VERIFICATION REPORT
GREEN GAS KRASNODON LLC

VERIFICATION OF THE
"POWER GENERATION FROM THE COAL MINE METHANE AT THE SUKHODOLSKAYA-VOSTOCHNAYA MINE"

INITIAL AND FIRST PERIODIC
(06/12/2010 – 31/12/2011)

REPORT NO. UKRAINE-VER/0419/2012
REVISION NO. 01

BUREAU VERITAS CERTIFICATION

Report No: UKRAINE-ver/0419/2012

VERIFICATION REPORT

Date of first issue: 25/10/2012	Organizational unit: Bureau Veritas Certification Holding SAS
Client: Green Gas Krasnodon LLC	Client ref.: Elena Ostrovskaya

Summary:

Bureau Veritas Certification has made the initial and first periodic verification of the JI project "Power generation from the coal mine methane at the Sukhodolskaya-Vostochnaya Mine", JI Registration Reference Number UA1000423, project of the Green Gas Krasnodon LLC located in Luhansk region, Ukraine, and applying JI specific approach with aspects of approved consolidated baseline and monitoring methodology ACM0008 (version 07), 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 Independent Entity of the monitored reductions in GHG emissions during defined verification period, and consisted of the following three phases: i) desk review of the monitoring report against 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 (CL, CAR and FAR), presented in Appendix A.

In summary, Bureau Veritas Certification confirms that the project is implemented as planned and described in approved project design documents. Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately. The monitoring system is in place and the project is generating GHG emission reductions. The GHG emission reductions are calculated accurately and without material errors, omissions, and misstatements, and the ERUs issued totalize 135, 411 tonnes of CO_2 equivalent for the monitoring period from 06/12/2010 to 31/12/2011.

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/0419/2012	Subject Group: JI	
Project title: "Power generation from the coal mine methane at the Sukhodolskaya-Vostochnaya Mine"		
Work carried out by: Kateryna Zinevych - Lead Verifier Olena Manziuk – Verifier Vasiliy Kobzar – Technical Specialist		
Work reviewed by: Ivan Sokolov – Internal Technical Reviewer Vladimir Kulish – Technical Specialist		
Work approved by: Ivan Sokolov – Operational Manager		
Date of this revision: 25/10/2012	Rev. No.: 01	Number of pages: 33

Bureau Veritas Certification Holding SAS

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1 INTRODUCTION

Green Gas Krasnodon LLC has commissioned Bureau Veritas Certification to verify the emissions reductions of its JI project “Power generation from the coal mine methane at the Sukhodolskaya-Vostochnaya Mine” (hereafter called “the project”) at Luhansk region, Ukraine.

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

1.1 Objective

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

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

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

1.2 Scope

The verification scope is defined as an independent and objective review of submitted monitoring report and the determined project design document including the project’s baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations.

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

Kateryna Zinevych
Team Leader, Bureau Veritas Certification Climate Change Lead Verifier

Olena Manziuk
Team member, Bureau Veritas Certification Climate Change Verifier

Vasiliy Kobzar
Team member, Bureau Veritas Certification Technical specialist

This verification report was reviewed by:

Ivan Sokolov
Bureau Veritas Certification Internal Technical Reviewer

Vladimir Kulish
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 Green Gas Krasnodon LLC and additional background documents related to the project design and baseline, i.e. country Law, Project Design Document (PDD), approved CDM methodology ACM0008 (version 07) 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 01 dated 21/03/2012, the Monitoring Report version 02 dated 15/05/2012, and project as described in the determined PDD.

2.2 Follow-up Interviews

On 04/04/2012 Bureau Veritas Certification during site visit performed interviews with project stakeholders to confirm selected information and to

resolve issues identified in the document review. Representatives of Green Gas Krasnodon LLC, Green Gas Germany GmbH, and Sukhodolskaya-Vostochnaya Mine were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
Sukhodolskaya-Vostochnaya Mine	➢ Organizational structure ➢ Responsibilities and authorities ➢ Training of personnel ➢ Quality management procedures and technology ➢ Implementation of equipment (records) ➢ Metering equipment control ➢ Metering record keeping system, database ➢ Monitoring procedure
Green Gas Krasnodon LLC, Green Gas Germany GmbH	➢ Baseline methodology ➢ Monitoring plan ➢ Monitoring report ➢ Deviations from PDD ➢ Emission reduction calculation

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 Verification Team 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.

The Verification Team will make an objective assessment as to whether the actions taken by the project participants, if any, satisfactorily resolve the issues raised, if any, and should conclude its findings of the verification.

