibration protocol, serial # NI-WN-925
- /14/ Statement on power outage to flare 5/8, serial #142401, 23/10/10
- /15/ Statement on flare 5/8, serial #142401, dismantling and shipping, 29/10/10
- /16/ Statement on dismantling of BOSCH starters, serial #386, serial #087
- /17/ Statement on ABB Type 50B01 HT441919 turbine compressor dismantling, 19/02/11
- /18/ Statement dated 21/04/2010 on commissioning of power meter, serial #0865680707893854
- /19/ Statement dated 24/04/2010 on KMU-45B synchronization controller, serial #82365
- /20/ Operation report dated 05/05/10 on NC20K16 unit, serial #146401
- /21/ Operation report dated 03/09/10 on flare unit-5/8, serial #1424
- /22/ Operation report dated 04/10/10 on flare unit-5/8, serial #1424
- /23/ Operation report dated 04/10/10 on flare unit-5/7, serial #142401
- /24/ Failure, interruption journal, daily data
- /25/ Flare unit operation logbook, daily data



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- /26/ Photo - Pressure transmitter, serial #08W18 C3059154001002
- /27/ Photo - Temperature sensor, serial # TN 00515988 012648300010 08370001
- /28/ Passport on Kuhse synchronizer
- /29/ Photo - Location of flare unit-5/8 before its dismantling
- /30/ Photo - Natural gas quantity calculation unit (in winter period)
- /31/ Photo - Siemens gas analyzer
- /32/ Photo - Emission reduction units automated calculation system of boiler house (3 winter boilers, 2 summer boilers), serial #3, 2010
- /33/ Photo - Flow meter (boiler #1), serial #105304
- /34/ Photo - Flow meter (boiler #4), serial #258159
- /35/ Photo - Flow meter (boiler #3), serial #105304
- /36/ Photo - Heat energy calculation system (boiler #1)
- /37/ Photo - Heat energy calculation system (boiler #4)
- /38/ Photo - Inlet water sensor
- /39/ Emission reduction units automated calculation system logbook (for boilers #1,3,4 and VAH-1)
- /40/ Photo - Cold and hot water consumption calculation unit (boiler #3)
- /41/ Emission reduction units automated calculation system passport dated 05/05/10
- /42/ Gas analyzer passport dated 05/05/2010
- /43/ Gas analyzer unit operation manual dated 24/03/10
- /44/ Emission reduction units automated calculation system operation manual dated 02/04/10
- /45/ Photo - Alternator type ГМC14-41-120M4, serial #662933
- /46/ Certificate #2135 (valid till 27/10/2011) on measuring equipment calibration
- /47/ Certificate #0483 (valid till 31/03/2011) on measuring equipment calibration
- /48/ Passport on gas analyzer, serial #120482003017
- /49/ Passport on resistance thermometer, serial #4571/1
- /50/ Certificate #0483 (valid till 31/03/2011) on measuring equipment calibration
- /51/ Certificate #2171 (valid till 02/11/2011) on measuring equipment calibration
- /52/ Passport on standard orifice, serial #501871 (SG-F1)
- /53/ Passport on standard orifice, serial #501029



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- /54/ General scheme of project equipment and monitoring objects
- /55/ Order #1263 dated 04/10/2010
- /56/ Installation scheme including metering positions
- /57/ Passport AAЭИ.405211.072-21 ПС of resistance thermometer TSPU 1-3 Pt100, serial #09457-09459
- /58/ Passport AAЭИ.405211.072-20 ПС of resistance thermometer TSPU 1-3 Pt100, serial #09439-09451
- /59/ Passport AAЭИ.405211.398-08 ПС of resistance thermometer TSPU 1-3 Pt100, serial #09460-09462
- /60/ Passport of gas analyzer type Ultramat 23, serial # NI-WN-925
- /61/ Passport of gas analyzer type BINOS 100, serial #120482003017
- /62/ Passport of resistance thermometer JUMO, serial #98023
- /63/ Passport of resistance thermometer Pt100, serial #4571/1
- /64/ Passport dated 14/10/2009 of flow meter, serial #8087123 (boiler #1)
- /65/ Passport dated 12/10/2009 of flow meter type DM3583M, serial #8087123 (boiler #3)
- /66/ Passport dated 12/10/2009 of flow meter type DM3583M, serial #19 (boiler #4)
- /67/ Photo - Multipurpose power meter SL 7000 Smart
- /68/ Protocol #00262 dated 16/07/2009 on testing of the voltage transformer type NTMI-6-66 U Z, serial #2193, issued by LN Engineering Consulting Centre
- /69/ Certificate #ЕТЛ39/07/09 dated 22/07/2009 on calibration of electric current transformer type TPL-10 UZ, serial #1372, valid till 22/07/2013, issued by Kryvbasstandartmetrologiia State Enterprise
- /70/ Certificate #ЕТЛ39/07/09 dated 22/07/2009 on calibration of the electric current transformer type TPL-10 UZ, serial #1083, valid till 22/07/2013, issued by Kryvbasstandartmetrologiia State Enterprise
- /71/ Certificate #0484 dated 31/03/2010 on calibration of the resistance transformer type P121-E02-311, serial #Ex812127132, valid till 31/03/2011, issued by Sumy Regional Scientific Production Centre of Standardization, Metrology and Certification State Enterprise
- /72/ Certificate #2171 dated 02/11/2010 on calibration of the resistance transformer type P121-E02-311, serial # Ex812126966, valid till 02/11/2011, issued by Sumy Regional Scientific Production Centre of Standardization, Metrology and Certification State Enterprise
- /73/ Certificate #0482 dated 31/03/2010 on calibration of the resistance transformer type ST3000, serial #08W18C3059154001002, valid till 31/03/2011, issued by Sumy Regional Scientific Production Centre of Standardization, Metrology and Certification State Enterprise
- /74/ Certificate #2135 dated 27/10/2010 on calibration of the resistance transformer type ST3000, serial #08W18C3059154001003, valid till 27/10/2011, issued by Sumy Regional Scientific Production Centre of



