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TÜV Rheinland Japan Ltd. (TÜV Rheinland)

DETERMINATION REPORT

Determination of the Joint Implementation Project "UTILIZATION OF COAL MINE METHANE AT THE SE "MAKIYIVVUHILLYA"

REPORT NO. 01 998 9105072061 – DR
REVISION NO. 02

Customer: LLC "Science and Production Association "ENERGOMETHANE"

DETERMINATION REPORT

Date of first issue: 14/08/2012	Project No.: 01 998 9105072061
Executor: TÜV Rheinland Japan Ltd. (TÜV Rheinland)	Organizational unit: TÜV Rheinland Ukraine Ltd. Technical Competence Center
Customer: LLC "Science and Production Association "ENERGOMETHANE"	Client ref.: Makarenko Serhiy Vasyliovych

Summary:

TÜV Rheinland Japan Ltd. (TÜV Rheinland) has performed a determination of the JI project "Utilization of Coal Mine Methane at the SE "Makiyivvuhillya" in Ukraine. The determination was performed on the basis of UNFCCC criteria and host country criteria and also on the criteria given to provide for consistent project operations, monitoring and reporting.

The determination serves as project design objective and complete assessment, and is a requirement for all JI projects. It consists of the following three phases: i) a desk review of the project design documents including analysis of the baseline justification and monitoring plan; ii) follow-up interviews with project stakeholders including on site visit; iii) the resolution of outstanding issues and the issuance of the final determination report and opinion. The overall determination, from Contract signing to Determination Report & Opinion, was conducted using TÜV Rheinland Japan Ltd. (TÜV Rheinland) internal procedures.

To address TÜV Rheinland Japan Ltd. (TÜV Rheinland) corrective action and clarification requests, company LLC "Science and Production Association "ENERGOMETHANE" revised the PDD and resubmitted it on 20/09/2012 as version 2.0.

The determination findings presented in this report relate to the large scale project as described in the PDD version 2.0 dated 20/09/2012.

In summary, it is TÜV Rheinland Japan Ltd. (TÜV Rheinland) opinion that the project complies with the criteria for baseline setting and monitoring methodology according to developed JI specific approach, and meets the relevant UNFCCC requirements for the JI and the relevant host country criteria.

Report No.: 01 998 9105072061 – DR	Subject Group: JI project
Project title: "Utilization of Coal Mine Methane at the SE "Makiyivvuhillya"	
Work carried out by: Dr. Valery Yakubovsky – Team Leader, Technical Competence Center Director; Dr. Yuriy Kononov – Technical Expert; Ganna Zadnipriana – Auditor; Dmytro Rakovich – Trainee.	
Work verified by: Dr. Lixin Li – Technical Reviewer	TÜV Rheinland Japan Ltd. (TÜV Rheinland)
Determination Report approved by: Dr. Manfred Brinkmann – Accredited Independent Entity Operational manager; TÜV Rheinland Japan Ltd. (TÜV Rheinland)	

Date of this revision:	Revision No.:	Number of pages:
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Abbreviations

AIE	Accredited Independent Entity
ANE	Authorized National Entity
BE	Baseline Emission
CO_2	Carbon Dioxide
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CL	Clarification Request
DR	Document Review
EIA	Environmental Impact Assessment
ERU	Emission Reduction Unit
eq.	equivalent
FAR	Forward Action Request
GHG	Greenhouse Gas
GW•h	Gigawatt-hours
I	Interview
JI	Joint Implementation
JISC	Joint Implementation Supervisory Committee
kW	Kilowatt
kW•h	Kilowatt-hours
LoA	Letter of Approval
LoE	Letter of Endorsement
MoV	Means of Verification
MP	Monitoring Plan
MW	Megawatt
MW•h	Megawatt-hours
NGO	Nongovernmental organization
NOx	Nitric oxide
PE	Project Emissions
PDD	Project Design Document
SO_2	Sulphur dioxide
SP	Stakeholders poll
SV	Site visit
t	Tonne
tCO_2e	Tonnes of CO_2 equivalent
UNFCCC	United Nations Framework Convention on Climate Change
VAT	Value Added Tax

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1 DETERMINATION OPINION

The determination team of TÜV Rheinland Japan Ltd. (TÜV Rheinland) has performed a determination of JI project "Utilization of Coal Mine Methane at the SE "Makiyivvuhillya" under the national procedure (Track 1). The determination was performed on the basis of UNFCCC criteria and host country criteria and also on the criteria given to provide for consistent project operations, monitoring and reporting.

The determination consists of the following three phases:

i) a desk review of the project design document (PDD) including analysis of the baseline justification and monitoring plan;
ii) follow-up interviews with project stakeholders including on site visit;
iii) the resolution of outstanding issues and the issuance of the final determination report and opinion.

The project participants of the large scale JI project "Utilization of Coal Mine Methane at the SE "Makiyivvuhillya" selected the JI specific approach for identifying the baseline, defined in paragraph 22 (a) of the "Determination and Verification Manual" (DVM).

A baseline for the project was set in accordance with criteria stated in Appendix B to decision 9/CMP.1 (JI guidelines). The JI specific approach is provided in paragraph 9 (a) of the "Guidance on criteria for baseline setting and monitoring", version 03.

The PDD version 2.0 dated 20/09/2012 provides a description of the chosen baseline in a clear and transparent manner according to "Guidelines for users of the joint implementation project design document form", version 04, and paragraphs 23-29 "Guidance on Criteria for Baseline Setting and Monitoring", version 03.

Project participants used the following approach, which is defined in paragraph 44 (b) DVM: to demonstrate additionality of the project the way of providing transparent information that can be tracked was used, that similar approach to demonstration of additionality has already been applied in those cases where the determination is considered to be positive, and which can be considered as comparable in applying the criteria for determining the baseline in paragraph 12 of DVM. Under this approach, the PDD version 2.0 dated 20/09/2012 include comparability analysis, barrier analysis and appropriate justifications in order to determine that the project activity is not the baseline scenario.

The JI project is likely to result in reductions of GHG emissions in accordance with the project description. Project additionality analysis demonstrates that the proposed project activity is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. Given that the project is implemented and maintained as designed, the project is likely to achieve the estimated amount of emission reductions.

The review of the project design documentation (version 2.0 dated 20/09/2012) and the subsequent interviews have provided TÜV Rheinland Japan Ltd. (TÜV Rheinland) with sufficient evidence to determine the fulfilment of stated criteria. In our opinion, the project correctly applies and meets the relevant UNFCCC requirements for JI projects and the relevant host country criteria.

The final version of the PDD (version 2.0 dated 20/09/2012) was revised based on raised corrective action requests and clarification requests by determination team of TÜV Rheinland Japan Ltd. (TÜV Rheinland) that were satisfactory resolved.

The determination is based on the information made available to the determination team of TÜV Rheinland Japan Ltd. (TÜV Rheinland) and the engagement conditions detailed in this report.

2 INTRODUCTION

LLC "Science and Production Association "ENERGOMETHANE" has commissioned TÜV Rheinland Japan Ltd. (TÜV Rheinland) to determinate its JI project "Utilization of Coal Mine Methane at the SE "Makiyivvuhillya" (hereafter called "Project"), that is located in Makiivka of Donetsk region, Ukraine.

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

2.1 Objective

The determination is an independent third party assessment of the project design. In particular, the project's baseline, the monitoring plan (MP), and the project's compliance with relevant UNFCCC and host country criteria are determined in order to confirm that the project design, as documented, is sound and reasonable, and meet the stated requirements and identified criteria. Determination is a requirement for all JI projects and is considered necessary to provide assurance to stakeholders of the quality of the project and its intended generation of emission reduction units (ERUs).

UNFCCC criteria refer to Article 6 of the Kyoto Protocol, Appendix B of the JI guidelines and the subsequent decisions by the JISC, as well as the host country criteria.

2.2 Scope

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

The determination is not meant to provide any consulting towards the Client. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project design.