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 Corrective Action Requests and Clarification Requests are stated, where applicable, in the following sections and are further documented in the Verification Protocol in Appendix A. The verification of the Project resulted in eleven Corrective Action Requests and one Clarification Requests.

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

3.1 Remaining issues and FARs from previous verifications

No FARs and remaining issues from determination were raised by verification team. Thus, the following section is not applicable.

3.2 Project approval by Parties involved (90-91)

Written project approval (LoA # 3534/23/7 dated 30/11/2011) by the host Party (Ukraine) has been issued by the State Environmental Investment Agency of Ukraine.

Also, the Ministry of Economic Affairs, Agriculture and Innovation (the Netherlands) has issued the Letter of Approval # 2010JI33 dated 29/11/2010 for this project acting as the Designated National Authority of that Party (refer to the section 5 References of this report).

The abovementioned written approval is unconditional.

The identified areas of concern as to project approval by Parties involved, project participants response and BV Certification's conclusion are described in Appendix A (refer to CAR01, CAR02, and CAR03).

3.3 Project implementation (92-93)

JI project "Power generation from the coal mine methane at the Sukhodolskaya-Vostochnaya Mine" main goal is to efficiently capture the coal mine gas (CMG) emitted on the Sukhodolskaya-Vostochnaya coal mine (Ukraine) and to destroy methane gas.

In most of the active mines in the Ukraine, CMM is partially or in total released to the atmosphere, despite the fact that it is well-known as harmful greenhouse gas with a global warming potential (GWP) of 21 t CO_2eq / t CH_4.

According to the PDD, the JI project activity is divided into two phases. The first phase of the project is the installation of flaring facility to begin reducing emission as quickly as possible. The second phase is the installation of methane-fuelled power generators to satisfy the mine's electrical base load consumption.

As a result of the JI project activity implementation for the monitoring period 06/12/2010 – 31/12/2011, the first phase has been fully implemented. A high temperature flare facility has been installed as a methane destruction scheme for surplus Coal Mine Methane (CMM) due to inherent fluctuations in CMM production. Commissioning of the flare facility took place in December 2010. Installation of the second phase is delayed because of the lack of finance as the drainage system of the Mine does not allow continuous gas supply which meets the quality required for CMM-fired gensets. An additional investment in new drainage system will be required to ensure continuous electricity production by both CMM-fired gensets through a stable gas supply by the Mine. As per the second phase, methane-fuelled power generators will be installed to satisfy the electrical consumption of the Mine, which will reduce electricity off take from the national grid.

Thus, during reported monitoring period 06/12/2010 – 31/12/2011 the JI project reduces methane emissions by utilizing the CMM which would have been otherwise vented into the atmosphere in the absence of this project.

The identified areas of concern as to project implementation, project participants response and BV Certification's conclusion are described in Appendix A (refer to CAR04 and CL01).

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

The monitoring occurred in accordance with the monitoring plan included in the PDD regarding which the determination has been deemed final. According to the PDD, selection of monitoring approach was made on the basis of approved consolidated baseline and monitoring methodology ACM0008 (version 07) and in compliance with "Guidance on criteria for baseline setting and monitoring". The project developer used JI specific approach with aspects of approved monitoring methodology ACM0008 for establishing the monitoring. Collection of all key parameters required to calculate greenhouse gas emissions is undertaken according to Operational and technical maintenance manual that provides a procedure of quality management for plant operational and technical maintenance.

For calculating the emission reductions key factors, such as amount of additional electricity consumption for capture and use or destruction of methane and further electricity consumption within project activity, amount of methane sent to flare, quality parameters of methane, concentration of methane in the exhaust gas of the flare in dry basis at normal conditions in the hour, temperature in the exhaust gas of the flare as well as risks associated with the JI project were taken into account, as appropriate.

Data sources used for calculating emission reductions, such as calibrated measurement equipment, the orders that establishes standardized emission factors for the Ukrainian electricity grid, IPCC, etc. are clearly identified, reliable and transparent. Automatic system registers the data related to methane. Recorded data are stored in the electronic database. In detail, registration of monitoring parameters at the plant is conducted in accordance with identified procedure of data collection. Plant management is performed by plant operators and engineers of Green Gas Krasnodon LLC; it includes operation and maintenance of project equipment, data monitoring, and gas management. JI project management is realized by consultants of Green Gas Germany GmbH. Consultants carry out internal training for plant managers and engineers, internal audits, troubleshooting measures if any is needed, and prepare reported documentation. Finally, plant operators and JI project consultants report to project participants such as PJSC Krasnodonvuhillya and Green Gas Ukraine Holdings B.V. In general, all roles and responsibilities connected with JI project at Green Gas Krasnodon LLC are established in accordance with procedure described in section D "Monitoring plan" of the registered PDD version 06 dated 25/04/2011.