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Standardization, Metrology and Certification State Enterprise

- /75/ Certificate #ЕТЛ38/07/09 dated 22/07/2009 on calibration of the electric current transformer type TPL-10 UZ, serial #1153, valid till 22/07/2013, issued by Kryvbasstandartmetrologiia State Enterprise
- /76/ Passport Ба 4.728.035 ПС on the electric current transformers Т-0,66, serial #08043
- /77/ Passport Ба 4.728.035 ПС on the electric current transformers Т-0,66, serial #09704
- /78/ Passport Ба 4.728.035 ПС on the electric current transformers Т-0,66, serial #38052
- /79/ Passport ААЭИ.405211.398-07 ПС of resistance thermometer TSPU 1-3 Pt100, serial #09434-09438
- /80/ Passport ААЭИ.405211.072-20 ПС of resistance thermometer TSPU 1-3 Pt100, serial #09439-09451
- /81/ Passport ААЭИ.405211.072-19 ПС of resistance thermometer TSPU 1-3 Pt100, serial #09452-09456
- /82/ Passport ААЭИ.405211.398-08 ПС of resistance thermometer TSPU 1-3 Pt100, serial #09460-09462
- /83/ Passport ААЭИ.405211.072-21 ПС of resistance thermometer TSPU 1-3 Pt100, serial #09457-09459
- /84/ Data record on electricity meter type ЦЭ6803В, serial #008656037356170
- /85/ Photo - Siemens gas analyzer type ULTRAMAT 23, serial #N1-WN-925 (boiler house)
- /86/ Photo - VAH pressure transmitter type SITRANS P serie Z, serial #AZB/X1110845
- /87/ Photo - Generator pressure transmitter type P 121 E02-311, serial #Ex812127126
- /88/ Photo - Generator pressure transmitter, serial #Ex812127126
- /89/ Photo - Pressure transmitter type SITRANS P serie Z, serial #AZB/X1110844 (boiler house)
- /90/ Photo - Pressure transmitter type P 121 E02-311, serial #Ex812126961 (flare unit #1)
- /91/ Photo - Pressure transmitter type P 121-EB4-311, serial #Ex612124593 (flare unit #2)
- /92/ Photo - Pressure transmitter type SITRANS P serie Z, serial #AZB/A2199936
- /93/ Photo - Pressure difference transmitter type DM3583M, serial #101503 (boiler #1)
- /94/ Photo - Pressure difference transmitter (boiler #3)
- /95/ Photo - Pressure difference transmitter type DM3583M, serial #105321 (boiler #4)
- /96/ Photo - Pressure difference transmitter type STD-3000, serial #09W12C3149127001001 (VAH)
- /97/ Photo - Pressure difference transmitter type STD-9245-A10, serial #08W30C3088100001001 (Generator)



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- /98/ Photo - Pressure difference transmitter type STD-3000, serial # 08W18 C3059154001002 (Generator)
- /99/ Photo - Pressure difference transmitter type STD-9245-A10, serial #09W33C3180872001001 (boiler house)
- /100/ Photo - Pressure difference transmitter type STD-9245-A10, serial #08W18C3059154001001 (flare unit #1)
- /101/ Photo - Pressure difference transmitter type STD-9248-E1, serial #0609 C2801413001001 (flare unit #2)
- /102/ Photo - Standard orifice type DIN 19205, serial #502741 (VAH)
- /103/ Photo - Standard orifice type DIN 19205, serial #56090 (boiler house)
- /104/ Photo - Standard orifice type HIMPE AG, serial #486343 (flare unit #2)
- /105/ Photo - Resistance thermometer type TSPU 1-3 Pt100, serial #09455
- /106/ Photo - Resistance thermometer type TSPU 1-3 Pt100, serial #09457
- /107/ Photo - Resistance thermometer type TSPU 1-3 Pt100, serial #09458
- /108/ Photo - Resistance thermometer type TSPU 1-3 Pt100, serial #09459
- /109/ Acceptance certificate dated 02/2010 on transformer of electric current type T-0.66, serial #18077
- /110/ Acceptance certificate dated 09/2009 on transformer of electric current type T-0.66, serial #22610
- /111/ Acceptance certificate dated 09/2008 on transformer of electric current type T-0.66, serial #65344
- /112/ Photo - Hot water low meter type KSD-023, serial #8087123 (boiler #1)
- /113/ Photo - Hot water low meter type KSD-023, serial # 4014777 (boiler #3)
- /114/ Photo - Hot water low meter type KSD-023, serial # 9056848 (boiler #4)
- /115/ Photo - Electricity meter, serial #008656037356170
- /116/ Photo - Thermocouple type S, Pt/PtRh, serial #56934 (flare unit #1)
- /117/ Photo - Thermocouple type S, Pt/PtRh, serial #66503 (flare unit #2)
- /118/ Photo - Resistance thermometer, serial #TN005159870126666901008400002 (VAH)
- /119/ Photo - Water resistance thermometer on inlet type TSPU 1-3 Pt100, serial #09443 (boiler house)
- /120/ Photo - Resistance thermometer, serial #98026 (generator)
- /121/ Photo - Resistance thermometer, serial # TN005159880126483001008370001 (generator)
- /122/ Photo - Hot water resistance thermometer type TSPU 1-3 Pt100, serial #09442 (boiler house)
- /123/ Photo - Resistance thermometer type TSPU 1-3 Pt100, serial #09442 (boiler #1)