2.3 Description of the project on GHG emission reduction

The brief information regarding project is provided in Table 1.

Table 1 – JI large scale project brief information

Project Parties involved:	1. Ukraine (Host Party); 2. Party 2
Title of the project:	Utilization of Coal Mine Methane at the SE "Makiyivvuhillya"
Type of JI activity:	Large scale
Baseline and monitoring methodology:	JI specific approach
Project entity participant:	State Enterprise "Makiyivvuhillya", 86157, Ukraine, Donetsk region, Makiivka, Radyanska Square
Other project participants:	-
Location of the project:	Makiivka, Ukraine The central site of coal mines of SE "Makiyivvuhillya": CE "Mine named after V.M.Bazhanov" of SE "Makiyivvuhillya"; CE "Mine "Kholodna Balka" of SE "Makiyivvuhillya"; CE "Coal Mine Named after S.M. Kirov" of SE "Makiyivvuhillya"; CE "Mine "Chaikino" of SE "Makiyivvuhillya"
Starting date of the project:	December 14, 2004
Length of the crediting period:	15 years or 180 months
Length of the part of the crediting period before the first commitment period of the Kyoto Protocol:	2 years or 24 months (from 01/01/2006 to 31/12/2007)
Length of the part of crediting period within the first commitment period of the Kyoto Protocol:	5 years or 60 months (from 01/01/2008 to 31/12/2012)
Length of the part of crediting period after the first commitment period of the Kyoto Protocol:	8 years or 96 months (from 01/01/2013 to 31/12/2020)

The main purpose of this project is the utilization of coal mine methane captured by degassing system. Coal mine methane, which is released and captured at mines of SE "Makiyivvuhillya", will be used to produce heat for consumption at the mine on replacement of coal supplied from the mine "Butivska" and consumed as fuel by the existing boilers.

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 "Makiyivvuhillya" 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 "Makiyivvuhillya".

As a result of the project implementation, CMM emissions in the atmosphere will reduce, also through burning CMM in boilers; coal consumption for heating mines will decrease, leading to GHG emissions reduction compared with the current situation.

The starting date of the JI project activity was December 14, 2004, when an order on the start of refitting boiler houses to gaseous fuel was issued. The evidence document of starting date was provided by project participants to the determination team as supporting document (please refer to evidence document # /170/ in Table 2, section 3.1. of the Determination Report).

3 METHODOLOGY

The determination consists of the following three phases:

I) a desk review of the project design documents including analysis of the baseline justification and monitoring plan;

II) follow-up interviews with project stakeholders including on site visit;

III) the resolution of outstanding issues and the issuance of the final Determination report and opinion.

The following sections outline each step in more detail.

3.1 Desk Review of the Project Design Documentation

The Project Design Document (PDD) submitted by the company LLC "Science and Production Association "ENERGOMETHANE", and additional background documents related to the project design to be checked by an Accredited Independent Entity were reviewed. The list of submitted documentation is provided below. To address TÜV Rheinland Japan Ltd. (TÜV Rheinland) corrective action and clarification requests, "Science and Production Association "ENERGOMETHANE" LLC revised the PDD and resubmitted it on 20/09/2012 as version 2.0.

The determination findings presented in this report relate to the project as described in the PDD version 2.0 dated 20/09/2012.

The following table outlines the documentation reviewed during the determination. The documents provided by LLC "Science and Production Association "ENERGOMETHANE", are indicated in Table 2 below. The documents of Category 1 relate directly to the components of the project. The documents of Category 2 relate to the design and/or methodologies employed in the design or other reference documents.

Table 2 – Documents reviewed during the determination

No.	Title of the document
Documents of Category 1	
/1/	PDD "Utilization of Coal Mine Methane at the SE "Makiyivvuhillya", version 1.0 dated 01/08/2012.
/2/	PDD "Utilization of Coal Mine Methane at the SE "Makiyivvuhillya", version 2.0 dated 20/09/2012.
/3/	Spreadsheet of calculations of GHG emission reductions in Excel format.
/4/	"Guidelines for users, Form of documents of Joint Implementation Project Development Document", version 04.
/5/	"Guidance on Criteria for Baseline Setting and Monitoring", version 03.
/6/	The Kyoto Protocol to the Framework Convention of the United Nations

	Climate Change.
/7/	Marrakech Accords, JI Modalities
/8/	JI Guidelines. Annex B to the decision 9/CMP.1.
/9/	Guidelines on determination and verification of joint implementation projects, version 01.
/10/	"JI Glossary", version 03.
/11/	Letter of Endorsement for the project "Utilization of Coal Mine Methane at the SE "Makiyivvuhillya" No. 2665/23/7 dated 20/09/2012.
Documents of Category 2	
/12/	Certificate of gas analyzer calibration TP 5501 #78-79 dated 12/01/2012
/13/	Certificate of gas analyzer calibration TP 5501 #52-53 dated 10/01/2011
/14/	Certificate of gas analyzer calibration TP 5501 #47-48 dated 11/01/2010
/15/	Certificate of gas analyzer calibration TP 5501 #82-83 dated 11/01/2009
/16/	Certificate of gas analyzer calibration TP 5501 #74-75 dated 10/01/2008
/17/	Certificate of gas analyzer calibration TP 5501 #69-70 dated 11/01/2007
/18/	Certificate of gas analyzer calibration TP 5501 #63-64 dated 11/01/2006
/19/	Certificate of gas analyzer calibration TP 2301 #63-62 dated 11/01/2012
/20/	Certificate of gas analyzer calibration TP 2301 # 37-38 dated 10/01/2011
/21/	Certificate of gas analyzer calibration TP 2301 # 73-74 dated 10/01/2010
/22/	Certificate of gas analyzer calibration TP 2301 # 55-56 dated 10/01/2009
/23/	Certificate of gas analyzer calibration TP 2301 # 94-95 dated 12/01/2008
/24/	Certificate of gas analyzer calibration TP 2301 # 42-43 dated 09/01/2007
/25/	Certificate of gas analyzer calibration TP 2301 # 91-92 dated 12/01/2006
/26/	Certificate of gas analyzer calibration TP 230144 # 89-90 dated 10/01/2012
/27/	Certificate of gas analyzer calibration TP 230144 # 77-78 dated 10/01/2011
/28/	Certificate of gas analyzer calibration TP 230144 # 87-88 dated 11/01/2010
/29/	Certificate of gas analyzer calibration TP 230144 # 93-94 dated 12/01/2009
/30/	Certificate of gas analyzer calibration TP 230144 # 83-84 dated 10/01/2008
/31/	Certificate of gas analyzer calibration TP 230144 # 35-36 dated 09/01/2007
/32/	Certificate of gas analyzer calibration TP 230144 # 54-55 dated 10/01/2006
/33/	Certificate of gas analyzer calibration Mitron 5030i # 39-40 dated 10/01/2012
/34/	Certificate of gas analyzer calibration Mitron 5030i # 33-34 dated 10/01/2011
/35/	Certificate of gas analyzer calibration Mitron 5030i # 60-61 dated 11/01/2010

