



**TÜV Rheinland (China) Ltd. (TÜV Rheinland)**

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# **VERIFICATION REPORT**

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**Verification of the  
Joint Implementation Large-scale Project  
“Utilization of Coal Mine Methane at the SE  
“Makeevugol”**

**ITL Project ID: UA1000523**

**Initial and first periodic verification:  
01/01/2008 – 30/09/2012**

**Report No. 01 998 9105072061 –VR1  
Revision No. 02**

**Customer: “SPA “Energometan” LLC**

## VERIFICATION REPORT

<u>Date of first issue:</u> 20.11.2012	<u>Project No.:</u> 01 998 9105072061 ITL Project ID: UA1000523
<u>Executor:</u> TÜV Rheinland (China) Ltd. (TÜV Rheinland)	<u>Organizational unit:</u> TÜV Rheinland Ukraine Ltd. Technical Competence Center
<u>Customer:</u> “SPA “Energometan” LLC	<u>Client ref.:</u> Makarenko Serhiy Vasyliovych

<p><u>Summary:</u>                  TÜV Rheinland (China) Ltd. (TÜV Rheinland) has performed the initial and first periodic verification of emission reductions generated by the JI project “Utilization of Coal Mine Methane at the SE “Makeevugol” (ITL Project ID UA1000523) for the period from 01/01/2008 till 30/09/2012.</p> <p>The purpose of verification is to assess the reductions in anthropogenic emissions by sources or enhancements of anthropogenic removals by sinks generated by a JI project and reported by the project participants through the monitoring report in accordance with paragraph 37 of the JI guidelines.</p> <p>In our opinion, the emission reductions reported through the monitoring report, version 2.0 dated 02/11/2012 are fairly stated and are accurate and free of material errors, omissions, or misstatements.</p> <p>During the monitoring period the project has been implemented in accordance with the project design document version 2.0 dated 20/09/2012.</p> <p>The emission reductions were calculated correctly on the basis of the approved monitoring plan contained in the project design document version 2.0 dated 20/09/2012.</p> <p>TÜV Rheinland (China) Ltd. (TÜV Rheinland) is able to verify that the emission reductions generated by the JI project “Utilization of Coal Mine Methane at the SE “Makeevugol” for the period from 01/01/2008 till 30/09/2012 amount to 1 343 523 tonnes of CO<sub>2</sub> equivalent.</p>
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<u>Report No.:</u> 01 998 9105072061 – VR1	<u>Subject Group:</u> JI
<u>Project title:</u> “Utilization of Coal Mine Methane at the SE “Makeevugol”	
<u>Work carried out by:</u> Dr. Valery Yakubovsky – Team Leader, Technical Competence Center Director Dr. Yuriy Kononov – Technical Expert; Ganna Zadnipriana – Auditor; Dmytro Rakovych – Trainee	
<u>Work verified by:</u> Dr. Lixin Li – Technical Reviewer	
<u>Verification Report approved by:</u> Dr. Manfred Brinkmann – Accredited Independent Entity Operational Manager	
<u>Date of this revision:</u> 15/01/2013	<u>Revision No.:</u> 02
<u>Number of pages:</u> 35	

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## Abbreviations

CO <sub>2</sub>	Carbon Dioxide
AIE	Accredited Independent Entity
ANE	Authorized national entity
BE	Baseline Emission
CAR	Corrective Action Request
CL	Clarification Request
DR	Document Review
EIA	Environmental Impact Assessment
ERU	Emission Reduction Unit
FAR	Forward Action Request
GHG	Greenhouse Gas
I	Interview
ITL	International Transaction Log
JI	Joint Implementation
JISC	Joint Implementation Supervisory Committee
LoA	Letter of Approval
MoV	Means of Verification
MP	Monitoring Plan
OSV	On Site Visit
PDD	Project Design Document
PE	Project Emissions
t	tonne
SS	Stakeholders survey
UNFCCC	United Nations Framework Convention on Climate Change

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## 1 VERIFICATION OPINION

TÜV Rheinland (China) has performed the initial and first periodic verification of the emission reductions generated by the JI project “Utilization of Coal Mine Methane at the SE “Makeevugol” (ITL Project ID: UA1000523) for the period from 01/01/2008 till 30/09/2012.

The project participants are responsible for the collection of data in accordance with the monitoring plan and the reporting of emission reductions generated by the project.

It is responsibility of TÜV Rheinland (China) Ltd. (TÜV Rheinland) to express an independent verification opinion – conclusion on the verified amount of emission reductions generated by the project and reported by the project participants through the monitoring report, version 2.0 dated 02/11/2012.

TÜV Rheinland (China) Ltd. (TÜV Rheinland) has assessed the monitoring report on the basis of the monitoring plan contained in the registered project design document version 2.0 dated 20/09/2012 and the monitoring report version 1.0 dated 12/10/2012.

The verification included the assessment of:

- project implementation in accordance with the project design document (PDD);
- compliance with the monitoring plan;
- calculation of emission reductions and expression of a conclusion with a reasonable level of assurance about whether the reported emission reductions data are accurate and free of material errors, omissions, or misstatements;
- quality and management of data and verification that reported emission reductions data is sufficiently supported by evidence.

TÜV Rheinland (China) Ltd. (TÜV Rheinland) verification approach draws on an understanding of the risks associated with reporting of GHG emission data and the controls in place to mitigate these. TÜV Rheinland (China) Ltd. (TÜV Rheinland) planned and performed the verification by obtaining evidence information and explanations that TÜV Rheinland (China) Ltd. (TÜV Rheinland) considers necessary to give reasonable assurance that reported emission reductions are fairly stated, accurate and free of material errors, omissions, or misstatements.

In TÜV Rheinland’s (China) Ltd. (TÜV Rheinland) opinion the emission reductions generated by the JI project “Utilization of Coal Mine Methane at the SE “Makeevugol” (ITL Project ID: UA1000523) for the period from 01/01/2008 till 30/09/2012 are fairly stated, accurate and

TÜV Rheinland (China) Ltd. (TÜV Rheinland)

Verification Report – “Utilization of Coal Mine Methane at the SE “Makeevugol”

free of material errors, omissions, or misstatements in the monitoring report, version 2.0 dated 02/11/2012.

The GHG emission reductions were calculated correctly on the basis of the registered project design document version 2.0 dated 20/09/2012.

TÜV Rheinland (China) (TÜV Rheinland) is able to verify that the emission reductions generated by the JI project “Utilization of Coal Mine Methane at the SE “Makeevugol” (ITL Project ID: UA1000523) for the period from 01/01/2008 till 30/09/2012 amount to 1 343 523 tonnes of CO<sub>2</sub> equivalent.



## 2 INTRODUCTION

Company “SPA “Energometan” LLC has commissioned TÜV Rheinland (China) Ltd. (TÜV Rheinland) to carry out the verification of the JI project “Utilization of Coal Mine Methane at the SE “Makeevugol” (ITL Project ID: UA1000523) (hereinafter “project”) for the period from 01/02/2008 till 30/09/2012. This report contains the findings from the verification and conclusion on the verified amount of emission reductions.