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- /124/ Photo - Resistance thermometer type TSPU 1-3 Pt100, serial #09448 (boiler #3)
- /125/ Photo - Resistance thermometer type TSPU 1-3 Pt100, serial #09444 (boiler #4)
- /126/ Photo - Resistance thermometer, serial # TN005159870126666901008400007 (boiler house)
- /127/ Photo - Water resistance thermometer on inlet type TSPU 1-3 Pt100, serial #09456 (boiler house)
- /128/ Photo - Resistance thermometer, serial #4571 (flare unit #1)
- /129/ Photo - Resistance thermometer, serial #98026/2 (flare unit #2)
- /130/ Photo - Electricity current transformer type T-0.66 Y3, serial #08043
- /131/ Photo - Electricity current transformer type T-0.66 Y3, serial #09704
- /132/ Photo - Electricity current transformer type T-0.66 Y3, serial #38052
- /133/ Photo - Resistance thermometer, serial #4571/1 (flare unit)
- /134/ Photo - Resistance thermometer, serial #4571 (flare unit)
- /135/ Record about conversion to summer boilers.
- /136/ Statement about automatic ERUs monitoring system (CAYECB) conversion to summer mode, OJSC "Shakhtoupravlenye Donbass", dated 06/06/2010
- /137/ Statement about automatic ERUs monitoring system (CAYECB) conversion to winter mode, OJSC "Shakhtoupravlenye Donbass", dated 11/10/2010
- /138/ The results of gas samples analysis. МакННН. Dated 28/02/2011.

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 GOAO "Shakhtoupravlenye Donbass", head of JI project
- /2/ Konstantyn Skryl – chief engineer of the coal mine "Shcheglovskaya-Glubokaya"
- /3/ Oleksandr Rybalko– chief technologist of GOAO "Shakhtoupravlenye Donbass"
- /4/ Mykola Dubovyi - chief mechanical engineer of the coal mine "Shcheglovskaya-Glubokaya"
- /5/ Ievhenii Shelenkyn - chief electrician of the coal mine "Shcheglovskaya-Glubokaya"
- /6/ Viktor Dikhno - heating engineer of the coal mine "Shcheglovskaya-Glubokaya"
- /7/ Oleh Rutsyii – head of water facility department



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- /8/ Volodymyr Semushyn - head of degassing department
- /9/ Oleksandr Honcharov – head of ventilation department
- /10/ Volodymyr Kasianov – managing director of “Eco-Aliance” LLC
- /11/ Pavlo Sheleheda – deputy director of “Eco-Aliance” LLC
- /12/ Karl Wöste – senior consultant, Carbon-TF B.V.
- /13/ Achim Wörsdörfer – representative of A-TEC Anlagentechnik GmbH company

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APPENDIX A: VERIFICATION PROTOCOL

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

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
Project approvals by Parties involved				
90	Has the DFPs of at least one Party involved, other than the host Party, issued a written project approval when submitting the first verification report to the secretariat for publication in accordance with paragraph 38 of the JI guidelines, at the latest?	The project was approved as JI-project since 08/12/2009. The information concerning project approval is available on the web-site: http://ji.unfccc.int/JI_Projects/DeterAndVerif/Verification/FinDet.html .	OK	OK
91	Are all the written project approvals by Parties involved unconditional?	The written project approvals by Parties involved are unconditional	OK	OK
Project implementation				
92	Has the project been implemented in accordance with the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website?	CAR01 It is stated in the MR that "the flare has been moved to the Coal Mine Nr.22 Kommunarskaya, JI0078 at 29/10/2010". However, decommissioning of the flare was not envisaged in the registered PDD. Please, provide detailed description and justification of all changes occurred as per paragraph 6 of the <i>Procedures Regarding Changes During Project Implementation, Version 1</i> . Please, provide	CAR01 CAR02 CAR03 CAR04	OK OK OK OK

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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		<p>confirmation that all conditions mentioned in the paragraph 7 of the above mentioned document are still met by the project. Please, provide evidences that the changes introduced do not affect the project's additionality.</p> <p>CAR02 Please, provide comparison of the planned in the PDD and actually achieved values of emission reductions and explain a deviation.</p> <p>CAR03 The information concerning time of operation of winter and summer boiler houses is missing in the MR. Moreover it was observed during site visit that the same boiler house monitoring point (set of meters) is used in the both boiler houses. Please, add appropriate information to the MR and provide corresponding documented evidence.</p> <p>CAR04 It was observed that the upgraded boiler #3 was fired with coal within the monitoring period. However, this information is absent in the MR. Please, make corresponding corrections. Please, clarify if the heat produced by this boiler was accounted in the ERUs calculating.</p>		
93	What is the status of operation of the project during the monitoring period?	<p>CAR05 The information concerning data acquisition</p>	CAR05	OK