/36/	Certificate of gas analyzer calibration Mitron 5030i # 58-59 dated 12/01/2009
/37/	Certificate of gas analyzer calibration Mitron 5030i # 39-40 dated 08/01/2008
/38/	Certificate of gas analyzer calibration Mitron 5030i # 31-32 dated 09/01/2007
/39/	Certificate of gas analyzer calibration Mitron 5030i # 44-45 dated 10/01/2006
/40/	Contract #24/703 for the metrological works implementation (services) dated 28/03/2011
/41/	Protocol of harmonizing cost of works (services) to the contract #24/703 dated 28/03/2011
/42/	Contract #24/257 for the metrological works implementation (services) dated 09/02/2009
/43/	Protocol of harmonizing cost of works (services) to the contract #24/257 dated 09/02/2009
/44/	Contract #24/196/25 for the metrological works implementation (services) dated 02/02/2009
/45/	Contract #24/194/27 for the metrological works implementation (services) dated 02/02/2009
/46/	Contract #24/400 for the metrological works implementation (services) dated 14/02/2011
/47/	Contract #24/401/48 for the metrological works implementation (services) dated 14/02/2011
/48/	Protocol of harmonizing cost of works (services) to the contract #24/48 dated 14/02/2011
/49/	Protocol of discrepancies to the contract #24/401/48 dated 14/02/2011
/50/	Contract #24/590/78 for the metrological works implementation (services) dated 14/03/2011
/51/	Additional Agreement to the Contract for the metrological works implementation (services) #24/401/48 dated 14/02/2011
/52/	Letter from SE "Donetskstandartmetrologiya" on conclusion of the contract #881/24-18 dated 02/02/2009
/53/	Information about the sufficiency of funds needed for conclusion of the contract #24/194/27 dated 02/02/2009
/54/	Letter from SE "Donetskstandartmetrologiya" on conclusion of the contract (sending copies) #881/24-18 dated 02/02/2009
/55/	Provisions of chief engineer of "Mine named after V.M.Bazhanov" dated 12/03/2012
/56/	Inside instruction of chief engineer of "Coal Mine Named after S.M. Kirov" dated 01/10/2011
/57/	Provisions on technical service at "Mine "Kholodna Balka" dated 25/04/2011

/58/	Inside instruction of chief engineer at "Mine "Chaikino"
/59/	Certificate of refitting at "Mine "Kholodna Balka"
/60/	Certificate of refitting at "Mine named after V.M.Bazhanov"
/61/	Certificate of refitting at "Mine "Chaikino" #01-07/1579 dated 07/08/2012
/62/	Certificate of refitting at "Coal Mine Named after S.M. Kirov"
/63/	Guidance on accounting production and use of methane-air mixture from degassing dated 16/12/2005
/64/	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
/65/	Certificate for volumes of degasified, utilized and emitted to the candle methane gas "Mine "Chaikino" for the period from 2006 to 2012
/66/	Certificate for volumes of degasified, utilized and emitted to the candle methane gas "Mine "Kholodna Balka" for the period from 2006 to 2012
/67/	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
/68/	Scheme of installation of units for accounting methane "Mine "Kholodna Balka"
/69/	Scheme of installation of units for accounting methane "Mine named after V.M.Bazhanov"
/70/	Scheme of vacuum pumping station and boiler house at "Mine "Chaikino"
/71/	Scheme of installation of units for accounting methane at "Coal Mine Named after S.M. Kirov"
/72/	Certificate of the work implementation on technical refitting of degassing at "Mine "Kholodna Balka"
/73/	Certificate of the work implementation on technical refitting of degassing at "Coal Mine Named after S.M. Kirov"
/74/	Certificate of the work implementation on technical refitting of degassing at "Mine "Chaikino" #01-02/1576 dated 06/08/2012
/75/	Certificate of the work implementation on technical refitting of degassing at "Mine named after V.M.Bazhanov" #02/2187 dated 17/08/2012
/76/	Financial and economic indicators from "Mine "Kholodna Balka" to JI project
/77/	Financial and economic indicators from "Mine named after V.M.Bazhanov" to JI project
/78/	Financial and economic indicators from "Mine "Chaikino" to JI project
/79/	Financial and economic indicators from "Coal Mine Named after S.M. Kirov" to JI project

/80/	Certificate of attestation of Coal Chemistry Laboratory "Zhovtneva" #303 dated 27/02/2012
/81/	Calorific value of coal of GR grade of "Mine Butivska"
/82/	Certificate of commissioning equipment KIPi A "Mine "Chaikino" dated 16/10/2005
/83/	Certificate of commissioning boilers DKV-6.5/-13 #2 and #4 "Mine "Chaikino" dated 16/10/2005
/84/	Certificate of completion of works and commissioning boiler DKV-6.5/13 #2 "Mine "Chaikino" dated 15/10/2005
/85/	Certificate of completion of works and commissioning boiler DKV-6.5/13 #4 "Mine "Chaikino" dated 20/07/2005
/86/	Act of beginning of boilers operation #1-#4 of the boiler house at "Mine "Kholodna Balka" dated 30/12/2005
/87/	Act of completion of work on transfer to gaseous fuel at "Mine "Kholodna Balka" dated 20/11/2005
/88/	Act of acceptance of gas analyzers and flowmeter of accounting gas emissions at "Mine "Kholodna Balka" dated 15/10/2005
/89/	Method of capturing methane-air mixture
/90/	Average depth of purification works at the mines of SE "Makiyivvuhillya" for 2006-2011
/91/	Average depth of work conducting at SE "Makiyivvuhillya" for 2006-2011
/92/	Consumption of coal by production boiler houses at mines of SE "Makiyivvuhillya" in 2003-2005
/93/	Consumption of methane by production boiler houses at mines of SE "Makiyivvuhillya" in 2003-2012
/94/	Consumption of heat energy by production boiler houses at mines of SE "Makiyivvuhillya" in 2003-2012
/95/	Certificate #38 of gas analyzer calibration KAM-IUZ and #37 of gas analyzer calibration TP-2301 dated 10/01/2012
/96/	Certificate #32 of gas analyzer calibration KAM-IUZ and #31 of gas analyzer calibration TP -2301 dated 10/01/2011
/97/	Certificate #58 of gas analyzer calibration KAM-IUZ and #59 of gas analyzer calibration TP -2301 dated 11/01/2010
/98/	Certificate #57 of gas analyzer calibration KAM-IUZ and #56 of gas analyzer calibration TP -2301 dated 12/01/2009
/99/	Certificate #32 of gas analyzer calibration KAM-IUZ and #33 of gas analyzer calibration TP -2301 dated 08/01/2008
/100/	Certificate #30 of gas analyzer calibration KAM-IUZ and #29 of gas analyzer

	calibration TP -2301 dated 09/01/2007
/101/	Certificate #43 of gas analyzer calibration KAM-IUZ and #42 of gas analyzer calibration TP-2301 dated 10/01/2006
/102/	Certificate #80 of gas analyzer calibration TP-2301 dated 12/01/2012 and #54 dated 10/01/2011
/103/	Certificate #84 of gas analyzer calibration TP-2301 dated 11/01/2009 and #49 dated 11/01/2010
/104/	Certificate #71 of gas analyzer calibration TP-2301 dated 11/01/2007 and #76 dated 10/01/2008
/105/	Certificate #65 of gas analyzer calibration TP-2301 dated 11/01/2006
/106/	Certificate #93 of gas analyzer calibration KAM-IUZ dated 12/01/2006
/107/	Certificate #44 of gas analyzer calibration KAM-IUZ dated 09/01/2007 and #96 dated 12/01/2008
/108/	Certificate #57 of gas analyzer calibration KAM-IUZ dated 11/01/2009 and #75 dated 10/01/2010
/109/	Certificate #64 of gas analyzer calibration KAM-IUZ dated 10/01/2012 and #39 dated 10/01/2011
/110/	Certificate #56 of gas analyzer calibration KAM-IUZ dated 10/01/2006
/111/	Certificate #37 of gas analyzer calibration KAM-IUZ dated 09/01/2007 and #85 dated 09/01/2008
/112/	Certificate #95 of gas analyzer calibration KAM-IUZ dated 12/01/2009 and #89 dated 11/01/2010
/113/	Certificate #79 of gas analyzer calibration KAM-IUZ dated 10/01/2011 and #91 dated 10/01/2012
/114/	Inside instruction of the chief of the site "Boiler house" at "Mine named after V.M.Bazhanov" dated 15/03/2012
/115/	Inside instruction of thermotechnics at "Mine "Kholodna Balka" dated 25/05/2009
/116/	Inside instruction of the chief of the site "Boiler house" at "Coal Mine Named after S.M. Kirov" dated 15/02/2010
/117/	Inside instruction of thermotechnics at "Mine "Chaikino" dated 11/01/2010
/118/	Results of laboratory studies of methane-air mixture component composition at "Coal Mine Named after S.M. Kirov" dated 26/09/2005
/119/	Results of laboratory studies of methane-air mixture component composition at "Coal Mine Named after S.M. Kirov" dated 20/09/2006
/120/	Results of laboratory studies of methane-air mixture component composition at "Coal Mine Named after S.M. Kirov" dated 24/09/2007
/121/	Results of laboratory studies of methane-air mixture component composition