Emission factors are selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice. According to the JI project documents, several emission factors are used for

calculation of emission reductions, such as carbon emission factor for combusted methane, carbon emission factor for combusted non methane hydrocarbons, carbon emission factor of electricity replaced by the project, and CO_2 emission factor of electricity used from the national grid.

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

The identified areas of concern as to compliance of the monitoring plan with the monitoring methodology, project participants response and BV Certification's conclusion are described in Appendix A (refer to CAR05, CAR06, CAR07, CAR08).

3.5 Revision of monitoring plan (99-100)

Monitoring plan of JI project "Power generation from the coal mine methane at the Sukhodolskaya-Vostochnaya Mine" was not revised during reported monitoring period 06/12/2010 – 31/12/2011. Thus, that section is not applicable.

3.6 Data management (101)

As a result of site visit, documents revision, and verification process at all verification team can conclude that the data and their sources, provided in monitoring report for the period 06/12/2010 – 31/12/2011, are clearly identified, reliable and transparent.

The implementation of data collection procedures is in accordance with the monitoring plan, including the quality control and quality assurance procedures. For instance, internal audits and control measures are conducted by JI project consultants from Green Gas Germany GmbH. These procedures are described in detailed in the registered project design document.

According to the documents on measurement equipments and its calibration certificates, the function of the monitoring equipment, including its calibration status, is in order.

During site visit initial monitoring documents were revised, and electronic database was checked and discovered as reliable and functional. Thus, the evidence and records used for the monitoring are maintained in a traceable manner.

The data collection and management system for the JI project "Power generation from the coal mine methane at the Sukhodolskaya-Vostochnaya Mine" is in accordance with the monitoring plan registered in the PDD.

The identified areas of concern as to data management, project participants response and BV Certification's conclusion are described in Appendix A (refer to CAR09, CAR10, and CAR11).

3.7 Verification regarding programmes of activities (102-110)

Not applicable.

4 VERIFICATION OPINION

Bureau Veritas Certification has performed the initial and first periodic verification of the JI project "Power generation from the coal mine methane at the Sukhodolskaya-Vostochnaya Mine" in Ukraine, which applies JI specific approach on the basis of approved consolidated baseline and monitoring methodology ACM0008 (version 07). The verification was performed in compliance with UNFCCC criteria and host country criteria and also on the criteria given to provide for consistent project operations, monitoring and reporting.

The verification consisted of the following three phases: i) desk review of the monitoring report against the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification report and opinion.

The management of Green Gas Krasnodon LLC 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 that is indicated in the final PDD version 06 dated 25/04/2011. The development and maintenance of records and reporting procedures in accordance with that plan, including the calculation and determination of GHG emission reductions from the project, is the responsibility of the management of the project.

Bureau Veritas Certification verified the project monitoring report version 02 for the reporting period as indicated below. Bureau Veritas Certification confirms that the project is implemented as planned and described in approved project design documents. Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately. The monitoring system is in place and the project is generating GHG emission reductions.

Bureau Veritas Certification can confirm that the GHG emission reduction is accurately calculated and is free of material errors, omissions, and 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 06/12/2010 to 31/12/2011

Baseline emissions	: 155, 849	tonnes of CO_2 equivalent
Project emissions	: 20, 437	tonnes of CO_2 equivalent
Emission Reductions (Dec. 2010 – Dec. 2011)	: 135, 411	tonnes of CO_2 equivalent

Emission reductions, project emissions and baseline emissions which are stated above are rounded by developers of the monitoring report to the whole figure (i.e., 1t) and are based on detailed calculations which are demonstrated in excel spreadsheet attached to the monitoring report.

5 REFERENCES

Category 1 Documents:
Documents provided by Green Gas Krasnodon LLC that relate directly to the GHG components of the project.