### 2.1 Objective

The verification is the periodic independent review and ex post verification by an Accreditation Independent Entity (AIE) of the monitored reductions in GHG emissions that have occurred as a result of a Joint Implementation (JI) project activity during a defined verification period.

The purpose of the verification is to assess the reductions in anthropogenic emissions by sources or enhancements of anthropogenic removals by sinks generated by a JI project and reported by the project participants through the monitoring report in accordance with paragraph 37 of the JI guidelines.

The objective of this verification was to verify emission reductions generated by the JI project “Utilization of Coal Mine Methane at the SE “Makeevugol” (ITL Project ID: UA1000523) for the period from 01/01/2008 till 30/09/2012.

TÜV Rheinland (China) Ltd. (TÜV Rheinland) is an Accredited Independent Entity by the Joint Implementation Supervisory Committee.

### 2.2 Scope

The scope of this verification is the assessment of:

- project implementation in accordance with the project design document (PDD);
- compliance with the monitoring plan, including the revision of the monitoring plan;
- calculation of emission reductions and expression of a conclusion with a reasonable level of assurance about whether the reported emission reduction data are accurate and free of material errors, omissions, or misstatements;
- quality and management of data and verification that reported emission reduction data is sufficiently supported by evidence.

The verification is not meant to provide any consulting towards the Client. However, stated requests for clarifications and/or corrective actions, forward action requests may provide input for corrective actions in order to provide for more accurate future monitoring and reporting.

## 2.3 JI Project Description

The brief information regarding the project activity is provided in table 1.

**Table 1 – JI project brief information**

<b>Project Parties involved:</b>	1. Ukraine (Host party). 2. Party 2
<b>Title of the project:</b>	“Utilization of Coal Mine Methane at the SE “Makeevugol”
<b>Type of JI activity:</b>	Large-scale
<b>ITL Project ID:</b>	UA1000523
<b>Baseline and monitoring methodology:</b>	JI specific approach
<b>Project entity participant:</b>	State Enterprise “Makeevugol”, 86157, Ukraine, Donetsk, Makiivka, Radyanska Square, 2
<b>Other project participants:</b>	
<b>Location of the project:</b>	Makiivka, Ukraine  Central site of coal mines of SE “Makeevugol”: CE “Mine named after V.M.Bazhanov” of SE “Makeevugol”; CE “Mine “Kholodna Balka” of SE “Makeevugol”; CE “Coal Mine Named after S.M. Kirov” of SE “Makeevugol”; CE “Mine “Chaikino” of SE “Makeevugol”
<b>Crediting period of the project:</b>	01/01/2008 – 31/12/2012
<b>Period verified in this report:</b>	01/01/2008 – 30/09/2012
<b>Period verified in previous verification report:</b>	Not applicable



The purpose of the proposed project is to reduce greenhouse gas emissions through capturing coal mine methane by degassing system and its using for heat production for the needs of mines of SE “Makeevugol” in Makiivka, Donetsk region, Ukraine. Thus, in accordance with project scenario, captured coal mine methane will be burned in order to obtain thermal energy and will partly replace coal from the mines, which would be used as fuel in the baseline scenario.

Baseline scenario provides continuation of existing situation, when captured coal mine methane after vacuum-pump station is thrown out in atmosphere, and the needs of mines in the thermal energy are met by burning fossil fuels (black coal) in boilers. At the same time there are large amounts of methane emissions as well as carbon dioxide emissions into the atmosphere that affects the ecological situation in the region. Mines boiler equipment is not modernized while there is low efficiency of thermal energy generation.

The proposed project provides reconstruction of the boiler equipment at the mines of SE “Makeevugol” for coal mine methane utilization (CMM). CMM will be burned for thermal energy production, which will replace the thermal energy produced from fossil fuels (coal) and thereby decrease greenhouse gas (GHG) emissions to the atmosphere and reduce consumption of fossil fuel (coal). Thermal energy will be used for the own needs of SE “Makeevugol”.

The project is environmentally and socially beneficial. Its realization causes less pollution than in case of baseline scenario as it reduces methane emissions from mines. Its implementation improves the quality of working environment and reduces negative health effects for the employees of mines. SE “Makeevugol” has all licenses and permits necessary for project implementation.

To achieve project purpose in 2005 development of project document for reconstruction of boiler equipment for work at CMM was initiated. Construction and installation works started in the second half of 2005, with preparation of premises and installation of auxiliary equipment. In mid-2005, installation of main production equipment started.

The project has been registered under national procedure as Track 1 JI project with the PDD version 2.0 dated 20/09/2012. The documentation on the project including the PDD, approval by the host Party, Determination report is available at:

<http://ji.unfccc.int/JIITLProject/DB/WXYH3RDKRRA9VE3MGP5YJS2WM/CF3I6/details>

### 3 METHODOLOGY

The verification process has been carried out using internal procedures of TÜV Rheinland (China) Ltd. (TÜV Rheinland). In order to ensure transparency, a Verification protocol (Annex A to Verification report) was customized for the project, according to the Annex to “Joint Implementation Determination and Verification Manual”, version 01. The Verification protocol shows, in a transparent manner, criteria (requirements) and results of verification.

The verification consists of the following three phases:

- I) a desk review of the monitoring report including analysis of the compliance of the monitoring plan with the monitoring methodology;
- II) follow-up interviews with project stakeholders including on site visit;
- III) the resolution of outstanding issues and the issuance of the final verification report and opinion.

The following subsections outline each step in more detail.

#### 3.1 Desk review

Project participants provided TÜV Rheinland (China) Ltd. (TÜV Rheinland) all the necessary documents for document review. The monitoring report version 1.0 dated 12/10/2012 was assessed as part of the verification. In addition, the project’s Project Design Document version 2.0 dated 20/09/2012 and project’s Determination Report No. 01 998 9105072061 – DR dated 25/09/2012 were also reviewed. Supporting documents, such as, acceptance certificates of coal products, electricity, work completion certificate, environmental impact assessments and expert opinions, etc. were available during on site visit.

The information and formulae provided in the monitoring report was compared with PDD and stated data sources.

To address TÜV Rheinland (China) Ltd. (TÜV Rheinland) corrective action and clarification requests, project participants revised the monitoring report and resubmitted it as version 2.0 dated 02/11/2012.

The verification findings presented in this report relate to the monitoring report version 2.0 dated 02/11/2012 and project as described in the PDD version 2.0 dated 20/09/2012.

The following tables outline the documentation reviewed during the verification. Documents provided by “SPA “Energometan” LLC that relate directly to the components of the project are indicated in table 2. Background documents related to the monitoring and/or methodologies employed in the monitoring or other reference documents are provided in table 3.