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/122/	Results of laboratory studies of methane-air mixture component composition at "Coal Mine Named after S.M. Kirov" dated 21/09/2009
/123/	Results of laboratory studies of methane-air mixture component composition at "Coal Mine Named after S.M. Kirov" dated 20/09/2010
/124/	Results of laboratory studies of methane-air mixture component composition at "Coal Mine Named after S.M. Kirov" dated 19/09/2011
/125/	Results of laboratory studies of methane-air mixture component composition at "Mine "Kholodna Balka" dated 26/09/2005
/126/	Results of laboratory studies of methane-air mixture component composition at "Mine "Kholodna Balka" dated 20/09/2006
/127/	Results of laboratory studies of methane-air mixture component composition at "Mine "Kholodna Balka" dated 24/09/2007
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/143/	Results of laboratory studies of methane-air mixture component composition at "Mine named after V.M.Bazhanov" dated 24/09/2007
/144/	Results of laboratory studies of methane-air mixture component composition at "Mine named after V.M.Bazhanov" dated 20/09/2006
/145/	Results of laboratory studies of methane-air mixture component composition at "Mine named after V.M.Bazhanov" dated 26/09/2005
/146/	Results of laboratory studies of methane-air mixture component composition at "Mine named after V.M.Bazhanov" dated 15/03/2012
/147/	Provisions on the site of preventive works for safety at "Mine "Kholodna Balka" dated 06/04/2011
/148/	Job description of site chief of preventive works for safety at "Coal Mine Named after S.M. Kirov" dated 01/11/2011
/149/	Job description of site chief of preventive works for safety at "Mine "Chaikino" dated 24/03/2011
/150/	Job description of leading engineer on environmental protection of technological department at "Mine named after V.M.Bazhanov" dated 19/03/2012
/151/	Job description of leading engineer on environmental protection at "Mine "Kholodna Balka" dated 16/10/2009
/152/	Job description of leading engineer on environmental protection of technology service at "Coal Mine Named after S.M. Kirov" dated 22/02/2010
/153/	Job description of leading engineer on environmental protection "Mine "Chaikino" dated 02/11/2009
/154/	Contract on works performance dated 18/07/2004 between "Mine "Chaikino" and "Ukrvuglegeologiya"
/155/	Annex #1 to the contract dated 18/07/2004
/156/	Contract on works performance dated 25/07/2006 between "Coal Mine Named after S.M. Kirov" and "Ukrvuglegeologiya"
/157/	Annex #1 to the contract dated 25/07/2006
/158/	Contract on works performance dated 15/06/2005 between "Mine "Kholodna Balka" and "Ukrvuglegeologiya"
/159/	Annex #1 to the contract dated 15/06/2005
/160/	Contract on works performance dated 04/02/2009 between "Mine named after V.M.Bazhanov" and "Ukrvuglegeologiya"

/161/	Annex #1 to the contract dated 04/02/2009
/162/	Book of steam boiler
/163/	Passport of steam boiler
/164/	Certificates of quality of manufacturing boiler
/165/	Notes from basic fittings and control and measuring devices of steam boiler
/166/	Names of basic fittings and control and measuring devices
/167/	Information about the number and types of boilers
/168/	Information on the availability of devices KIPiA in boiler houses
/169/	Information on the availability of heat meters in boiler houses
/170/	Order # 216 on the transfer of mines to gaseous fuel dated 14/12/2004
/171/	Information on EIA implementation at the enterprises of SE "Makiyivvuhillya" dated 09/08/2012
/172/	Act of testing gas pipeline for density at "Mine named after V.M.Bazhanov" dated 29/06/2005
/173/	Act of testing gas pipeline for density at "Mine named after V.M.Bazhanov» dated 25/04/2005
/174/	Act of testing gas pipeline for density at "Mine named after V.M.Bazhanov" dated 05/12/2005
/175/	Act of commissioning vacuum pump installation VVN-2-150 at "Mine named after V.M.Bazhanov" dated 14/07/2005
/176/	Act of commissioning vacuum pump installation VVN-2-50 at "Mine named after V.M.Bazhanov" dated 05/05/2005
/177/	Act of acceptance into operation of pipeline at "Mine named after V.M.Bazhanov" dated 17/06/2005
/178/	Act of acceptance of work on refitting boilers at "Mine named after V.M.Bazhanov" dated 18/08/2005
/179/	Act of commissioning boiler house at "Mine named after V.M.Bazhanov" dated 10/10/2005
/180/	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
/181/	Act of commissioning control and measuring devices, gas analyzer at "Mine named after V.M.Bazhanov" dated 12/09.2005
/182/	Act of commissioning KIP and A at "Coal Mine Named after S.M. Kirov" dated 26/09/2005
/183/	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
/184/	Act of commissioning boiler DKV-6.5/13 at "Coal Mine Named after S.M.

	Kirov" dated 25/10/2005

3.2 Interviews with stakeholders

TÜV Rheinland Japan Ltd. (TÜV Rheinland) performed interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of the company LLC "Science and Production Association "ENERGOMETHANE" and SE "Makiyivvuhillya" were interviewed and their names are summarized in Table 3. The main topics of the interviews are summarized in Table 4.

Table 4 – Persons interviewed

No.	Name	Position	Organization
/1/	Schutskyy Leonid Boleslavovych	Chief Engineer of "Mine "Kholodna Balka"	State Enterprise "Makiyivvuhillya"
/2/	Tolstykh Pavlo Mykolayovych	Chief Engineer of "Mine "Chaikino"	State Enterprise "Makiyivvuhillya"
/3/	Vinnychuk Volodymyr Mykhailovych	Chief of the site of preventive maintenance on safety of "Mine "Kholodna Balka"	State Enterprise "Makiyivvuhillya"
/4/	Shkalenko Valentyna Borysivna	Ecologist of "Mine "Kholodna Balka"	State Enterprise "Makiyivvuhillya"
/5/	Makarenko Serhiy Vasyliovych	Director	"SPA "Energometan" LLC

Table 5 – Interview topics

No.	Date	Interviewed organization	Interview topics
/1/	15/09/2012	SE "Makiyivvuhillya"	➢ Project implementation ➢ Compliance of the project with legal requirements ➢ Technical equipment ➢ Issue of sustainable development ➢ System of project monitoring ➢ Personnel training ➢ Emergency

			preparedness
/3/	15/09/2012	LLC "Science and Production Association "ENERGOMETHANE"	➢ Baseline ➢ Additionality ➢ Crediting period ➢ Monitoring plan ➢ History of education ➢ Management system ➢ Environmental impact ➢ Stakeholder comments ➢ Host Party approval

3.3 Resolution of Clarification and Corrective Action Requests

The overall determination, from Contract signing to Determination Report and Opinion, was conducted using TÜV Rheinland Japan Ltd. (TÜV Rheinland) internal procedures. The objective of this phase of the determination is to raise the requests for corrective actions and clarification and any other outstanding issues that needed to be clarified for TÜV Rheinland Japan Ltd. (TÜV Rheinland) positive conclusion on the project design.

In order to ensure transparency, a determination protocol (Annex A to the Determination report) was customized for the project, in accordance with the Annex to "Joint Implementation Determination and Verification Manual", version 01. The protocol shows, in a transparent manner, criteria (requirements), means of verification and the results from determining the identified criteria. The determination protocol serves the following purposes:

- it organizes, details and clarifies the requirements a JI large scale project is expected to meet;
- it ensures a transparent determination process where the verifier will document how a particular requirement has been determined and the result of the determination.