/1/ Monitoring report of JI project "Power generation from the coal mine methane at the Sukhodolskaya-Vostochnaya Mine" for the reported period 06/12/2010 to 31/12/2011, version 01 dated 21/03/2012;
/2/ Monitoring report of JI project "Power generation from the coal mine methane at the Sukhodolskaya-Vostochnaya Mine" for the reported period 06/12/2010 to 31/12/2011, version 02 dated 15/05/2012;
/3/ PDD of JI project "Power generation from the coal mine methane at the Sukhodolskaya-Vostochnaya Mine" version 06 dated 25/04/2011;
/4/ Letter of Approval # 2010JI33 dated 29/11/2010 of the JI project "Power generation from the coal mine methane at the Sukhodolskaya-Vostochnaya Mine" issued by the state of the Netherlands acting through the Ministry of Economic Affairs, Agriculture and Innovation;
/5/ Letter of Approval # 3534/23/7 dated 30/11/2011 of the JI project "Power generation from the coal mine methane at the Sukhodolskaya-Vostochnaya Mine" issue by the State Environmental Investment Agency of Ukraine;
/6/ Determination report # UKRAINE-det/0139/2010 of the JI project "Power generation from the coal mine methane at the Sukhodolskaya-Vostochnaya Mine" issued by BVC and dated 26/04/2011.

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

/1/ Commissioning Report of the flare facility type HOFGAS – CFM4c 25000 at the Sukhodolskaya-Vostochnaya Mine (Ukraine) dated 06/12/2010
/2/ Gas samples percentage composition, sampled 28/10/2011 at PJSC "Krasnodon Coal Company" Sukhodolskaya-Vostochnaya Mine dated 02/11/2011
/3/ Certificate on attestation of knowledge on conformity to the position of subforeman of gas objects equipment operation issued to Viacheslav Sopov dated 17/09/2011
/4/ Certificate on training course on the Inspection, maintenance and calibration of the HOFGAS – CFM4c 25000 flare at the

Sukhodolskaya-Vostochnaya Mine issued to Yaroslav Okhremenko dated 16/12/2010

/5/ Order # 0021 (54) dated 24/01/2011 on joint execution of services on flare unit pre-commissioning

/6/ Order # 626 dated 29/11/2011 on responsibility concerning works safe execution

/7/ Letter from company “Fotonica” to Stefan Decker from Green Gas Krasnodon about the procedure of equipment calibration dated 03/11/2010

/8/ Agreement # 1931110411/608-У/09-11/40 dated 20/09/2011 on degassing pipeline gas analysis of PJSC “Krasnodon Coal Company” mines

/9/ Statement dated 10/04/2011 on commissioning of object “Implementation of a high temperature flare facility (HT-flare facility) at the main site of Sukhodolskaya-Vostochnaya Mine”

/10/ Calibration report of residual gas analyzer dated 21/12/2011 (bottle no. 1947)

/11/ Calibration report of exhaust gas analyzer dated 21/12/2011 (bottle no. 53539)

/12/ Calibration report of exhaust gas analyzer dated 28/04/2011 (bottle no. 53539)

/13/ Calibration report of residual gas analyzer dated 18/04/2011 (bottle no. 1947)

/14/ Calibration report of exhaust gas analyzer dated 18/04/2011 (bottle no. 53539)

/15/ Calibration report of residual gas analyzer dated 17/01/2011

/16/ Calibration report of exhaust gas analyzer dated 12/01/2011 (bottle no. 75518)

/17/ Calibration report of residual gas analyzer dated 06/01/2011 (bottle no. 54182)

/18/ Calibration report of exhaust gas analyzer dated 27/12/2010 (bottle no. 75518)

/19/ Calibration report of residual gas analyzer dated 23/12/2010 (bottle no. 54182)

/20/ Report of malfunction dated 19/12/2011 of exhaust gas analyzer unit NUK/4009.22-2 (affected component BINOS 100 M)

/21/ Spare part replacement report 26/07/2011 (thermocouple TIR 81.61)

/22/ Spare part replacement report (thermocouple TIR 81.61). Period from 07/05/2011 to 11/05/2011.

/23/ Spare part replacement report 01/04/2011 (thermocouple TIR 81.61)

/24/ Photo – electricity meter SL 7000 Smart

/25/ Passport of SL 7000 Smart electricity meter. Calibration is dated III quarter of 2010

/26/ Operational and technical maintenance manual. Quality management for plant operational and technical maintenance.