**Table 2 – Category 1 Documents**

No.	Title of the document
/1/	PDD “Utilization of Coal Mine Methane at the SE “Makeevugol” version 2.0 dated 20/09/2012 in Ukrainian.
/2/	PDD “Utilization of Coal Mine Methane at the SE “Makeevugol” version 2.0 dated 20/09/2012 in English.
/3/	Monitoring Report, version 1.0 dated 12/10/2012
/4/	Monitoring Report, version 2.0 dated 02/11/2012
/5/	GHG emission reduction calculation spreadsheet in Excel.
/6/	“Joint implementation determination and verification manual”, version 01, JISC.
/7/	“Guidance on criteria for baseline setting and monitoring”, version 03, JISC.
/8/	Letter of Approval by Ukraine for JI project “Utilization of Coal Mine Methane at the SE “Makeevugol” #3596/23/7 dated 23/11/2012
/9/	Written project approval by a Party involved (Estonia) #12-1/10545-2 dated 04.12.2012

**Table 3 – Category 2 Documents**

No.	Title of the document
/1/	Certificate of gas analyzer calibration TP 5501 #78-79 dated 12/01/2012
/2/	Certificate of gas analyzer calibration TP 5501 #52-53 dated 10/01/2011
/3/	Certificate of gas analyzer calibration TP 5501 #47-48 dated 11/01/2010
/4/	Certificate of gas analyzer calibration TP 5501 #82-83 dated 11/01/2009
/5/	Certificate of gas analyzer calibration TP 5501 #74-75 dated 10/01/2008
/6/	Certificate of gas analyzer calibration TP 5501 #69-70 dated 11/01/2007
/7/	Certificate of gas analyzer calibration TP 5501 #63-64 dated 11/01/2006
/8/	Certificate of gas analyzer calibration TP 2301 #63-62 dated 11/01/2012
/9/	Certificate of gas analyzer calibration TP 2301 # 37-38 dated 10/01/2011
/10/	Certificate of gas analyzer calibration TP 2301 # 73-74 dated 10/01/2010
/11/	Certificate of gas analyzer calibration TP 2301 # 55-56 dated 10/01/2009
/12/	Certificate of gas analyzer calibration TP 2301 # 94-95 dated 12/01/2008
/13/	Certificate of gas analyzer calibration TP 2301 # 42-43 dated 09/01/2007

No.	Title of the document
/14/	Certificate of gas analyzer calibration TP 2301 # 91-92 dated 12/01/2006
/15/	Certificate of gas analyzer calibration TP 230144 # 89-90 dated 10/01/2012
/16/	Certificate of gas analyzer calibration TP 230144 # 77-78 dated 10/01/2011
/17/	Certificate of gas analyzer calibration TP 230144 # 87-88 dated 11/01/2010
/18/	Certificate of gas analyzer calibration TP 230144 # 93-94 dated 12/01/2009
/19/	Certificate of gas analyzer calibration TP 230144 # 83-84 dated 10/01/2008
/20/	Certificate of gas analyzer calibration TP 230144 # 35-36 dated 09/01/2007
/21/	Certificate of gas analyzer calibration TP 230144 # 54-55 dated 10/01/2006
/22/	Certificate of gas analyzer calibration Mitron 5030i # 39-40 dated 10/01/2012
/23/	Certificate of gas analyzer calibration Mitron 5030i # 33-34 dated 10/01/2011
/24/	Certificate of gas analyzer calibration Mitron 5030i # 60-61 dated 11/01/2010
/25/	Certificate of gas analyzer calibration Mitron 5030i # 58-59 dated 12/01/2009
/26/	Certificate of gas analyzer calibration Mitron 5030i # 39-40 dated 08/01/2008
/27/	Certificate of gas analyzer calibration Mitron 5030i # 31-32 dated 09/01/2007
/28/	Certificate of gas analyzer calibration Mitron 5030i # 44-45 dated 10/01/2006
/29/	Contract #24/703 for the metrological works implementation (services) dated 28/03/2011
/30/	Protocol of harmonizing cost of works (services) to the contract #24/703 dated 28/03/2011
/31/	Contract #24/257 for the metrological works implementation (services) dated 09/02/2009
/32/	Protocol of harmonizing cost of works (services) to the contract #24/257 dated 09/02/2009
/33/	Contract #24/196/25 for the metrological works implementation (services) dated 02/02/2009
/34/	Contract #24/194/27 for the metrological works implementation (services) dated 02/02/2009

No.	Title of the document
/35/	Contract #24/400 for the metrological works implementation (services) dated 14/02/2011
/36/	Contract #24/401/48 for the metrological works implementation (services) dated 14/02/2011
/37/	Protocol of harmonizing cost of works (services) to the contract #24/48 dated 14/02/2011
/38/	Protocol of discrepancies to the contract #24/401/48 dated 14/02/2011
/39/	Contract #24/590/78 for the metrological works implementation (services) dated 14/03/2011
/40/	Additional Agreement to the Contract for the metrological works implementation (services) #24/401/48 dated 14/02/2011
/41/	Letter from SE “Donetskstandartmetrologiya” on conclusion of the contract #881/24-18 dated 02/02/2009
/42/	Information about the sufficiency of funds needed for conclusion of the contract #24/194/27 dated 02/02/2009
/43/	Letter from SE “Donetskstandartmetrologiya” on conclusion of the contract (sending copies) #881/24-18 dated 02/02/2009
/44/	Provisions of chief engineer of “Mine named after V.M.Bazhanov” dated 12/03/2012
/45/	Inside instruction of chief engineer of “Coal Mine Named after S.M. Kirov” dated 01/10/2011
/46/	Provisions on technical service at “Mine “Kholodna Balka” dated 25/04/2011
/47/	Inside instruction of chief engineer at “Mine “Chaikino”
/48/	Certificate of refitting at “Mine “Kholodna Balka”
/49/	Certificate of refitting at “Mine named after V.M.Bazhanov”
/50/	Certificate of refitting at “Mine “Chaikino” #01-07/1579 dated 07/08/2012
/51/	Certificate of refitting at “Coal Mine Named after S.M. Kirov”
/52/	Guidance on accounting production and use of methane-air mixture from degassing dated 16/12/2005
/53/	Certificate for volumes of degasified, utilized and emitted to the candle methane gas “Coal Mine Named after S.M. Kirov” for the period from 2006 to 2012
/54/	Certificate for volumes of degasified, utilized and emitted to the candle methane gas “Mine “Chaikino” for the period from 2006 to 2012
/55/	Certificate for volumes of degasified, utilized and emitted to the candle