The determination protocol consists of three tables. The different columns in these tables are described in Figure 1 below.

To guarantee the transparency of the determination process, the concerns raised are documented in more detail in the determination protocol (Annex A to the Determination report).

The PDD, final version 2.0 of 20/09/2012 was submitted to the determination team of TÜV Rheinland Japan Ltd. (TÜV Rheinland) for final determination. The final version of the PDD (version 2.0 dated 20/09/2012) was revised based on the determination protocol (Annex A to the

Determination report) with the issued corrective action requests and clarification requests. The major changes include: starting date of the project activity; the duration of the crediting period; monitoring plan; description of technology solutions of the project.

Determination Protocol Table 1: Mandatory Requirement for Joint Implementation (JI) Project Activities			
Requirement	**Reference**	**Conclusion**	**Cross reference**
The requirements the project must meet.	Gives reference to the legislation or agreement where the requirement is found.	This is either acceptable based on evidence provided (OK), a Corrective Action Request (CAR), a Clarification Request (CL) or a Forward Action Request (FAR) of risk or non-compliance with stated requirements. The CAR's, CL's and FAR's are numbered and presented to the client in the Determination Report.	Used to refer to the relevant protocol questions in Tables 2, to show how the specific requirement is determined. This is to ensure a transparent determination process.

Determination Protocol Table 2: Requirements checklist				
Checklist Question	**Reference**	**Means of verification (MoV)**	**Comments**	**Draft and/or Final Conclusion**
The various requirements in Table 1 are linked to checklist questions the project should meet. The checklist is organized in several sections. Each section is then further sub-divided. The lowest level constitutes a checklist question.	Gives reference to documents where the answer to the checklist question or item is found.	Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A	The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.	This is either acceptable based on evidence provided **(OK)**, or a **Corrective Action Request (CAR)** due to non-compliance with the checklist question. (See below). **Clarification Request (CL)** is used when the determination team has identified a need for further clarification. **Forward action**

		means not applicable.		**request (FAR)** informs the project participants of an issue that needs to be reviewed during the verification.

Determination Protocol Table 3: Resolution of Corrective Action and Clarification Requests			
Report clarifications and corrective action requests	**Ref. to checklist question in tables 1, 2**	**Summary of project owner response**	**Determination team conclusion**
If the conclusions from the Determination are a Corrective Action Request, a Clarification Request or a Forward action request, these should be listed in this section.	Reference to the checklist question number in Tables 2 where the Corrective Action Request, Clarification Request or a Forward action request is explained.	The responses given by the Client or other project participants during the communications with the determination team should be summarized in this section.	This section should summarize the determination team's responses and final conclusions. The conclusions should also be included in Tables 2, under "Final Conclusion".

Figure 1 – Determination protocol tables

3.4 Internal quality control

Determination report including the determination findings underwent a technical review before requesting registration of the project activity. The technical review was performed by an internal technical reviewer qualified in accordance with TÜV Rheinland Japan Ltd. (TÜV Rheinland) qualification scheme for JI project determination and verification.

3.5 Determination team

The determination team consists of the following personnel indicated in Table 5 below.

Table 5 – Determination team

Name	Role
Dr. Manfred Brinkmann	AIE Operational manager, TÜV Rheinland Japan Ltd. (TÜV Rheinland)
Dr. Lixin Li	Technical Reviewer
Dr. Valery Yakubovsky	Team Leader
Dr. Yuriy Kononov	Technical Expert
Ganna Zadnipriana	Auditor
Dmytro Rakovich	Trainee

4 DETERMINATION FINDINGS

In the following subsections the determination findings are stated as follows:

1) the findings from the desk review of the original project design documents and the findings from interviews during the follow up visit are summarized. A more detailed record of these findings can be found in the Determination Protocol (Annex A to the Determination report);
2) in case TÜV Rheinland Japan Ltd. (TÜV Rheinland) had identified issues that needed clarification or that represented a risk to the fulfilment of the project objectives, a Clarification or Corrective Action Request, respectively, have been issued. The Clarification and Corrective Action Requests are stated, where applicable, in the following subsections and are further documented in the Determination Protocol (Annex A to the Determination report). The determination of the Project resulted in 17 Corrective Action Requests (CARs), 14 Clarification Requests (CLs) and 1 Forward Action Request (FAR) that will be considered during the first verification and closed after issuing written project approvals by Parties involved;
3) conclusions for determination subject are presented in each subsection.

The considerations, findings and means of verification for areas of determination are provided below in accordance with the Determination and Verification Manual (DVM). All information indicated in the following subsections relates to the PDD version 2.0 dated 20/09/2012 (hereinafter called "PDD").

4.1 Project approval by Parties Involved

In accordance with paragraphs 19-20 of the DVM the assessment of this area focuses on whether the designated focal points (DFPs) of all Parties listed as "Parties involved" in the PDD have provided written project approvals. It also should be assessed whether the written project approvals referred to above are unconditional.

The project has no written project approvals by Parties involved. "Glossary of joint implementation terms", version 03 defines the following:
a) At least the written project approval(s) by the host Party(ies) should be provided to the AIE and made available to the secretariat by the AIE when submitting the determination report regarding the PDD for publication in accordance with paragraph 34 of the JI guidelines;
b) At least one written project approval by a Party involved in the JI project, other than the host Party(ies), should be provided to the AIE and

made available to the secretariat by the AIE when submitting the first verification report for publication in accordance with paragraph 38 of the JI guidelines, at the latest.

To obtain a written project approval by the host Party (Ukraine) a final Determination Report should be submitted to the State Environmental Investment Agency of Ukraine. Written project approval by Party involved in the project, other than the host Party, will be obtained before the submission of the first verification report for publication in accordance with paragraph 38 of the JI Guidelines.

The FAR 01 was raised. It will be closed after issuing written project approvals by Parties involved.

Identified problem areas for project approval, project participants' responses and conclusions of TÜV Rheinland Japan Ltd. (TÜV Rheinland) are described in Annex A to the Determination Report (refer to FAR 01).

4.2 Authorization of project participants by Parties involved

In accordance with paragraph 21 of the DVM the assessment of this area focuses on whether each of the legal entities listed as project participants in the PDD is authorized by a Party involved, which is also listed in the PDD, through: a written project approval by a Party involved, explicitly stating the name of the legal entity; or any other form of project participant authorization in writing, explicitly stating the name of the legal entity.

The following legal entities were included in the PDD as project participants:

- SE "Makiyivvuhillya".

Detailed information on the project participants is listed in Section A.3. of the PDD. Contact information on the project participants, which clearly specify the names of legal entities, is listed in Annex 1 of the PDD.

Identified problem areas for authorization of project participants by Parties involved, project participants' responses and conclusions of TÜV Rheinland Japan Ltd. (TÜV Rheinland) are described in Annex A to the Determination Report (refer to FAR 01).

4.3 Baseline Setting

In accordance with paragraphs 22-26 of the DVM the assessment of this area focuses on various aspects of the baseline setting by project participants.

Paragraph 9 of the "Guidance on criteria for baseline setting and

monitoring", version 03 defines three following approaches selected for identifying the baseline:
(a) By using a methodology for baseline setting and monitoring developed in accordance with Appendix B of the JI guidelines (hereinafter referred to as JI specific approach);
(b) By using a baseline and monitoring methodology approved by the CDM Executive Board in its totality (hereinafter referred to as approved CDM methodology approach);
(c) Using the approach for baseline and monitoring setting adopted in similar projects.

The project participants of the project "Utilization of Coal Mine Methane at the SE "Makiyivvuhillya" selected the JI specific approach for identifying the baseline.

A baseline for the project was set in accordance with criteria stated in Appendix B to decision 9/CMP.1 (JI guidelines). The JI specific approach is provided in paragraph 9 (a) of the "Guidance on criteria for baseline setting and monitoring", version 03.