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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		system disturbance in April 2010 is missing in the section C.4. of the MR. Please, add appropriate information and provide records concerning troubleshooting procedures.		
Compliance with monitoring plan				
94	Did the monitoring occur in accordance with the monitoring plan included in the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website?	No. The monitoring occurred in line with the revised monitoring plan.	OK	OK
95 (a)	For calculating the emission reductions or enhancements of net removals, were key factors, 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?	CL01 Please, submit the results of NMHC analysis of the captured gas and the accreditation certification of the laboratory which undertakes the NMHC. Note, that lab's accreditation validity during the whole monitoring period must be confirmed.	CL01	OK
95 (b)	Are data sources used for calculating emission reductions or enhancements of net removals clearly identified, reliable and transparent?	CL02 <i>IPCC 1996</i> and <i>IPCC 2006</i> are indicated in the Table 6 of the MR as source of data for some parameters. Please, note that <i>IPCC 2006</i> is not approved by Ukraine. Please, clarify why <i>IPCC 1996</i> was not used as source of data for all parameters.	CL02	OK
95 (c)	Are emission factors, including default	CAR06	CAR06	OK

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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	emission factors, if used for calculating the emission reductions or enhancements of net removals, selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice?	As per the revised monitoring plan and determined PDD: "Should a new officially approved standardized baseline for Ukraine be adopted, the baseline carbon emission factor will be changed accordingly". Considering this, the baseline carbon emission factor approved in Ukraine (http://www.neia.gov.ua/nature/doccatalog/document?id=126006) must be used for ERUs calculating 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?	<p>CAR07 Please, make consistent format of numbers throughout the MR (pay attention to using of commas and full stops).</p> <p>CAR08 The emission reductions (indicated in the section D.3. of the MR) for the sub-periods indicated in the MR are not consistent with the relevant values of baseline and project emissions. Please, correct.</p> <p>CAR09 Please, add to the MR values of project and baseline emissions and emission reduction by sources [as in the section E of the PDD].</p> <p>CAR10 It is stated in the sections B.2.2. - B.2.4. that variables are "calculated using formulae from the PDD". However, reference to the revised</p>	<p>CAR07 CAR08 CAR09 CAR10 CAR11 CAR12 CAR13 CAR14 CL03 CL04</p>	<p>OK OK OK OK OK OK OK OK OK OK</p>



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		<p>monitoring plan must be indicated instead. Please, note that exact and traceable references to the formulae used must be indicated.</p> <p>CAR11 The data unit for the parameter P25 is missing in the Table 7. Please, correct.</p> <p>CAR12 In the section Table 7 of the MR the information indicated for GEN_{EPG} does not correspond to the data indicated in the section A.3.4 of the Annex 3 and the revised monitoring plan. Please, make corresponding corrections to provide consistency.</p> <p>CAR13 “Method1 measured, method2” is referred to in the Table 7 of the MR for B47 parameter. Please, clarify this information and provide clear and traceable reference.</p> <p>CAR14 For the parameters MDEPG, MMCHP, MDHEAT,VAH, EffCHP, and B46GEN clear sources of data or formulae used for their calculation must be stated in the Table 7 and Table 8 of the MR.</p> <p>CL03 The MR and the Revised Monitoring Plan state that the additional power consumption by</p>		

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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		<p>cogeneration unit was fixed to 3.5% was not monitored. Please, provide solid evidence to confirm this fact.</p> <p>CL04</p> <p>Please, clarify how monthly values of methane concentration stated in the ERU calculation Excel file are determined.</p>		
Applicable to JI SSC projects only				
96	<p>Is the relevant threshold to be classified as JI SSC project not exceeded during the monitoring period on an annual average basis?</p> <p>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?</p>	N/A	OK	OK
Applicable to bundled JI SSC projects only				
97 (a)	Has the composition of the bundle not changed from that is stated in F-JI-SSCBUNDLE?	N/A	N/A	N/A
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	N/A	N/A	N/A

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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	<p>monitoring plan that provides for overlapping monitoring periods, are the monitoring periods per component of the project clearly specified in the monitoring report?</p> <p>Do the monitoring periods not overlap with those for which verifications were already deemed final in the past?</p>			
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?	<p>CAR15</p> <p>In the Revised Monitoring Plan, please, list all the revisions and changes compared to the original monitoring plan. Please, 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.</p>	CAR15	OK
99 (b)	Does the proposed revision improve the accuracy and/or applicability of information collected compared to the original monitoring plan without changing conformity with the relevant	<p>CAR16</p> <p>The references to Annex 3 (page 2) and Annex 3.1 (page 12) in the Revised Monitoring Plan version 1 dated 7/03/2011 are irrelevant as the document does not contain these Annexes.</p>	<p>CAR16</p> <p>CAR17</p> <p>CAR18</p> <p>CAR19</p> <p>CAR20</p>	<p>OK</p> <p>OK</p> <p>OK</p> <p>OK</p> <p>OK</p>

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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	rules and regulations for the establishment of monitoring plans?	<p>CAR17 In the sections D.1.1.1 and D.1.1.3 (column "Comment") of the Revised Monitoring Plan, please, provide the exact and traceable references to the formula used for calculation of the parameters P1-P5, P9-P11, MD_{HEAT, VAH}, MD_{EPG}, MM_{CHP}, Eff_{CHP}, and estimation of Eff_{EPG}</p> <p>CAR18 For some parameters in the sections D.1.1.1 and D.1.1.3 IPCC is indicated as the source of data. Please, provide the exact reference in the Monitoring Plan.</p> <p>CAR19 For parameter P16, please, indicate data units in the section D.1.1.1.</p> <p>CAR20 Some inconsistency was indicated in the Revised Monitoring Plan and the MR which relates to the P17 parameter: "Hand readings from the internal counter of the units" - Revised Monitoring Plan. "Calculated using formulae from the PDD" – MR (page 21) Please, correct/clarify.</p> <p>CAR21 The data units must be indicated in the section</p>	<p>CAR21 CAR22 CL05 CL06</p>	<p>OK OK OK OK</p>