No.	Title of the document
	methane gas “Mine “Kholodna Balka” for the period from 2006 to 2012
/56/	Certificate for volumes of degasified, utilized and emitted to the candle methane gas “Mine named after V.M.Bazhanov” for the period from 2006 to 2012
/57/	Scheme of installation of units for accounting methane “Mine “Kholodna Balka”
/58/	Scheme of installation of units for accounting methane “Mine named after V.M.Bazhanov”
/59/	Scheme of vacuum pumping station and boiler house at “Mine “Chaikino”
/60/	Scheme of installation of units for accounting methane at “Coal Mine Named after S.M. Kirov”
/61/	Certificate of the work implementation on technical refitting of degassing at “Mine “Kholodna Balka”
/62/	Certificate of the work implementation on technical refitting of degassing at “Coal Mine Named after S.M. Kirov”
/63/	Certificate of the work implementation on technical refitting of degassing at “Mine “Chaikino” #01-02/1576 dated 06/08/2012
/64/	Certificate of the work implementation on technical refitting of degassing at “Mine named after V.M.Bazhanov” #02/2187 dated 17/08/2012
/65/	Financial and economic indicators from “Mine “Kholodna Balka” to JI project
/66/	Financial and economic indicators from “Mine named after V.M.Bazhanov” to JI project
/67/	Financial and economic indicators from “Mine “Chaikino” to JI project
/68/	Financial and economic indicators from “Coal Mine Named after S.M. Kirov” to JI project
/69/	Certificate of attestation of Coal Chemistry Laboratory “Zhovtneva” #303 dated 27/02/2012
/70/	Calorific value of coal of GR grade of “Mine Butivska”
/71/	Certificate of commissioning equipment KIPi A “Mine “Chaikino” dated 16/10/2005
/72/	Certificate of commissioning boilers DKV-6.5/-13 #2 and #4 “Mine “Chaikino” dated 16/10/2005
/73/	Certificate of completion of works and commissioning boiler DKV-6.5/13 #2 “Mine “Chaikino” dated 15/10/2005
/74/	Certificate of completion of works and commissioning boiler DKV-6.5/13 #4



No.	Title of the document
	“Mine “Chaikino” dated 20/07/2005
/75/	Act of beginning of boilers operation #1-#4 of the boiler house at “Mine “Kholodna Balka” dated 30/12/2005
/76/	Act of completion of work on transfer to gaseous fuel at “Mine “Kholodna Balka” dated 20/11/2005
/77/	Act of acceptance of gas analyzers and flowmeter of accounting gas emissions at “Mine “Kholodna Balka” dated 15/10/2005
/78/	Method of capturing methane-air mixture
/79/	Average depth of purification works at the mines of SE “Makeevugol” for 2006-2011
/80/	Average depth of work conducting at SE “Makeevugol” for 2006-2011
/81/	Consumption of coal by production boiler houses at mines of SE “Makeevugol” in 2003-2005
/82/	Consumption of methane by production boiler houses at mines of SE “Makeevugol” in 2003-2012
/83/	Consumption of heat energy by production boiler houses at mines of SE “Makeevugol” in 2003-2012
/84/	Certificate #38 of gas analyzer calibration KAM-IUZ and #37 of gas analyzer calibration TP-2301 dated 10/01/2012
/85/	Certificate #32 of gas analyzer calibration KAM-IUZ and #31 of gas analyzer calibration TP -2301 dated 10/01/2011
/86/	Certificate #58 of gas analyzer calibration KAM-IUZ and #59 of gas analyzer calibration TP -2301 dated 11/01/2010
/87/	Certificate #57 of gas analyzer calibration KAM-IUZ and #56 of gas analyzer calibration TP -2301 dated 12/01/2009
/88/	Certificate #32 of gas analyzer calibration KAM-IUZ and #33 of gas analyzer calibration TP -2301 dated 08/01/2008
/89/	Certificate #30 of gas analyzer calibration KAM-IUZ and #29 of gas analyzer calibration TP -2301 dated 09/01/2007
/90/	Certificate #43 of gas analyzer calibration KAM-IUZ and #42 of gas analyzer calibration TP-2301 dated 10/01/2006
/91/	Certificate #80 of gas analyzer calibration TP-2301 dated 12/01/2012 and #54 dated 10/01/2011
/92/	Certificate #84 of gas analyzer calibration TP-2301 dated 11/01/2009 and #49 dated 11/01/2010

No.	Title of the document
/93/	Certificate #71 of gas analyzer calibration TP-2301 dated 11/01/2007 and #76 dated 10/01/2008
/94/	Certificate #65 of gas analyzer calibration TP-2301 dated 11/01/2006
/95/	Certificate #93 of gas analyzer calibration KAM-IUZ dated 12/01/2006
/96/	Certificate #44 of gas analyzer calibration KAM-IUZ dated 09/01/2007 and #96 dated 12/01/2008
/97/	Certificate #57 of gas analyzer calibration KAM-IUZ dated 11/01/2009 and #75 dated 10/01/2010
/98/	Certificate #64 of gas analyzer calibration KAM-IUZ dated 10/01/2012 and #39 dated 10/01/2011
/99/	Certificate #56 of gas analyzer calibration KAM-IUZ dated 10/01/2006
/100/	Certificate #37 of gas analyzer calibration KAM-IUZ dated 09/01/2007 and #85 dated 09/01/2008
/101/	Certificate #95 of gas analyzer calibration KAM-IUZ dated 12/01/2009 and #89 dated 11/01/2010
/102/	Certificate #79 of gas analyzer calibration KAM-IUZ dated 10/01/2011 and #91 dated 10/01/2012
/103/	Inside instruction of the chief of the site “Boiler house” at “Mine named after V.M.Bazhanov” dated 15/03/2012
/104/	Inside instruction of thermotechnics at “Mine “Kholodna Balka” dated 25/05/2009
/105/	Inside instruction of the chief of the site “Boiler house” at “Coal Mine Named after S.M. Kirov” dated 15/02/2010
/106/	Inside instruction of thermotechnics at “Mine “Chaikino” dated 11/01/2010
/107/	Certificate of gas analyzer calibration TP 5501 #78-79 dated 12/01/2012
/108/	Certificate of gas analyzer calibration TP 5501 #52-53 dated 10/01/2011
/109/	Certificate of gas analyzer calibration TP 5501 #47-48 dated 11/01/2010
/110/	Certificate of gas analyzer calibration TP 5501 #82-83 dated 11/01/2009
/111/	Certificate of gas analyzer calibration TP 5501 #74-75 dated 10/01/2008
/112/	Certificate of gas analyzer calibration TP 5501 #69-70 dated 11/01/2007
/113/	Certificate of gas analyzer calibration TP 5501 #63-64 dated 11/01/2006
/114/	Certificate of gas analyzer calibration TP 2301 #63-62 dated 11/01/2012
/115/	Certificate of gas analyzer calibration TP 2301 # 37-38 dated 10/01/2011