The PDD provides a description of the chosen baseline in a clear and transparent manner according to "Guidelines for users of the joint implementation project design document form", version 04, as well as a justification per the "Guidance on criteria for baseline setting and monitoring", version 03 (paragraphs 23-29).

The desk review of the PDD and follow-up interviews provided enough reasons for TÜV Rheinland Japan Ltd. (TÜV Rheinland) to assess that the baseline for this JI project is established:

a) By listing and describing plausible future scenarios on the basis of conservative assumptions and selecting the most plausible one.
Plausible future scenarios are listed below.

Scenario 1: Thermal energy generation by burning coal and release of coal mine methane into the atmosphere (continuation of current practice);

Scenario 2: Coal mine methane utilization for heat generation in the boiler houses of mines using coal as a reserve fuel, and release of excess coal mine methane in the atmosphere (project scenario without JI incentives).

All scenarios, except Scenario 1 – Continuation of the existing practice, face prohibitive barriers. Therefore, continuation of the existing situation is the most plausible future scenario and was selected as the baseline scenario for the project.

b) **Taking into account basic national and/or sectoral policies and circumstances, such as sectoral reform initiatives, local fuel availability, power sector expansion plans, and the economic situation in the region.**

In this context, the TÜV Rheinland Japan Ltd. (TÜV Rheinland) assessed whether the key factors that affect a baseline were taken into account. The project participants established the baseline taking into account the following key factors:

- **Sectoral reform policies and legislation.** In order to improve the efficiency in coal mining and increase coal extraction the Ukrainian Coal Program was adopted by the Resolution of Cabinet of Ministers of Ukraine No. 1205 as of 19th of September 2001. It envisioned state support to coal industry, ownership structure change, improvement of safety conditions at mines and decreasing negative environmental impact caused by coal mining. Coal mine methane utilization was not covered by the Program as well as by other relevant regulation documents, namely:
  - Decree of the President of Ukraine No. 26/2002 as of 16th of January 2002 "On urgent activities for improvement of work conditions and development of the state supervision at mining enterprises";
  - Resolution of Cabinet of Ministers of Ukraine No. 939 as of 6th of July 2002 "On adoption of Health and Safety Program at Coal Mines".
- Thus, there were no any regulations in place obliging to utilize the gases captured by methane drainage techniques; consequently, the common practice at Ukrainian mines was its venting into the atmosphere.

- **Economic situation/growth and socio-demographic factors in the relevant sector as well as resulting predicted demand.** In the early 2000's when it was decided to implement the project, the Ukrainian coal industry was going through economic, financial and technical crisis. Coal production as of 1991 amounted to 135.6 million tons, while in 2000 this indicator reached 80.3 million tons. The main problem of Ukrainian coal industry was because of the fact that coal prices did not reflect either the costs of its production or cost of alternative energy sources that were available or potentially available on the territory of Ukraine. Attracting capital in the coal-mining industry was relatively restrained. Until 2000 because of its unprofitability more than 30% of mines did not operate, the practice of financing maintenance at the expense of operating funds existed at other mines, which led to increasing debt from loans and salaries. In early 2001, debt to workers of coal-mining enterprises amounted to 1.9 billion UAH. Together with hazardous working conditions and high death rate among miners, social tension in the region

worsened. As for objective factors they include geological conditions of coal production, which become increasingly difficult, low level of technological development of the national coal mining enterprises, high degree of physical and moral deterioration of fixed assets and above all, coal mining equipment. Subjective ones are connected with limited investment resources, low efficiency of management system of the industry in 2002-2005, and incomplete structural changes, and in addition, lack of market mechanism of price formation in coal production and the presence of intermediaries. Specificity of the coal industry requires constant reconstruction of capital assets to ensure effective performance indicators of coal mines. Optimal period should not exceed 20 years during removing flat seams, and 10 years for vertical seams, respectively. So in 2005 the picture of coal industry looked like this: objects of extraction in Ukraine were the oldest ones among coal mining regions of CIS countries[*]. Total 14 mines or 8.5% operate with operation term less than 30 years, 73 mines or 44.5% with operation term from 30 to 50 years, and operation term of 77 mines or 47% exceed 50 years, including 36 mines that work more than 70 years. At the same time 82 mines with a depth of mining operations over 700 m, including 29 mines with a depth of 1000 m. About 60.5% of mines considered hazardous because of the sudden gas emissions. Deterioration of Ukrainian mining production was accompanied by reducing number of coal mining enterprises. In Register of the enterprises of coal industry number of enterprises in the beginning of 2005 was 285 mines, while only 164 of them almost did not take part in the coal production. In 1991 their number totalled 275 mines, the number of mines that operated reduced by 1.7 times. In the absence of new construction as well as reconstruction and modernization of existing mines it was a decrease of coal production in the industry from 135.6 million tons in 1991 to 78.0 million tons in 2005. The only measure that was performed by the state was restructuring – shutting down the enterprises. Because of this, coal production decreased on 5 million tons. Arrears[†] of the state to the miners of Donetsk region was 75.8 million UAH. As of the 2005 mines were still unprofitable, but the loss declined. The average price of the coal was 5% lower than the average cost of production in 2005, although among state-owned mines, this figure reached 19%. Cost of production at state-owned mines is on 14% higher than the average costs in Ukraine. As of December 1, 2005 coal sector had unpaid debts amounting to 9.4 billion UAH (1.86 billion U.S. dollars). Significant debts share arose because of taxes or salaries to employees. Although the level of debts increased from year to year, the rate of increase slowed since 1996. It is assumed that the level of coal production and demand is not influenced by the project. Main outcome of the project is on-site heat generation by utilization of

[*] http://masters.donntu.edu.ua/2011/iem/pasichka/library/translate.htm
[†] http://ura.dn.ua/07.10.2005/2625.html

CMM. In the absence of the project activity the same amount of heat would be produced by coal combustion, therefore the same level of service as in the project scenario would be offered in the baseline scenario.

- **Availability of capital (including investment barriers).** SE "Makiyivvuhillya" had no available funds to finance the investment project, which provided performing a number of modernizations. The only incentive for the proposed project implementation was opportunity to receive investments through joint implementation mechanism under the Kyoto Protocol. However attracting investments by IFI's was not possible because of the fact that investment climate of Ukraine was considered risky, capital markets underdeveloped, private capital could be attracted at prohibitively high cost due to real and perceived risks of doing business in Ukraine. This made management of SE "Makiyivvuhillya" seek for solutions requiring minimal investment that could be covered by own funds of the Enterprise, which were very limited.

- **Local availability of technologies/techniques, skills and know-how and availability of the best available technologies/techniques in the future.** Technologies, skills and know-how for implementation of the project activity were available. Ukraine has more than 130 year history of coalmining during which research and development base was created. The technology employed was well known; local suppliers of solutions and equipment were available.

- **Fuel cost and availability.** All industries of Ukraine widely use natural gas, coal and electricity, and percentage depends on the peculiarities of a particular economic sector. Ukraine has well developed supplying networks, and therefore these energy sources are available for most industrial consumers. The main fuel in the country is natural gas and coal used for electricity generation and in metallurgy. At the moment of decision making Ukraine was very dependent on natural gas imports because domestic production volumes did not cover the needs of industry. Prices for natural gas and electricity were established at the state level and were relatively stable for couple of previous years. Natural gas was mainly imported from Russia; its price for Ukraine was lower than for European countries. Coal was cheaper kind of fuel than natural gas, due to large reserves of this fuel in Ukrainian depths.

- **National and/or subnational expansion plans for the energy sector, as appropriate.** Implementation of the project increases energy independence of the enterprise that meets the state strategy for energy policy.