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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		<p>D.1.1.1 of the revised monitoring plan for P19, P23, P25 parameters.</p> <p>CAR22 Two different methods were used to monitor MM_{CHP} parameter: method of direct measurements and method of calculation. These algorithms must be reflected in the Revised Monitoring Plan (for a case when method of direct measurements will be unavailable in future). Please, define exactly in the Revised Monitoring Plan "steady operation period" for recalculation of efficiency of power generation in the cogeneration unit.</p> <p>CL05 Please, provide clear reference/evidence to prove the value of HV_{CH4} used.</p> <p>CL06 It is stated in the Revised Monitoring Plan that Eff_{HEAT, VAH} is measured. Some reference "VAH pass" is also indicted in the section D.1.1.1. Please, clarify the algorithm of Eff_{HEAT,VAH} monitoring.</p>		
Data management				
101 (a)	Is the implementation of data collection procedures in accordance with the monitoring plan, including the quality	The implementation of data collection procedures are in accordance with the revised monitoring plan and registered PDD. The verification team	OK	OK

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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	control and quality assurance procedures?	confirms effectiveness of existing management and operational systems and found them eligible for reliable project monitoring.		
101 (b)	Is the function of the monitoring equipment, including its calibration status, is in order?	<p>CAR23 Some inconsistency was detected in the description of calibration procedure for 7e parameter (Table 5 of the MR): "Further calibrations made using procedures of Sumystandartmetrology. Calibrations made using procedures of Eco-Alliance OOO every two weeks". Please, correct/clarify. The date of last calibration must be also indicated for this parameter instead "/03/201".</p> <p>CAR24 In the list of monitoring equipment used it should be clearly indicated for each gauge/parameter where it is installed, i.e., data for which unit (flare, boiler etc.) is measured by each particular meter.</p> <p>CAR25 The electricity generation by the project (B46 parameter) is measured with power meter as per the revised monitoring plan. This should be also indicated in the Table 7 of the MR.</p> <p>CL07 Please, clarify why "n.a" is stated in the column</p>	<p>CAR23 CAR24 CAR25 CL07 FAR01</p>	<p>OK OK OK OK This issue must be checked during the next verification</p>

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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		<p>"Range" for electricity meter (#10), whereas the range is indicated for electricity meter (#10a).</p> <p>FAR01</p> <p>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.</p>		
101 (c)	Are the evidence and records used for the monitoring maintained in a traceable manner?	<p>FAR02</p> <p>A documented instruction/decreed 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.</p>	FAR02	This issue must be checked during the next verification
101 (d)	Is the data collection and management system for the project in accordance with the monitoring plan?	Yes. The data collection and management system for the project is in accordance with the monitoring plan.	OK	OK
Verification regarding programs of activities (additional elements for assessment)				
102	Is any JPA that has not been added to the JI PoA not verified?	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

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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
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 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	N/A	N/A	N/A

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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	<p>technologies and/or measures used;</p> <ul style="list-style-type: none"> - The geographical location of each JPA; - The amounts of expected emission reductions of the JPAs being verified; - The number of JPAs for which emission reductions are being verified; - The length of monitoring periods of the JPAs being verified; and - The samples selected for prior verifications, if any? 			
107	Is the sampling plan ready for publication through the secretariat along with the verification report and supporting documentation?	N/A	N/A	N/A
108	Has the AIE made site inspections 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	N/A	N/A	N/A

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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	justification?			
109	Is the sampling plan available for submission to the secretariat for the JISC.s ex ante assessment? (Optional)	N/A	N/A	N/A
110	If the AIE learns of a fraudulently included JPA, a fraudulently monitored JPA or an inflated number of emission reductions claimed in a JI PoA, has the AIE informed the JISC of the fraud in writing?	N/A	N/A	N/A

Table 2 Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1	Summary of project participant response	Verification team conclusion
CAR01 It is stated in the MR that "the flare has been moved to the Coal Mine Nr.22 Kommunarskaya, JI0078 at 29/10/2010". However, decommissioning of the flare was not envisaged in the registered PDD. Please, provide detailed description and	Item 92	Response #1: The main reason for the decommissioning of the flare was that coal extraction on the mine has reduced and accordingly the methane amount also has reduced. As the unit stood idle it was decided to demount it. This is temporary decision and in summer 2011	Conclusion on response #1: The clarification regarding flare return must be provided in the MR. Conclusion on