No.	Title of the document
/116/	Certificate of gas analyzer calibration TP 2301 # 73-74 dated 10/01/2010
/117/	Certificate of gas analyzer calibration TP 2301 # 55-56 dated 10/01/2009
/118/	Act of testing gas pipeline for density at “Mine named after V.M.Bazhanov” dated 29/06/2005
/119/	Act of testing gas pipeline for density at “Mine named after V.M.Bazhanov» dated 25/04/2005
/120/	Act of testing gas pipeline for density at “Mine named after V.M.Bazhanov” dated 05/12/2005
/121/	Act of commissioning vacuum pump installation VVN-2-150 at “Mine named after V.M.Bazhanov” dated 14/07/2005
/122/	Act of commissioning vacuum pump installation VVN-2-50 at “Mine named after V.M.Bazhanov” dated 05/05/2005
/123/	Act of acceptance into operation of pipeline at “Mine named after V.M.Bazhanov” dated 17/06/2005
/124/	Act of acceptance of work on refitting boilers at “Mine named after V.M.Bazhanov” dated 18/08/2005
/125/	Act of commissioning boiler house at “Mine named after V.M.Bazhanov” dated 10/10/2005
/126/	Act of repair and adjustment of control and measuring devices, gas analyzer “Mitron-Dreger” at “Mine named after V.M.Bazhanov” dated 12/09/2005
/127/	Act of commissioning control and measuring devices, gas analyzer at “Mine named after V.M.Bazhanov” dated 12/09.2005
/128/	Act of commissioning KIP and A at “Coal Mine Named after S.M. Kirov” dated 26/09/2005
/129/	Act on the completion of commissioning works for boiler DKV-6.5/13 at “Coal Mine Named after S.M. Kirov” dated 17/10/2005
/130/	Act of commissioning boiler DKV-6.5/13 at “Coal Mine Named after S.M. Kirov” dated 25/10/2005

### 3.2 Interviews with project stakeholders

TÜV Rheinland (China) Ltd. (TÜV Rheinland) performed interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Interviewed representatives of SE “Makeevugol” are summarized in Table 4. The main topics of the interviews are summarized in Table 5.

**Table 4 – Persons interviewed**

No.	Name	Organization	Position
/1/	Schutsky Leonid Boleslavovich	Chief Engineer of “Mine “Kholodna Balka”	State Enterprise “Makeevugol”
/2/	Tolstykh Pavlo Mykolayovich	Chief Engineer of “Mine “Chaikino”	State Enterprise “Makeevugol”
/3/	Vinnychuk Volodymyr Mykhailovich	Chief of the site of preventive maintenance on safety of “Mine “Kholodna Balka”	State Enterprise “Makeevugol”
/4/	Shkalenko Valentyna Borysivna	Ecologist of “Mine “Kholodna Balka”	State Enterprise “Makeevugol”
/5/	Makarenko Serhiy Vasyliovich	Director	“SPA “Energometan” LLC

**Table 5 – Interview topics**

No.	Date	Interviewed organization	Interview topics
/1/	22/10/2012	State Enterprise “Makeevugol”	<ul style="list-style-type: none"> <li>➤ Project implementation</li> <li>➤ Project conformity to legal norms</li> <li>➤ Technical equipment</li> <li>➤ Sustainable development issues</li> <li>➤ Monitoring system of the project</li> <li>➤ Staff training</li> <li>➤ Emergency preparedness</li> </ul>
/3/	22/10/2012	“SPA “Energometan” LLC	<ul style="list-style-type: none"> <li>➤ Baseline</li> <li>➤ Additionality</li> <li>➤ Crediting period</li> <li>➤ Monitoring plan</li> <li>➤ History of education</li> <li>➤ Management system</li> <li>➤ Environmental impact</li> <li>➤ Stakeholder comments</li> <li>➤ Approval by the host country</li> </ul>

### 3.3 Resolution of Clarification, Corrective and Forward Action Requests

Where TÜV Rheinland (China) Ltd. (TÜV Rheinland), 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:

- Corrective action request (CAR), requesting the project participants to correct a mistake that is not in accordance with the monitoring plan;
- Clarification request (CL), requesting the project participants to provide additional information for the AIE to assess compliance with the monitoring plan;
- 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 of the project resulted in 15 Corrective action requests and 04 Clarification requests.

TÜV Rheinland (China) Ltd. (TÜV Rheinland) made an objective assessment as to whether the actions taken by the project participants and presented in the Table 1 (Annex A to Verification report) satisfactorily resolve the raised issues and concluded its findings of the verification.

### 3.4 Internal Technical Review

The verification report including the verification findings underwent a technical review before requesting the publication according to paragraph 37 of the JI guidelines. The technical review was performed by an internal technical reviewer qualified in accordance with TÜV Rheinland (China) Ltd. (TÜV Rheinland) qualification scheme for JI project determination and verification.

### 3.5 Verification team

The verification team consists of the following personnel indicated in Table 6 below.

**Table 6 – Verification team**

<b>Name</b>	<b>Role</b>
Dr. Manfred Brinkmann	Accredited Independent Entity Operational Manager
Dr. Lixin Li	Technical Reviewer
Dr. Valery Yakubovsky	Team Leader
Dr. Yuriy Kononov	Technical Expert
Ganna Zadnipriana	Auditor
Dmytro Rakovych	Trainee



## 4 VERIFICATION FINDINGS

This section summarizes the findings from the verification of the emission reductions generated by the JI project “Utilization of Coal Mine Methane at the SE “Makeevugol” (ITL Project ID: UA1000523) for the period from 01/01/2008 till 30/09/2012.

### 4.1 Project approval by Parties involved

In accordance with paragraphs 90 - 91 of the DVM the assessment of this area focuses on whether at least one written project approval by a Party involved in the JI project, other than the host Party(ies), has been issued by the DFP of that Party. It also should be assessed whether the written project approvals are unconditional.

A written project approval by Ukraine (host Party) is available:  
#3596/23/7 dated 23/11/2012.

Written project approval by a Party involved in JI project, other than the host Party (Estonia) was obtained:  
#12-1/10545-2 dated 04.12.2012.

Written project approvals are available at:  
<http://ji.unfccc.int/JIITLProject/DB/WXYH3RDKRRA9VE3MGP5YJS2WMCF3I6/details>.

The written project approvals mentioned above are unconditional.

Identified problem areas for project approval, project participants' responses and conclusions of TÜV Rheinland (China) Ltd. (TÜV Rheinland) are described in Annex A to the Verification Report.

### 4.2 Project implementation

In accordance with paragraphs 92 - 93 of the DVM the assessment of this area focuses on whether the project has been implemented in accordance with the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website. The status of operation of the project during the monitoring period also should be assessed.

The project has been implemented in accordance with the PDD version 2.0 dated 20/09/2012 regarding which the determination has been deemed final. This JI project is registered as Track 1 project. The description of this project is available in section 2.3. of this Verification report.

The emission reductions generated by the JI project reported for the period from 01/01/2008 till 30/09/2012 amount to 1 343 523 tCO<sub>2</sub>e.

The verification team of TÜV Rheinland (China) Ltd. (TÜV Rheinland) can confirm, through the on-site visit that all physical features of the proposed JI project activity including data collecting and storage systems have been implemented, the project is completely operational and has been implemented as described in the registered PDD version 2.0 dated 20/09/2012.