Version 1.1 dated November 2010
/27/ Photo – BINOS 100 M
/28/ Photo – Flare facility
/29/ Protocol # 9 dated 26/04/2011 of Open Joint-Stock Company "Krasnodon Coal Company" stakeholders general meeting on changing the name of the company according to the national regulations to Public Joint-Stock Company "Krasnodon Coal Company"
/30/ Agreement # 1993 dated 23/08/2011 on providing metrological services between Luhanskstandartmetrolohiia State Enterprise and Green Gas Krasnodon LLC. Valid from 23/08/2012
/31/ Data of energy consumption for December 2010 and January – December 2011
/32/ Final inspection report of Cerabar M PIR 11.3 ser. # D303EF01020 dated 26/03/2010
/33/ Final inspection report of Cerabar M PIR 61.1 ser. # D303F001020 dated 26/03/2010
/34/ Calibration certificate of NGA1 CH4/O2 ser. # 1203002582540 (exhaust gas analyzer BINOS 100) dated 08/03/2010
/35/ Calibration certificate of ultrasonic gas flow meter type Flowsick ser. #10218543 dated 01/06/2010
/36/ Calibration certificate of ultrasonic gas flow meter type Flowsick ser. #10218544 dated 01/06/2010
/37/ Calibration certificate of NGA1 CH4/CO2/O2 ser. # 1203002582538 (raw gas analyzer BINOS 100) dated 08/03/2010
/38/ Certificate on training according to the training course "Operation and Calibration for Coal Mine Gas Utilization Projects under the Kyoto Protocol" issued to Yaroslav Okhremenko
/39/ Operating instructions of stationary gas analyzer NGA1 CH4/O2
/40/ Operating instructions of stationary gas analyzing system NGA CH4/CO2/O2
/41/ Certificate of conformity of SL 7000 electricity meter ser. # 53078983 dated 02/07/2010
/42/ Characteristics of HOFGAS – CFM4c High Temperature Flares dated 14/07/2010
/43/ Commissioning report of the flare facility at the Sukhodolskaya-Vostochnaya Mine dated 06/12/2010
/44/ Information note of calibration frequency of gas meters dated 11/04/2012
/45/ Certificate # UA-MI/1-1566-2004 dated 04/11/2004 on measuring equipment type authorization
/46/ Calibration certificate dated 29/03/2010, ser. # D3052A14152
/47/ Calibration certificate dated 29/03/2010, ser. # D3052914152
/48/ Information on electricity measurement equipment of the PJSC "Krasnodon Coal Company" Sukhodolskaya-Vostochnaya Mine
/49/ Instruction # 1052 of the National Electricity Regulation Commission of Ukraine dated 13/08/1998

/50/ Order # 43 on approval of CO_2 emissions specific value in 2010 dated 28/03/2011
/51/ Order # 75 on approval of CO_2 emissions specific value in 2011 dated 12/05/2011

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

/1/ Serhii Halushkin – chief engineer of the Sukhodolskaya-Vostochnaya Mine;
/2/ Yurii Haliiev – head of section of preventive measures and safety (PMS);
/3/ Andrii Melnykov - chief surveyor;
/4/ Borys Bortnikov – head assistant of section (PMS);
/5/ Nataliia Borodiana – lead engineer on environmental protection;
/6/ Iryna Zamkova – lead engineer of KYOTo at Sukhodolskaya-Vostochnaya Mine;
/7/ Yana Pushkar - – lead engineer of KYOTo at PJSC “Krasnodon Coal Company”;
/8/ Yaroslav Okhremenko - Plant manager, site engineer; Green Gas Krasnodon LLC
/9/ Viacheslav Sopov - Site manager; Green Gas Krasnodon LLC
Airat Khakimzianov- Green Gas Krasnodon LLC
/10/ Raj Kumar - Carbon Revenue Manager of Green Gas International B.V.;
/11/ Paola Guerrero Carrillo - Carbon Project Controller of Green Gas International B.V..