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<p>justification of all changes occurred as per paragraph 6 of the <i>Procedures Regarding Changes During Project Implementation, Version 1</i>. Please, provide confirmation that all conditions mentioned in the paragraph 7 of the above mentioned document are still met by the project. Please, provide evidences that the changes introduced do not affect the project's additionality.</p>		<p>flare will be returned on site (after stopping of the winter boilers), so additionality is not affected. Also this change meet the following conditions:</p> <ul style="list-style-type: none"> - the physical location of the project has not changed; - the emission sources have not changed; - baseline scenario has not changed; - this change is consistent with the JI specific approach or CDM methodology. <p>Response #2: The MR has been extended.</p>	<p>response #2: MR was checked. The issue is closed.</p>
<p>CAR02 Please, provide comparison of the planned in the PDD and actually achieved values of emission reductions and explain a deviation.</p>	Item 92	<p>Response #1: The comparison has been included under D.3.1 of the MR. The lower utilization is due to the significantly lower gas amount produced by the coal mine. Starting with the winter 2009/2010 the available utilizable CMM amount has significantly fallen down. The reason is a change to a new coal seam, which has surprisingly only very low CH₄ concentration. Consequently the CH₄-utilisation decreased.</p> <p>Response #2: The MR has been corrected</p>	<p>Conclusion on response #1: Please, provide name of the column with percentage, as it is not obvious it is the percentage of achievement or percentage of deviation. Conclusion on response #2: MR was checked. The issue is closed.</p>
<p>CAR03 The information concerning time of operation of winter and summer boiler</p>	Item 92	<p>Response #1: Changes have been made in MR. The documented evidences are attached:</p>	<p>Conclusion on response #1: It is stated in the</p>



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<p>houses is missing in the MR. Moreover it was observed during site visit that the same boiler house monitoring point (set of meters) is used in the both boiler houses. Please, add appropriate information to the MR and provide corresponding documented evidence.</p>		<p>SG-1 - Conversion to summer boilers.pdf SG-2 - Monitoring system conversion to summer boilers.pdf SG-3 - Conversion to winter boilers.pdf SG-4 - Monitoring system conversion to winter boilers.pdf</p> <p>Response #2: During the period the monitoring system didn't work and the emissions weren't taken into account. The MR has been extended.</p> <p>Response #3: The MR has been extended in section B.4 (page 27).</p>	<p>documents provided that the automatic monitoring system in the winter boiler house worked until 19/04/2010. At the same time the monitoring system in the summer boiler house was commissioned on 06/06/2010. Please, clarify how the monitoring was occurred within the period 19/04/2010 - 06/06/2010. (The same should be clarified for the period 06/10/10 – 11/10/10)</p> <p>Conclusion on response #2: Please, clearly specify what changes (concerning the monitoring system shutdown) were made in the MR (please,</p>
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			specify the page). Conclusion on response #3: MR was checked. The issue is closed.
CAR04 It was observed that the upgraded boiler #3 was fired with coal within the monitoring period. However, this information is absent in the MR. Please, make corresponding corrections. Please, clarify if the heat produced by this boiler was accounted in the ERUs calculating.	Item 92	Response #1: The heat meter B-2, which should be connected to boiler #3 produced no reasonable data within the period. Actually zero is taken into account as produced heat amount for B-2. Response #2: The MR has been extended.	Conclusion on response #1: This information is still not included in the MR. Please, add it to the MR. Conclusion on response #2: MR was checked. The issue is closed.
CAR05 The information concerning data acquisition system disturbance in April 2010 is missing in the section C.4. of the MR. Please, add appropriate information and provide records concerning troubleshooting procedures.	Item 95 (a)	Response #1: From 01.04.2010 to 20.04.2010 no plausible data have been recorded for the CMM flow amount of the CHP unit. The pressure difference meter of the CHP was malfunctioning. For simplification the CH ₄ flow data for the complete month April have been recalculated using the produced power amount. Service report is attached: SG-5 - Report of meter correction.pdf Response #2: The information has been included in the section B.4 of the MR.	Conclusion on response #1: This information is still not included in the in the section C.4 of the MR. Please, add it to the MR. Conclusion on response #2: MR was checked. The issue is closed.

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<p>CAR06 As per the revised monitoring plan and determined PDD: "Should a new officially approved standardized baseline for Ukraine be adopted, the baseline carbon emission factor will be changed accordingly". Considering this, the baseline carbon emission factor approved in Ukraine (http://www.neia.gov.ua/nature/doccatalog/document?id=126006) must be used for ERUs calculating in 2010.</p>	Item 95 (c)	<p>Response #1: MR, RMP and ER-Table have been corrected. The value of 1.067 t CO₂eq/MWh has been taken into account. (For the complete period incl. 2011) Response #2: A value of 1.063 t CO₂eq/MWh has been taken into account for 2011.</p>	<p>Conclusion on response #1: Please, note that emission factor used is applicable only for 2010 and can not be used to calculate ERUs for 2011. Please, take this into account. Conclusion on response #2: MR, RMP and ER-Table were checked. The issue is closed.</p>
<p>CAR07 Please, make consistent format of numbers throughout the MR (pay attention to using of commas and full stops).</p>	Item 95 (d)	<p>Response #1: Changes have been made in MR. Response #2: The MR has been corrected.</p>	<p>Conclusion on response #1: The format of numbers indicating the amount of ERUs and emissions (see section D.3) is still not consistent with the format of other numbers. Conclusion on response #2: MR was checked. The issue is</p>

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			closed.
CAR08 The emission reductions (indicated in the section D.3. of the MR) for the sub-periods indicated in the MR are not consistent with the relevant values of baseline and project emissions. Please, correct.	Item 95 (d)	The MR has been corrected.	MR was checked. The issue is closed.
CAR09 Please, add to the MR values of project and baseline emissions and emission reduction by sources [as in the section E of the PDD].	Item 95 (d)	The MR has been extended.	MR was checked. The issue is closed.
CAR10 It is stated in the sections B.2.2. - B.2.4. that variables are "calculated using formulae from the PDD". However, reference to the revised monitoring plan must be indicated instead. Please, note that exact and traceable references to the formulae used must be indicated.	Item 95 (d)	The MR has been corrected.	MR was checked. The issue is closed.
CAR11 The data unit for the parameter P25 is missing in the Table 7. Please, correct.	Item 95 (d)	The MR has been corrected.	MR was checked. The issue is closed.
CAR12 In the section Table 7 of the MR the information indicated for GEN _{EPG} does not correspond to the data indicated in	Item 95 (d)	The MR has been corrected.	MR and the revised Monitoring Plan were checked. The issue is closed.