Identified problem areas for project implementation, project participants' answers and conclusions of TÜV Rheinland (China) Ltd. (TÜV Rheinland) are described in Annex A to the Verification Report.

### **4.3 Compliance with monitoring plan**

In accordance with paragraphs 94 - 98 of the DVM the assessment of this area focuses on whether the monitoring occurred in accordance with the monitoring plan included in the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website.

The monitoring of the JI project occurred in accordance with the monitoring plan contained in the registered PDD version 2.0 dated 20/09/2012.

For calculating the emission reductions key factors influencing the baseline emissions as well as risks associated with the project were taken into account, as appropriate. For more detailed information, please, refer to the determined and registered PDD, version 2.0 dated 20/09/2012.

All data sources used for calculating emission reductions are indicated in table B.2.1 and B.2.3 of the Monitoring Report, version 2.0 dated 02/11/2012.

The emission factor used to calculate emission reductions are selected in accordance with the registered PDD version 2.0 dated 20/09/2012. The choice of this emission factor is appropriately justified in the PDD version 2.0 dated 20/09/2012 and in general accuracy and reasonableness are carefully balanced.

The calculation of emission reductions is done based on conservative assumptions and the most plausible scenarios in a transparent manner. The calculation of the baseline emissions is based on the JI specific approach in accordance with the registered PDD version 2.0 dated 20/09/2012.

The calculation of emission reductions is done by subtracting the project emissions from the baseline emissions. The detailed calculation of GHG emission reductions for chosen monitoring period (01/01/2008 – 30/09/2012) is provided in supporting documentation.

Identified problem areas for compliance with monitoring plan, project participants’ answers and conclusions of TÜV Rheinland (China) Ltd. (TÜV Rheinland) are described in Annex A to the Verification Report.

#### **4.4 Revision of monitoring plan**

If the project participants submitted to the AIE a revised monitoring plan, in accordance with paragraphs 99 - 100 of the DVM the assessment of this area focuses on whether the correct and complete justification for the proposed revision is provided, and 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.

There was no revision to the monitoring plan. The monitoring of the JI project occurred in accordance with the monitoring plan contained in the registered PDD, version 2.0 dated 20/09/2012.

Identified problem areas for compliance with monitoring plan, project participants’ answers and conclusions of TÜV Rheinland (China) Ltd. (TÜV Rheinland) are described in Annex A to the Verification Report.

#### **4.5 Data Management**

In accordance with paragraph 101 of the DVM the assessment of this area focuses on the quality of the information using standard auditing techniques provided in the monitoring report by assessing whether the data and their sources are clearly identified, reliable and transparent.

Data collection procedure is carried out in accordance with the monitoring plan, including the quality control and quality assurance procedures and has been checked by the verification team on site visit. The monitoring plan is presented in section D of the registered PDD version 2.0 dated 20/09/2012. The data and their sources, provided in monitoring report, are clearly identified, reliable and transparent.

The evidence and records used for the monitoring are maintained in a traceable manner. Verification team got an access to all necessary data on monitoring system and emission reductions and received necessary evidence on site visit.

The data collection and management system for the project is in accordance with the monitoring plan as described in the registered PDD version 2.0 dated 20/09/2012.

Identified problem areas for data management, project participants’ answers and conclusions of TÜV Rheinland (China) Ltd. (TÜV Rheinland) are described in Annex A to the Verification Report.

#### 4.6 Assessment of data and calculation of greenhouse gas emission reductions

The verification team of TÜV Rheinland (China) Ltd. (TÜV Rheinland) verified that all parameters are used correctly in the calculations, all results are verifiable and transparent, all assumptions are described and based on verifiable evidence and calculations are done in accordance with the pre-defined formulae from registered PDD version 2.0 dated 20/09/2012.

According to the Monitoring Report, version 2.0 dated 02/11/2012 and GHG emission reductions calculation spreadsheet in Excel format the emissions for the project scenario, emissions for the baseline scenario and emission reductions for chosen monitoring period (01/01/2008 – 30/09/2012) are provided in table 7 below.

**Table 7 – Results for Emission Reductions for Monitoring Period**

<b>Monitoring Period:</b>	<b>01/01/2008 – 30/09/2012</b>
Emissions for the project scenario:	145 893
Emissions for the baseline scenario:	1 489 416
Leakage:	-
Emission reductions:	1 343 523

#### 4.7 Remaining issues, CARs from previous verification

There was one pending issue remained from determination of the project:

FAR 01. The Project hasn't obtained Letters of Approval from the parties involved.

During verification project participant has provided to AIE Letter of Approval from Host country (Ukraine) #3596/23/7 dated 23/11/2012 and from the foreign country (Estonia) #12-1/10545-2 dated 04.12.2012.

The Forward Action Request (FAR 01) from determination has been closed.

**ANNEX A – VERIFICATION PROTOCOL****Table 1 – Requirements Checklist**

CHECKLIST QUESTION	DVM* paragr aph	Draft Conclusion	Action requested to project participan ts	Final Conclusion
<b>1. Project approvals by Parties Involved</b>				
1. 1. 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?	90	Yes, both written approvals are presented in the Monitoring Report	OK	OK
1. 2. Are all the written project approvals by Parties involved unconditional?	91	Yes, all the written project approvals by Parties involved are unconditional.	OK	OK
<b>2. Project implementation</b>				
2.1. 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?	92	Yes, the project has been implemented in accordance with the determined PDD.	OK	OK
2.2. What is the status of operation of the project during the monitoring period?	93	The project received a positive opinion by AIE and passed the final determination. Currently this project is at the stage of verification.  <b>CAR 01.</b> Please indicate the date of the decision-making on implementation of the project “Utilization of Coal Mine Methane at the SE “Makeevugol” under the Kyoto Protocol with involving JI mechanism.	<b>CAR 01.</b>	OK
<b>3. Compliance with monitoring plan</b>				
3.1. Did the monitoring occur in accordance with the monitoring plan included in the PDD regarding which the determination has been deemed final?	94	Yes, the monitoring occurred in accordance with the monitoring plan included in the determined PDD.	<b>CAR 02.</b> <b>CAR 03.</b> <b>CAR 04.</b>	OK