APPENDIX A: 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?	Letter of Approval (LoA) of the JI project "Power generation from the coal mine methane at the Sukhodolskaya-Vostochnaya Mine" was issued by the NFP of Ukraine (Host Party) as well as the Netherlands (Party B). They were provided to AIE which does not question its authenticity. Host Party (i.e., Ukraine) provided Letter of Approval # 3534/23/7 dated 30/11/2011 which was issued by the State Environmental Investment Agency of Ukraine. Also, Party B (i.e., the Netherlands) provided Letter of Approval # 2010JI33 dated 29/11/2010 that was issued by the Ministry of Economic Affairs, Agriculture and Innovation. Corrective Action Request 01 (CAR01). Pay your attention that the LoA from Host Party was issued by the *State* Environmental Investment Agency of Ukraine. Please, make amendment in the monitoring report (MR). Corrective Action Request 02 (CAR02). The	CAR01 CAR02	OK OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		regarded JI project was approved by the Netherlands. Letter of Approval was provided to the verification team during the site visit. Please, describe in the MR that the JI project was approved by Party B (i.e, the Netherlands). Corrective Action Request 03 (CAR03). State registration reference number of the JI project in the MR for the monitoring period 06/12/2010-31/12/2011.	CAR03	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?	Project activity has been implemented according to the project design document version 06 dated 25/04/2011 that is deemed final during determination.	OK	OK
93	What is the status of operation of the project during the monitoring period?	As per registered PDD, regarded JI project activity divided into two phases. Phase 1 has been fully implemented during the monitoring period 06/12/2010 – 31/12/2011. Flare facility was commissioned in December 2010. Installation of Phase 2 is delayed due to the lack of finance. Drainage system of the Mine does not allow continuous gas supply which meets the quality required for CMM-fired gensets.		OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		Additional investment is required for new drainage system to ensure continuous electricity production by both CMM-fired gensets through a stable gas supply by the Mine. The value of emission reductions achieved for the monitoring period 06/12/2010-31/12/2011 makes 135,426 t CO_2 equivalent and that one estimated in PDD – 254,228 t CO_2 equivalent. Corrective Action Request 04 (CAR04). Please, provide the documented evidence that confirms the date (i.e., December 2010) of commissioning of the flare facility that provided in the MR. Clarification Request 01 (CL01). Please, clarify why the value of emission reductions provided in the MR for 06/12/2010 – 31/12/2011 monitoring period differs from the value stated in registered PDD for the same period.	CAR04 CL01	OK OK
Compliance with monitoring plan				
94	Did the monitoring occur in accordance with the monitoring plan included in the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website?	The Monitoring System is in place and operational. Monitoring of GHG emission reductions occurred basically in accordance with the determined Monitoring Plan included in registered PDD. Data used for calculation of emissions reduction based on information that confirmed by PJSC "Krasnodon Coal Company" documents. Corrective Action Request 05 (CAR05). According	CAR05	OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		to the registered PDD, the JI specific approach on the basis of ACM0008 (version 7) methodology was selected for this JI project. Please, make corrections through the MR in compliance with the PDD version 06 dated 25/04/2011.		
95 (a)	For calculating the emission reductions or enhancements of net removals, were key factors, e.g. those listed in 23 (b) (i)-(vii) above, influencing the baseline emissions or net removals and the activity level of the project and the emissions or removals as well as risks associated with the project taken into account, as appropriate?	For calculating the emission reductions, the key factors listed in 23 (b) (i)-(vi) DVM, influencing the baseline emissions and the activity level of the project and the emissions as well as risks associated with the project were taken into account as follows (refer to PDD B): ✓ Flaring of CMM is not required by existing national regulations; ✓ There was no skilled and properly trained personnel for the operation and maintenance of the specific modern kind of technology before the project; ✓ The concentration of methane within VAM is too low; ✓ Present technology is only available for the gases with high calorific value, and CMM has low calorific value, etc.	OK	OK
95 (b)	Are data sources used for calculating emission reductions or enhancements of net removals clearly identified, reliable and transparent?	All the data sources used for calculating emission reductions are clearly identified, reliable and transparent. They are listed and classified in the MR Sections B.2.	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		As a fact, monitoring data are recorded automatically and stored in the electronic database of the plant. Relevant monitoring points, measurement equipment, and responsible persons are explicitly indicated in the MR Section B and on Figure B.2.1.1 and Figure B.2.1.2. Calculation of emission reduction was performed on the excel spreadsheet. The results are summarised in the MR Section D.		
95 (c)	Are emission factors, including default emission factors, if used for calculating the emission reductions or enhancements of net removals, selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice?	CO_2 emission factor from the grid and Carbon emission factor for combusted methane are used for calculation of emissions and emission reductions. Carbon emission factor for combusted methane was taken from the approved consolidated methodology ACM0008 (version 07). Corrective Action Request 06 (CAR06). Please, during calculation of emission reductions use the latest value of CO_2 emission factor from the grid that was estimated by NFP and stated in Order. Corrective Action Request 07 (CAR07). Please, provide documented evidence that justifies the class of electricity consumers of the plant.	CAR06 CAR07	OK OK
95 (d)	Is the calculation of emission reductions or enhancements of net	The calculation of emission reductions is based on conservative assumptions and the most plausible		OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	removals based on conservative assumptions and the most plausible scenarios in a transparent manner?	scenarios in a transparent manner. As a result of documents revision, all data connected with estimation of emission reduction are consistent through the Monitoring report and excel spreadsheets with calculation. Corrective Action Request 08 (CAR08). In the monitoring report provide summarized initial monitoring data that are included in emission reductions calculation.	CAR08	OK
Applicable to JI SSC projects only				
96	Is the relevant threshold to be classified as JI SSC project not exceeded during the monitoring period on an annual average basis? If the threshold is exceeded, is the maximum emission reduction level estimated in the PDD for the JI SSC project or the bundle for the monitoring period determined?	Not applicable	N/A	N/A
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?	Not applicable	N/A	N/A
97 (b)	If the determination was conducted on the basis of an overall monitoring plan, have the project participants submitted	Not applicable	N/A	N/A