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the section A.3.4 of the Annex 3 and the revised monitoring plan. Please, make corresponding corrections to provide consistency.			
CAR13 "Method1 measured, method2" is referred to in the Table 7 of the MR for B47 parameter. Please, clarify this information and provide clear and traceable reference.	Item 95 (d)	The MR has been corrected.	The issue is closed based on due amendments made in the MR.
CAR14 For the parameters MD_{EPG} , MM_{CHP} , $MD_{HEAT,VAH}$, Eff_{CHP} , and B46 GEN clear sources of data or formulae used for their calculation must be stated in the Table 7 and Table 8 of the MR.	Item 95 (d)	The MR and the RMP have been corrected.	MR and the revised Monitoring Plan were checked. The issue is closed.
CAR15 In the Revised Monitoring Plan, please, list all the revisions and changes compared to the original monitoring plan . Please, 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	Item 99 (b)	The RMP has been extended.	The issue is closed based on due amendments made in the Revised Monitoring Plan.

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establishment of monitoring plans.			
CAR16 The references to Annex 3 (page 2) and Annex 3.1 (page 12) in the Revised Monitoring Plan version 1 dated 7/03/2011 are irrelevant as the document does not contain these Annexes.	Item 99 (b)	The RMP has been corrected.	The Revised Monitoring Plan was checked. The issue is closed.
CAR17 In the sections D.1.1.1 and D.1.1.3 (column "Comment") of the Revised Monitoring Plan, please, provide the exact and traceable references to the formula used for calculation of the parameters P1-P5, P9-P11, $MD_{HEAT, VAH}$, MD_{EPG} , MM_{CHP} , Eff_{CHP} , and estimation of Eff_{EPG}	Item 99 (b)	The RMP has been corrected.	The Revised Monitoring Plan was checked. The issue is closed.
CAR18 For some parameters in the sections D.1.1.1 and D.1.1.3 IPCC is indicated as the source of data. Please, provide the exact reference in the Monitoring Plan.	Item 99 (b)	The reference "IPCC" has been taken from the original ACM0008 text. The reference has been changed to ACM0008/IPCC.	The Revised Monitoring Plan was checked. The issue is closed.
CAR19 For parameter P16, please, indicate data units in the section D.1.1.1.	Item 99 (b)	The RMP has been corrected.	The Revised Monitoring Plan was checked. The issue is closed.
CAR20 Some inconsistency was indicated in the Revised Monitoring Plan and the MR	Item 99 (b)	The MR has been corrected.	The Revised Monitoring Plan and MR were checked. The

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<p>which relates to the P17 parameter: "Hand readings from the internal counter of the units" - Revised Monitoring Plan. "Calculated using formulae from the PDD" – MR (page 21) Please, correct/clarify.</p>			issue is closed.
<p>CAR21 The data units must be indicated in the section D.1.1.1 of the revised monitoring plan for P19, P23, P25 parameters.</p>	Item 99 (b)	The RMP has been corrected.	The Revised Monitoring Plan was checked. The issue is closed.
<p>CAR22 Two different methods were used to monitor MM_{CHP} parameter: method of direct measurements and method of calculation. These algorithms must be reflected in the Revised Monitoring Plan (for a case when method of direct measurements will be unavailable in future). Please, define exactly in the Revised Monitoring Plan "steady operation period" for recalculation of efficiency of power generation in the cogeneration unit.</p>		<p>Response #1: The RMP has been corrected. The steady operation period lasted from 01/05/2010 until 15/03/2011 Response #2: The RMP has been corrected.</p>	<p>Conclusion on response #1: Please, pay attention that two different parameters (methane sent to cogeneration unit and methane sent to emergency power generator) are indicated as MM_{CHP}. Please, correct/clarify. Conclusion on response #2: The RMP was checked. The issue is closed.</p>
CAR23	101 (b)	Calibration of Sumystandartmetrology is obligatory	MR was checked. The

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<p>Some inconsistency was detected in the description of calibration procedure for 7e parameter (Table 5 of the MR): "Further calibrations made using procedures of Sumystandartmetrology. Calibrations made using procedures of Eco-Alliance OOO every two weeks". Please, correct/clarify. The date of last calibration must be also indicated for this parameter instead of "/03/201".</p>		<p>annual calibration for gas-analyzer while calibrations of Eco-Alliance are voluntary.</p>	<p>issue is closed.</p>
<p>CAR24 In the list of monitoring equipment used it should be clearly indicated for each gauge/parameter where it is installed, i.e., data for which unit (flare, boiler etc.) is measured by each particular meter.</p>	<p>101 (b)</p>	<p>Changes have been made in MR.</p>	<p>MR was checked. The issue is closed.</p>
<p>CAR25 The electricity generation by the project (B46 parameter) is measured with power meter as per the revised monitoring plan. This should be also indicated in the Table 7 of the MR</p>	<p>101 (b)</p>	<p>Changes have been made in MR and RMP. Parameter B46 GEN is calculated as sum of the power generation by cogeneration unit and emergency power generator.</p>	<p>CAR is closed based on due amendments made in the Revised Monitoring Plan and MR.</p>
<p>FAR01 The evidences (e.g., calibration certificates) of the due calibration status of all meters used in the project monitoring during the whole monitoring</p>	<p>101 (b)</p>	<p>An official instruction which prescribes the procedure of evidences storage will be provided for the next verification.</p>	<p>This issue must be checked during next verification.</p>