## VERIFICATION REPORT – “Utilization of Coal Mine Methane at the SE “Makeevugol”

CHECKLIST QUESTION	DVM* paragraph	Draft Conclusion	Action requested to project participants	Final Conclusion
		<p><b>CAR 02.</b> Please describe in detail the distribution gas pipelines transportation system and indicate main units of control and measuring devices.</p> <p><b>CAR 03.</b> Please indicate nominal capacity of vacuum pump stations and boiler units operated by the project.</p> <p><b>CAR 04.</b> It is stated in the MR that the amount of methane utilized in boilers is calculated based on the data, coming from the primary measuring devices. Describe in more detail the calculating method of this parameter.</p>		
<p>3.2. For calculating the emission reductions or enhancements of net removals, were key factors, e.g. those listed in 23 (b) (i)-(vii) of DVM*, influencing the baseline emissions or net removals and the activity level of the project and the emissions or removals as well as risks associated with the project taken into account, as appropriate?</p>	95 (a)	<p>Yes, all the key factors were taken into account for calculating the emission reductions or enhancements of net removals.</p> <p><b>CL 01.</b> Please provide an explanation on how to use the coefficient of fugitive methane emissions from extracting coal from the mines from national greenhouse gas inventories for the years 1999-2009.</p>	<b>CL 01.</b>	OK
<p>3.3. Are data sources used for calculating emission reductions or enhancements of net removals clearly identified, reliable and transparent?</p>	95 (b)	<p>Yes, all the data sources used for calculating emission reductions or enhancements of net removals are clearly identified, reliable and transparent.</p> <p><b>CAR 05.</b> It is stated in Section A.5.2 that the volumetric flow rate of gas depends on the pressure drop across on the narrowing device. This statement is false, or one that does not reflect all key factors that is collected for</p>	<b>CAR 05.</b> <b>CL 02.</b>	OK



## VERIFICATION REPORT – “Utilization of Coal Mine Methane at the SE “Makeevugol”

CHECKLIST QUESTION	DVM* paragraph	Draft Conclusion	Action requested to project participants	Final Conclusion
		calculating this parameter. <b>CL 02.</b> Please explain the term “Candle” and bring this term to the same type throughout the monitoring report.		
3.4. 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?	95 (c)	Emission factors, including default emission factors, used for calculating the emission reductions or enhancements of net removals, are selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice.	OK	OK
3.5. Is the calculation of emission reductions or enhancements of net removals calculated based on conservative assumptions and the most plausible scenarios in a transparent manner?	95 (d)	The calculation of emission reductions or enhancements of net removals are calculated based on conservative assumptions and the most plausible scenarios in a transparent manner  <b>CAR 06.</b> Achieved emission reductions in this monitoring report differ from the calculated ones in the PDD. Please justify this deviation, indicate cause and factors that have influenced this result.	<b>CAR 06.</b>	OK
<b>4. Applicable to JI SSC projects only</b>				
4.1. 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.	96	Not applicable	OK	OK
<b>5. Revision of monitoring plan</b>				

CHECKLIST QUESTION	DVM* paragr aph	Draft Conclusion	Action requested to project participan ts	Final Conclusion
<b>Applicable only if monitoring plan is revised by project participants</b>				
5.1. Did the project participants provide an appropriate justification for the proposed revision?	99 (a)	Not applicable	OK	OK
5.2. 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?	99 (b)	Not applicable	OK	OK
<b>6. Data management</b>				
6.1. Is the implementation of data collection procedures in accordance with the monitoring plan, including the quality control and quality assurance procedures?	101 (a)	The implementation of data collection procedures is in accordance with the monitoring plan, including the quality control and quality assurance procedures.  <b>CAR 07.</b> Please indicate all Third parties of the project in Section B.1.4.	<b>CAR 07.</b>	OK
6.2. Is the function of the monitoring equipment, including its calibration status, is in order?	101 (b)	Monitoring equipment is functioning properly; calibrations were performed in accordance with the technical regulations of the Host Party.  <b>CAR 08.</b> It is stated in the Figure 1 that among the control and measuring equipment differential pressure gauge is installed. This device is not specified among the monitoring equipment. Please include differential pressure gauge to the list of monitoring equipment and explain its applicability.  <b>CAR 09.</b> Please bring the font in the monitoring report to the same size and correct grammatical errors.	<b>CAR 08.</b> <b>CAR 09.</b>	OK

## VERIFICATION REPORT – “Utilization of Coal Mine Methane at the SE “Makeevugol”

CHECKLIST QUESTION	DVM* paragraph	Draft Conclusion	Action requested to project participants	Final Conclusion
6.3. Are the evidence and records used for the monitoring maintained in a traceable manner?	101 (c)	<p>The evidence and records used for the monitoring are maintained in a traceable manner.</p> <p><b>CAR 10.</b> In Tables 6-7 of this monitoring report calculating method is incorrectly indicated. Please correct form of the table.</p> <p><b>CAR 11.</b> In the monitoring report it is stated that leakage from extraction at the mine Butivska is not significant. Please provide clear and accurate information about leakage under the project.</p> <p><b>CL 03.</b> Please explain if procedures aimed at controlling and assessing the density of gas pipelines to avoid emergency situation are conducted.</p>	<b>CAR 10.</b> <b>CAR 11.</b>	OK
6.4. Is the data collection and management system for the project in accordance with the monitoring plan?	101 (d)	<p>Implemented data collection and management system is in accordance with the monitoring plan, as described in the PDD determination of which is considered to be final.</p> <p><b>CAR 12.</b> Please indicate if there was replacement of any project equipment during the monitoring period.</p> <p><b>CAR 13.</b> Please provide detailed description of responsibilities of heating engineer, mechanic, ecologist and Chief of PW on AP, as well as chief engineer mentioned in Section B.2.</p> <p><b>CAR 14.</b> Please add in the MR information on placing</p>	<b>CAR 12.</b> <b>CAR 13.</b> <b>CAR 14.</b> <b>CL 04.</b> <b>CL 05.</b>	OK

## VERIFICATION REPORT – “Utilization of Coal Mine Methane at the SE “Makeevugol”

CHECKLIST QUESTION	DVM* paragraph	Draft Conclusion	Action requested to project participants	Final Conclusion
		<p>measuring points (nodes) under the project.</p> <p><b>CL 04.</b> Please explain how concentration of methane in technological premises (VPS, boiler house) is controlled. What preventive measures are implemented to prevent the risk of explosion of air-methane mixture and gas emissions into the atmosphere.</p> <p><b>CL 05.</b> Please provide information on organization or department of the enterprise, which conducts the certification of workers knowledge, who serve degassing system.</p>		

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**Table 2 - Resolution of CARs, CLs and FARs**