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	a common monitoring report?			
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?	Not applicable	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?	No revisions are considered in the Monitoring report for 06/12/2010 – 31/12/2011 monitoring period.	N/A	N/A
99 (b)	Does the proposed revision improve the accuracy and/or applicability of information collected compared to the original monitoring plan without changing conformity with the relevant rules and regulations for the establishment of monitoring plans?	Not applicable	N/A	N/A
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 is in accordance with the determined monitoring plan and is an integral part of the operational	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	control and quality assurance procedures?	routine at the PJSC "Krasnodon Coal company" including quality control and quality assurance procedures. Measurement equipment, such as power meter, gas flow meter, pressure meter, continuous gas quality analyzer for CH_4, thermocouple, etc. Monitoring data of the JI project is monitored in compliance with scheduled frequency approved in the developed monitoring plan and monitoring procedure.		
101 (b)	Is the function of the monitoring equipment, including its calibration status, in order?	All monitoring equipment has calibration. It is calibrated with periodic frequency (certificate of each device states the calibration frequency) according to the national regulations. During site visit verifiers received and reviewed certificates and passports on calibration of all measurement equipment. Based on the documents revision, they were found satisfactory. Corrective Action Request 09 (CAR09). Provide serial numbers of all measurement equipment as well as calibration dates in the MR. Corrective Action Request 10 (CAR10). According to the manufacture requirements of power meter type SL 7000, it should be calibrated every 6 years. Please, correct the information in the MR. Corrective Action Request 11 (CAR11). Please,	CAR09 CAR10 CAR11	OK OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		provide documented evidence that indicates the calibration frequency of gas flow meter (frequency of 8 years is stated in the MR).		
101 (c)	Are the evidence and records used for the monitoring maintained in a traceable manner?	The evidence and records performed during the monitoring are maintained by responsible departments in a traceable manner.	OK	OK
101 (d)	Is the data collection and management system for the project in accordance with the monitoring plan?	The data collection and management system for the project is in accordance with the approved monitoring plan. Implementation of monitoring procedure was checked through the site visit, and concluded that the procedure is completely in accordance with the revised monitoring plan. This fact is also confirmed by documented evidences. Responsibilities of the persons are explicitly indicated in the Monitoring report.	OK	OK
Verification regarding programmes of activities (additional elements for assessment)				
102	Is any JPA that has not been added to the JI PoA not verified?	Not applicable	N/A	N/A
103	Is the verification based on the monitoring reports of all JPAs to be verified?	Not applicable	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?	Not applicable	N/A	N/A
104	Does the monitoring period not overlap	Not applicable	N/A	N/A

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	with previous monitoring periods?			
105	If the AIE learns of an erroneously included JPA, has the AIE informed the JISC of its findings in writing?	Not applicable	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 technologies and/or measures used; − The geographical location of each JPA; − The amounts of expected emission reductions of the JPAs being	Not applicable	N/A	N/A

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	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?	Not applicable	N/A	N/A
108	Has the AIE made site inspections of at least the square root of the number of total JPAs, rounded to the upper whole number? If the AIE makes no site inspections or fewer site inspections than the square root of the number of total JPAs, rounded to the upper whole number, then does the AIE provide a reasonable explanation and justification?	Not applicable	N/A	N/A
109	Is the sampling plan available for submission to the secretariat for the JISC ex ante assessment? (Optional)	Not applicable	N/A	N/A
110	If the AIE learns of a fraudulently	Not applicable	N/A	N/A

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	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?			

Table 2 Resolution of Corrective Action and Clarification Requests

Draft report clarification and corrective action requests by verification team	Ref. to checklist question in table 1	Summary of project participant response	Verification team conclusion
Corrective Action Request 01 (CAR01). Pay your attention that the LoA from Host Party was issued by the *State* Environmental Investment Agency of Ukraine. Please, make amendment in the monitoring report (MR).	90	The name of the agency has been corrected in the monitoring report.	The information in the MR was amended. Issue is closed.
Corrective Action Request 02 (CAR02). The regarded JI project was approved by the Netherlands. Letter of Approval was provided to the verification team during the site visit. Please, describe in the MR that the JI project was approved by Party B (i.e, the Netherlands).	90	The missing information, regarding the Letter of Approval from the investor Party B (i.e., the Netherlands), has been added under section A.2. of the MR.	Required information was described. So, issue is closed.