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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.			
FAR02 A documented instruction/decreed 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.	This issue must be checked during next verification.
CL01 Please, submit the results of NMHC analysis of the captured gas and the accreditation certification of the laboratory which undertakes the NMHC. Note, that lab's accreditation validity during the whole monitoring period must be confirmed.	95 (a)	NMHC analysis is attached: SG-6 - NMHC analysis.pdf MakNII's accreditation is attached: SG-7 - Licence MAKNII 2009-12-01 to 2012-10-30.pdf	The issue is closed based on the information provided in the documentation submitted.
CL02 <i>IPCC 1996</i> and <i>IPCC 2006</i> are indicated in the Table 6 of the MR as source of data for some parameters. Please, note that <i>IPCC 2006</i> is not approved by Ukraine. Please, clarify why <i>IPCC 1996</i> was not used as source of data for all	95 (b)	The MR has been corrected.	The issue is closed based on the corrections made in the MR.

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parameters.			
<p>CL03 The MR and the Revised Monitoring Plan state that the additional power consumption by cogeneration unit was fixed to 3.5% was not monitored. Please, provide solid evidence to confirm this fact.</p>	95 (d)	<p>Response #1 A comparison from the project Kommunarskaya, has been provided to BV as evidence. See <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 value is 2.6%, so that the value of 3.5%, which is taken into account at the SG project is conservative. Response #2: File <K22-M1_Measuring_Data_2010-04-01 to 2011-03-15.V2b.xls> has been attached: K22-M1_Measuring_Data_2010-04-01_to_2011-03-15.V2b.rar Two Machine Cards for cogeneration units from Scheglovskaya-Glubokaya and Kommunarskaya and an original Deutz data sheet are attached: Motor data files.zip In both Machine Cards the same motor type is specified TBG 620 V16K. The engine power is slightly different in every document, this is because the engine power output is not fixed, but depending on the input gas quality. As both engines are of the same type, also the energy</p>	<p>Conclusion on response #1: Please, provide evidence to confirm that power consumption by cogeneration unit is 3.5% for the present project. Alternatively provide any justification that the data for Kommunarskaya project can also be applied (in this case, please, provide the document referred in the response "K22-M1_Measuring_Data_2010-04-01 to 2011-03-15.V2b.xls"). Conclusion on response #2: The issue is closed based on the information provided in the documentation and</p>



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	<p>own consumption is the same.</p> <p>The real average value from SG is 2.6%, which is indeed far below (74%) of the chosen value of 3.5% .</p> <p>The single value of 4.7% for April 2010 is not a conservative value, but a random value caused through fluctuations in the recording system. While the DEIF values are recorded electronically, the ACTARIS values are recorded manually in journals. The record period is one time per day, especially in the beginning with bigger fluctuations in recording period. A glance into the Excel table <K22-M1-Measuring_Data_2010-04-01 to 2011-03-15.2b.xls> shows 4.7% for April, -0.1% for May and 4.1% for June. It is obvious, that a negative power consumption in May is caused by record errors in the journals, so that the values for April and June are too high and the value for May is too low. The average of these three values is 2.9% and reflects the average value of 2.6% pretty good.</p> <p>The average value of 2.6% for a period of 11.5 months reflects of course much better the reality than a single value for a shorter period. Keeping this in mind we have chosen the value of 3.5%. The SG value is shown only for justification that the real values of energy consumption are lower</p>	<p>observed onsite during site visit.</p>
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		than the chosen conservative value.	
CL04 Please, clarify how monthly values of methane concentration stated in the ERU calculation Excel file are determined.	95 (d)	Monthly averages have been calculated.	The issue is closed.
CL05 Please, provide clear reference/evidence to prove the value of HV_{CH_4} used.	99 (b)	DIN EN ISO 6976, http://www.din.de	The issue is closed.
CL06 It is stated in the Revised Monitoring Plan that $Eff_{HEAT, VAH}$ is measured. Some reference "VAH pass" is also indicted in the section D.1.1.1. Please, clarify the algorithm of $Eff_{HEAT, VAH}$ monitoring.	99 (b)	<p>Response #1 The RMP has been corrected.</p> <p>Response #2: The RMP has been corrected. Incorrect reference was made. Instead of "VAH Pass" "VAH technical report" should be used. The value is estimated.</p> <p>Response #3: The RMP has been corrected.</p>	<p>Conclusion on response #1: The clarification is still not provided in the Monitoring Plan. Please, clarify the reference "VAH pass". Please, clarify the algorithm of $Eff_{HEAT, VAH}$ monitoring (it is not clear if this parameter was measured or estimated by using "VAH pass").</p> <p>Conclusion on response #2: It is stated in the response #2 that the value is estimated. At the same</p>



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			<p>time RMP (p 18) indicates that Eff_{VAH} was measured. Please, make the information consistent. Conclusion on response #3: The revised monitoring plan was checked. The issue is closed.</p>
<p>CL07 Please, clarify why "n.a" is stated in the column "Range" for electricity meter (#10), whereas the range is indicated for electricity meter (#10a).</p>	<p>101 (b)</p>	<p>Changes have been made in MR. Parameter "range" is not applicable for these types of electricity meters.</p>	<p>The issue is closed based on the corrections made in the MR.</p>