- **National and/or subnational forestry or agricultural policies, as appropriate.** Project realization did not have any relation to any forestry or agricultural policies.

c) **In a transparent manner with regard to the choice of approaches, assumptions, methodologies, parameters, data sources and key factors.**
The project participants applied the selected approach with transparency. Necessary information on approaches, assumptions, parameters, data sources and key factors is available in the PDD.

d) **Taking into account of uncertainties and using conservativeness assumptions.**
Project participants used default values to the extent possible in order to reduce uncertainty and provide conservative data for emission calculations.

e) **In such a way that emission reduction units (ERUs) cannot be earned for decreases in activity levels outside the project activity or due to force majeure.**
According to the proposed approach emission reductions will be earned only within the project activity, so no emission reductions can be earned due to any changes outside the project activity or due to force majeure.

f) **By drawing on the list of standard variables contained in appendix B to "Guidance on criteria for baseline setting and monitoring", as appropriate.**

The PDD draws on the list of standard variables contained in Appendix B to "Guidance on criteria for baseline setting and monitoring", version 03 if necessary:

ρ_{CH_4}	- Methane density, t/m^3;
GWP_{CH_4}	- Global warming potential of methane, tCO_2eq/tCH_4.
NCV_{CH_4}	- Net calorific value of methane, GJ/1000 m^3;
η_{gas}	- Efficiency of the boiler after reconstruction during operating on coal mine methane, fraction;
η_{coal}	- Efficiency of the boiler before reconstruction during operating on coal;
C_{coal}	- Carbon content in coal, t C/t (coal);
$OXID_{coal,y}$	- Carbon oxidation factor for coal in period *y*, fraction;
NCV_{coal}	- Net calorific value of coal, GJ/t;
BE_y	- GHG emissions in the baseline scenario in period *y*, tCO_2e;
$BE_{MR,y}$	- GHG emissions in the baseline scenario as a result of methane emission into the atmosphere in period *y,* tCO_2e;
BE_{HEAT}	- GHG emissions in the baseline scenario as a result of coal burning for heat generation in period *y,* tCO_2e;
PE_y	- GHG emissions in the project scenario in period *y,* tCO_2e;
PE_{MD}	- GHG emissions in the project scenario as a result of methane combustion in the boilers in period *y*, tCO_2e;
PE_{UM}	- GHG emissions in the project scenario as a result of incomplete methane combustion in period *y,* tCO_2e.

As the result of this analysis TÜV Rheinland Japan Ltd. (TÜV Rheinland) can confirm that the baseline for this project is established in accordance with criteria stated in the Appendix B of the JI guidelines and justified in accordance with paragraphs 23-29 of the "Guidance on criteria for baseline setting and monitoring", version 03.

Identified problem areas for baseline setting, project participants' responses and conclusions of TÜV Rheinland Japan Ltd. (TÜV Rheinland) are described in Annex A to the Determination report, (please see CARs 05-06 and CLs 07-09).

4.4 Additionality

In accordance with paragraphs 27-31 of the DVM the assessment of this area focuses on whether a project provides "a reduction in emissions by sources, or an enhancement of net removals by sinks, that is additional to any that would otherwise occur" in accordance with Article 6 of the Kyoto Protocol.

The paragraph 44 of the "Guidance on criteria for baseline setting and monitoring", version 03 defines three following approaches selected for additionality demonstration – points (a), (b), (c).

Project participants used approach of demonstrating additionality by providing transparent information that can be tracked, that similar approach to demonstration of additionality has already been applied in those cases where the determination is considered to be positive, and which can be considered as comparable in applying the criteria for determining the baseline in paragraph 12 of the "Guidance on criteria for baseline setting and monitoring", version 03. "Guidance on criteria for baseline setting and monitoring", version 03 (paragraph 44 (b) of Annex 1) involves the use of this approach to demonstrate that the project will reduce emissions from sources of greenhouse gases that are additional to any that would occur in the absence of the project.

The following steps were performed according to the approach chosen:

- Step 1: Indication and description of the approach applied;
- Step 2: Application of the approach chosen;
    - Sub step 2a: Description of comparable project where an accredited independent entity has already positively determined that it would result in a reduction of anthropogenic emissions by sources or an enhancement of net anthropogenic removals by sinks that is additional in the absence the project
    - Sub step 2b: Demonstration that the identified project is a comparable project (to be) implemented under comparable circumstances

- Step 3: Justification why determination of the comparable project refers to this project;

Assessment of determination team on the application of each step according to the chosen approach is given below.

Step 1. Indication and description of the approach applied.

According to the "Guidance on criteria for baseline setting and monitoring", version 03 TÜV Rheinland Japan Ltd. (TÜV Rheinland) assessed that the project participants used the approach to prove additionality in accordance with paragraph 44 (b) of "Guidance on criteria

for baseline setting and monitoring", version 03. In accordance with paragraph 44 (b) Annex 1 of "Guidance on criteria for baseline setting and monitoring", version 03, additionality can be demonstrated by providing transparent information that can be tracked, that similar approach to demonstration of additionality has already been applied in those cases where the determination is considered to be positive, and which can be considered as comparable in applying the criteria for determining the baseline in paragraph 12 of "Guidance on criteria for baseline setting and monitoring", version 03. Project participants decided to refer to positively determined project determination of which was finalized "CMM Utilisation for Heat Generation and Flaring – "Pivdennodonbaska No 3" (ITL Projects ID: UA2000010).

TÜV Rheinland Japan Ltd. (TÜV Rheinland) through the analysis of the PDD with provided references to publicly available information and follow-up interviews determined that this project has already been implemented or is to be implemented under comparable conditions (the same measures to reduce the negative impact of GHG, the same country, similar technology, similar scale) – will result in reduction of anthropogenic emissions from the sources or enhancing anthropogenic removals by sinks that are additional to any that would occur in the absence of the project, as well as relevant to this project.

Step 2. Application of the approach chosen;
Sub step 2a: Description of comparable project where an accredited independent entity has already positively determined that it would result in a reduction of anthropogenic emissions by sources or an enhancement of net anthropogenic removals by sinks that is additional in the absence the project

Project participants provided information in the PDD that the project "CMM Utilisation for Heat Generation and Flaring – "Pivdennodonbaska No 3" was selected as the comparable JI project. Accredited independent entity has already positively determined that it would result in a reduction of anthropogenic emissions by sources or an enhancement of net anthropogenic removals by sinks that is additional to any that would otherwise occur. This determination has already been deemed final by the JISC. The project design document and Determination Report are clearly and transparently available on the website of the JI UNFCCC: http://ji.unfccc.int/JIITLProject/DB/69TQLBPSCWNP7XINEPV9K0U24YGPJ5/details .

Analysis of the submitted PDD allowed TÜV Rheinland Japan Ltd. (TÜV Rheinland) to assess that the comparative project is indeed finally determined according to information posted on the JI UNFCCC. Determination opinion given AIE TÜV SÜD Industrie Service GmbH in report No. 1192977 dated 19/06/2009 argues that emission reductions achieved by the project are additional to what would be achieved

otherwise. The determination of this project deemed final by JISC UNFCCC.

Sub step 2b: Demonstration that the identified project is a comparable project (to be) implemented under comparable circumstances

Determination team assessed by analysis of the PDD and supporting documents, in accordance with paragraphs 44 and 12 of "Guidance on criteria for baseline setting and monitoring", version 03 project participants demonstrated that for both projects:

1) **Both projects propose the same measures of reducing GHG emissions into atmosphere:** utilization of coal mine methane for heat generation is the main measure, which leads to reduction of greenhouse gases. In any case, boundaries of both projects include the same sources of GHG emissions.
2) **Both projects have comparable geography and implementation time:** both projects are implemented in Ukraine, and the difference between the starting dates of the projects is less than five years – 14/12/2004 for this project and 14/02/2006 for comparable project.
3) **Both projects have similar scale**: both projects are JI large scale projects. In both projects, utilization of coal mine methane of comparable scale is implemented. The proposed project has annual capacity of methane utilization at the level of 10 million m^3 of coal mine methane per mine, and comparable project – at the level up to 7.5 million m^3 of coal mine methane per mine; in other words, annual capacity of the proposed project does not exceed the annual capacity of comparable project more than 50%.
4) **Both projects were implemented in the same regulatory conditions.** Regulatory and legal framework and general regulatory practice between the starting dates of the projects did not change so that these changes influenced the projects baseline.