No.	Type of request	Observation	Ref. to checklist question in table 1	Summary of project owner response	Verification team conclusion
1.	<b>CAR 01.</b>	Please indicate the date of the decision-making on implementation of the project “Utilization of Coal Mine Methane at the SE “Makeevugol” under the Kyoto Protocol with involving JI mechanism.	93	Date of the decision-making on implementation of the proposed project is signing Order No.216 dated 14/12/2004 by the director.	Issue is closed based on the corrections made
2.	<b>CAR 02.</b>	Please describe in detail the distribution gas pipelines transportation system and indicate main units of control and measuring devices.	94	Relevant information was presented in Section A.3. Please see revised MR, version 2.0.	Issue is closed based on the corrections made
3.	<b>CAR 03.</b>	Please indicate nominal capacity of vacuum pump stations and boiler units operated by the project.	94	Nominal capacity of boiler unit – 44 m <sup>3</sup> /min; Nominal capacity of VPS – 50 m <sup>3</sup> /min. Relevant explanation was made in Section A.3 of this MR. Please see revised MR, version 2.0.	Issue is closed based on the corrections made
4.	<b>CAR 04.</b>	It is stated in the MR that the amount of methane utilized in boilers is calculated based on the data, coming from the primary measuring devices. Describe in more detail the calculating method of this parameter.	94	Calculating method was presented. Please see revised MR, version 2.0, Section A.5.2.	Issue is closed based on the corrections made
5.	<b>CAR 05.</b>	It is stated in Section A.5.2 that the volumetric flow rate of gas depends on the pressure drop across on the narrowing device. This statement is false, or one that does not reflect all key factors that is collected for calculating this parameter.	95 (b)	For the calculation of volumetric flow of gas following key parameters under SPC are fixed: temperature, pressure, concentration. More detailed information is presented in Section B of this MR.	Issue is closed based on the corrections made

No.	Type of request	Observation	Ref. to checklist question in table 1	Summary of project owner response	Verification team conclusion
				<u>Please see revised MR, version 2.0.</u>	
6.	<b>CAR 06.</b>	Achieved emission reductions in this monitoring report differ from the calculated ones in the PDD. Please justify this deviation, indicate cause and factors that have influenced this result.	95 (d)	Relevant justification was provided. <u>Please see revised MR, version 2.0, Section A.7</u>	Issue is closed based on the corrections made
7.	<b>CAR 07.</b>	Please indicate all Third parties of the project in Section B.1.4.	101 (a)	Relevant information was provided. <u>Please see revised MR, version 2.0.</u>	Issue is closed based on the corrections made
8.	<b>CAR 08.</b>	It is stated in the Figure 1 that among the control and measuring equipment differential pressure gauge is installed. This device is not specified among the monitoring equipment. Please include differential pressure gauge to the list of monitoring equipment and explain its applicability.	101 (b)	Under the project only double-pipe liquid U-shaped differential pressure gauge are installed. Relevant correction was made. <u>Please see revised MR, version 2.0.</u>	Issue is closed based on the corrections made
9.	<b>CAR 09.</b>	Please bring the font in the monitoring report to the same size and correct grammatical errors.	101 (b)	Relevant correction was made. <u>Please see revised MR, version 2.0.</u>	Issue is closed based on the corrections made
10.	<b>CAR 10.</b>	In Tables 6-7 of this monitoring report calculating method is incorrectly indicated. Please correct form of the table.	101 (c)	Calculating method – “Estimated” was presented. <u>Please see revised MR, version 2.0.</u>	Issue is closed based on the corrections made
11.	<b>CAR 11.</b>	In the monitoring report it is stated that leakage from extraction at the mine	101 (c)	Relevant justification was presented in Section B.2.5 of this MR.	Issue is closed based on the corrections made



No.	Type of request	Observation	Ref. to checklist question in table 1	Summary of project owner response	Verification team conclusion
		Butivska is not significant. Please provide clear and accurate information about leakage under the project.		<u>Please see revised MR, version 2.0.</u>	
12.	<b>CAR 12.</b>	Please indicate if there was replacement of any project equipment during the monitoring period.	101 (d)	During the whole monitoring period, no replacements of equipment were done. Detailed information was provided in Section B.1.2 of this MR. <u>Please see revised MR, version 2.0.</u>	Issue is closed based on the corrections made
13.	<b>CAR 13.</b>	Please provide detailed description of responsibilities of heating engineer, mechanic, ecologist and Chief of PW on AP, as well as chief engineer mentioned in Section B.2.	101 (d)	Main functions and responsibilities of this staff were presented in Section C.1.1 of this MR. <u>Please see revised MR, version 2.0.</u>	Issue is closed based on the corrections made
14.	<b>CAR 14.</b>	Please add in the MR information on placing measuring points (nodes) under the project.	101 (d)	Relevant information was provided in Annex 2 of this MR. <u>Please see revised MR, version 2.0.</u>	Issue is closed based on the corrections made
15.	<b>CL 01.</b>	Please provide an explanation on how to use the coefficient of fugitive methane emissions from extracting coal from the mines from national greenhouse gas inventories for the years 1999-2009	95 (a)	National Inventory Report in Ukraine for 1990-2009 gives clear and transparent information on value of the coefficient of fugitive methane emissions during operation of mines. In the new edition of this source this coefficient has a numerical value, but is presented as a curve on the graph. This method of data	Issue is closed based on the corrections made

No.	Type of request	Observation	Ref. to checklist question in table 1	Summary of project owner response	Verification team conclusion
				demonstration does not allow accurate and transparent identifying appropriate value of the coefficient, but only shows trend of change of this indicator by years. Application of this source provides presence of high level of uncertainty that puts into doubt overall results of calculations of emission reductions.	
16.	<b>CL 02.</b>	Please explain the term “Candle” and bring this term to the same type throughout the monitoring report.	95 (d)	<p>Terms “switch” and “relief device” are used in the text of the monitoring report. Both terms have the same semantic loading. Term “switch” is used in mines and means a device (pipe and gate) through which the relief of surplus methane in the atmosphere occurs. For unambiguity this term has been replaced throughout the MR on the “relief device” to avoid inaccuracy in understanding the processes.</p> <p><u>Please see revised MR, version 2.0.</u></p>	Issue is closed based on the corrections made
17.	<b>CL 03.</b>	Please explain if procedures aimed at controlling and assessing the density of gas pipelines to avoid emergency	101 (c)	Yes, at the mines of SE “Makeevugol” periodic inspections of density of gas pipelines,	Issue is closed based on the corrections made

No.	Type of request	Observation	Ref. to checklist question in table 1	Summary of project owner response	Verification team conclusion
		situation are conducted.		<p>reduction gears, pumps and other stop valves are performed. Relevant information is presented in more detail in Section C.4 of this MR.</p> <p><u>Please see revised MR, version 2.0.</u></p>	
18.	<b>CL 04.</b>	Please explain how concentration of methane in technological premises (VPS, boiler house) is controlled. What preventive measures are implemented to prevent the risk of explosion of air-methane mixture and gas emissions into the atmosphere.	101 (d)	<p>Relevant explanation is presented in Section C.3.</p> <p><u>Please see revised MR, version 2.0.</u></p>	Issue is closed based on the corrections made
19.	<b>CL 05.</b>	Please provide information on organization or department of the enterprise, which conducts the certification of workers knowledge, who serve degassing system.	101 (d)	<p>At the mines of SE “Makeevugol” internal training system for performing staff is adjusted. Besides attestation of the workplace, the staffs pass regular checking of knowledge on the operation of degassing equipment and boiler units. SE “Makeevugol” carries out licensed activity on staff training and knowledge tests.</p> <p><u>Please see revised MR, version 2.0.</u></p>	Issue is closed based on the corrections made