Corrective Action Request 03 (CAR03). State registration reference number of the JI project in the MR for the monitoring period 06/12/2010-31/12/2011.	90	The joint implementation (JI) project "Power Generation from the Coal Mine Methane at the Sukhodolskaya – Vostochnaya Mine" has been registered with the following details: Host Party: Ukraine Project identifier: UA1000423	Issue is closed.
Corrective Action Request 04 (CAR04). Please, provide the documented evidence that confirms the date (i.e., December 2010) of commissioning of the flare facility that provided in the MR.	93	The requested information regarding the date of commissioning of the flare facility is provided in an attached file with name “H10641 Commissioning report_CAR4”	The documented evidence was provided to the verification team. The document is in order and justifies the date of commissioning of the flare facility. Thus, issue is closed.
Corrective Action Request 05 (CAR05). According to the registered PDD, the JI specific approach on the basis of ACM0008 (version 7) methodology was selected for this JI project. Please, make corrections through the MR in compliance with the PDD version 06 dated 25/04/2011.	94	The monitoring report has been corrected in compliance with the registered PDD.	MR was improved. Issue is closed.

Corrective Action Request 06 (CAR06). Please, during calculation of emission reductions use the latest value of CO_2 emission factor from the grid that was estimated by NFP and stated in Order.	95 (c)	The spreadsheet has been updated with the new CO_2 emission factor for each year, 2010 and 2011. The new spreadsheet is submitted to the Auditors with the name "Krasnodon Spreadsheet ERU Version 2.2_CAR6".	The latest value of CO_2 emission factor was applied for emission reductions calculation. Excel spreadsheet was revised and found satisfactory. That is why issue is closed.
Corrective Action Request 07 (CAR07). Please, provide documented evidence that justifies the class of electricity consumers of the plant.	95 (c)	The requested information, regarding to the class of electricity consumed in the plant, is provided in two attached files called "Наказ No 43 Питом_викиди_2010р_CAR7", "Наказ No.75 Питом_викиди_2011р_CAR7" and "класс потребления электроэнергии".	All necessary documents were provided. Issue is closed.
Corrective Action Request 08 (CAR08). In the monitoring report provide summarized initial monitoring data that are included in emission reductions calculation.	95 (d)	A summary table has been included under section D.4. of the MR.	Required monitoring data were stated in the MR, and they correspond to the same ones from the Excel spreadsheet. Issue is closed.

Corrective Action Request 09 (CAR09). Provide serial numbers of all measurement equipment as well as calibration dates in the MR.	101 (b)	The missing information regarding the serial numbers as well as calibration dates has been added to the monitoring report in the table B.1.1.1.	Serial number of all monitoring equipment was indicated in the monitoring report. As a result of revision of documents on measurement equipment, the serial number of JI project devices indicated in the documents is in compliance with serial number of devices installed on place, and calibration status of all equipment is in order. Issue is closed.
Corrective Action Request 10 (CAR10). According to the manufacture requirements of power meter type SL 7000, it should be calibrated every 6 years. Please, correct the information in the MR.	101 (b)	The calibration frequency for the power meter type SL 7000 has been corrected for “6 years”.	Issue is closed.

Corrective Action Request 11 (CAR11). Please, provide documented evidence that indicates the calibration frequency of gas flow meter (frequency of 8 years is stated in the MR).	101 (b)	The requested information has been checked with the equipment supplier and they have confirmed that the calibration will be done every 3 years. The monitoring report has been corrected accordingly and the recommendation letter attached as "KNU_gas meter_recalibration HUT_CAR11".	The calibration frequency of gas flow meter was clarified and corrected in the MR. Documented evidence that confirms the calibration frequency of device is provided to the verification team and it is found satisfactory. Issue is closed.
Clarification Request 01 (CL01). Please, clarify why the value of emission reductions provided in the MR for 06/12/2010 – 31/12/2011 monitoring period differs from the value stated in registered PDD for the same period.	93	There is difference between the achieved emission reductions during this period, 135,411 tCO2e, and the value estimated in the PDD for the same period (254,228 t CO2e), since the amount of actual extracted CMM is less than the prediction in the PDD. Also such difference is due to some problems during the function of the plant in winter (frozen Pipelines) have made impossible to arrange the quantity/quality calculated in the PDD.	Issue is closed.