Thus the criteria identified by the "Guidance on criteria for baseline setting and monitoring", version 03, are satisfied and the identified project is indeed a comparable projects implemented under comparable circumstances.

Step 3: Justification why determination of the comparable project refers to this project.

Analysis of the submitted documentation and follow-up interviews allowed TÜV Rheinland Japan Ltd. (TÜV Rheinland) to conclude that the project "CMM Utilisation for Heat Generation and Flaring – "Pivdennodonbaska No 3" and the proposed project are implemented in the same geographic region of Ukraine – Donbas region of the coal industry. The terms of the plan of project implementation are also quite similar. Both projects have

the same investment profile and market conditions. Investment climate will be comparable in both cases – the coal sector is almost non-profit in Ukraine and is burdened by many problems. Ukrainian coal market is largely controlled by the state. Ministry of Energy and Coal Industry of Ukraine determines the level of productivity of state-owned mines, based on their performance. After that state mines sell their coal to the state trading company "Coal of Ukraine". The company also buys coal from private mines and organizes supplies of coal to thermal power plants. Coal prices vary considerably in the state and private mines.

Sufficient evidence of additionality was presented to the project participants of AIE in the PDD and as supporting documents. All key evidence of this approach has been verified. Evidence was reviewed by the determination team in a transparent manner and is considered to be appropriate.

Analysis of comparative project and application of the chosen approach clearly demonstrates that the proposed project activity is not the baseline scenario. Thus, the proposed project activity is not common, that is the proposed JI project activity will reduce emissions from the sources of greenhouse gases that are additional to any that would occur in the absence of the project.

No issues concerning the project additionality were identified.

4.5 Project boundary

In accordance with paragraphs 32-33 of the DVM the assessment of this area focuses on correct and complete delineation of the project boundary, inclusion and exclusion of any sources of greenhouse gases (GHGs) related to the baseline or the project.

It was assessed through the desk review of submitted documentation and follow-up interviews that project participants used the JI specific approach towards baseline setting in this project and establishing the project boundary.

The details on the project boundary were provided in section B.3. of the PDD. The desk review of submitted documentation enabled TÜV Rheinland Japan Ltd. (TÜV Rheinland) to assess that the project boundary defined in the PDD encompasses all anthropogenic emissions by sources of GHGs that are:

- under the control of the project participants;
- reasonably attributable to the project; and
- significant.

The baseline emission sources of GHGs that are included in the project boundaries are listed below.

- *GHG emissions in the baseline scenario as a result of methane emission into the atmosphere;*
- *GHG emissions in the baseline scenario as a result of coal burning for heat generation.*

The project emission sources of GHGs that are included in the project boundaries are listed below.

- *GHG emissions in the project scenario as a result of the combustion of methane in boilers;*
- *GHG emissions in the project scenario as a result of incomplete combustion of methane.*

All gases and sources included in the project boundary were explicitly stated, and the exclusions of any sources related to the baseline or the project are appropriately justified.

The delineation of the project boundary and the gases and sources included are appropriately described and justified in the PDD by using figures 8-9 and the details were provided by Table 22 in section B.3. of PDD.

Identified problem areas for project boundary, project participants' responses and conclusions of TÜV Rheinland Japan Ltd. (TÜV Rheinland) are described in Annex A to the Determination report (please see CAR 07 and 08).

4.6 Crediting period

In accordance with paragraph 34 of the DVM the assessment of this area focuses on correct and complete provision of information on the projects starting date, expected operational lifetime and the length of the crediting period.

It was assessed through the desk review of submitted documentation and follow-up interviews that the project participants had correctly stated in the PDD:

- **the starting date of the project** is 14/12/2004 (date when an order on the start of refitting boiler houses to gaseous fuel was issued). The starting date of the project is after the beginning of 2000.
- **the expected operational lifetime** of the project in years and months is 15 years or 180 months.
- **the length of the crediting period** (from 01/01/2006 to 31/12/2020) in years and months is 15 years or 180 months.
  Project participants stated 3 parts of crediting period in years and months in the PDD for this project that are:
  - **Part of crediting period within the first commitment period of the Kyoto Protocol** – from 01/01/2008 to 31/12/2012.
    Length of the part of crediting period within the first commitment period of the Kyoto Protocol is 5 years or 60 months.
  - **Part of crediting period before the first commitment period of the Kyoto Protocol** – from 01/01/2006 to 31/12/2007.
    Length of the part of crediting period before the first commitment period of the Kyoto Protocol is 2 years or 24 months.
  - **Part of the crediting period after the end of the first commitment period of the Kyoto Protocol** – from 01/01/2013 to 31/12/2020.
    Length of the part of crediting period after the first commitment period of the Kyoto Protocol is 8 years or 96 months.

The starting date of the crediting period is after the date of the start of generating ERUs under the project.

The desk review of submitted documentation and follow-up interviews enabled TÜV Rheinland Japan Ltd. (TÜV Rheinland) to assess that all information on the projects starting date, expected operational lifetime and the length of the crediting period is correct and complete.

The evidence documents of projects' starting date, operational lifetime, starting date of the crediting period were provided by project participants to the determination team as supporting documents (please refer to

evidence documents # /170/ in Table 2, section 3.1. of the Determination Report).

Identified problem areas for crediting period, project participants' responses and conclusions of TÜV Rheinland Japan Ltd. (TÜV Rheinland) are described in Annex A to the Determination report (please see CAR 09).

4.7 Monitoring plan

In accordance with paragraphs 35-39 of the DVM the assessment of this area focuses on assessing the completeness and correctness of the established monitoring plan and whether it meets the necessary requirements.

The paragraph 35 of the DVM defines two following approaches selected for establishment of the monitoring plan:
(a) JI specific approach;
(b) Approved CDM methodology approach.

The project participants of the project "Utilization of Coal Mine Methane at the SE "Makiyivvuhillya" selected the JI specific approach for establishment of the monitoring plan.

The monitoring plan was established in accordance with criteria stated in Appendix B to decision 9/CMP.1 (JI guidelines). JI specific approach is defined in paragraph 9 (a) of the "Guidance on criteria for baseline setting and monitoring", version 03.

The information indicated below, that refers to the components of monitoring plan, was assessed by TÜV Rheinland Japan Ltd. (TÜV Rheinland) through the desk review of the submitted documentation and follow-up interviews.

I. The chosen monitoring plan includes all procedures necessary for accurate and conservative calculation of emission reductions, describes all relevant factors and key characteristics that will be monitored, and the period in which they will be monitored, in particular also all decisive factors for the control and reporting of project performance.

II. The established monitoring plan specifies the indicators, constants and variables that are reliable and provide consistent and accurate values; are valid and clearly connected with the effect to be measured, and that provide a transparent picture of the emission reductions to be monitored. The default values which were used in the monitoring plan were selected by carefully balancing accuracy and reasonableness.

These values originate from recognized sources, are supported by statistical analyses providing reasonable confidence levels and are presented in a transparent manner in the PDD.

III. For those values that are to be provided by the project participants it is clearly indicated, how the values are to be selected and justified by explanation of what types of sources are to be used and the vintage of data to be used. For all values the precise references from which these values are taken are clearly indicated in section D of the PDD and the conservativeness of the values is justified. The sources from which the data are obtained do not foresee the situations where the expected data are not available.

IV. The International System Units (SI units) are used for values provided by the project participants.

V. Any parameters, coefficients, variables that are used to calculate baseline emissions but are obtained through monitoring are noted. The desk review of the documentation showed that the consistency between the baseline and monitoring plan is ensured.

VI. The project activity will include monitoring of GHG emissions in the baseline and project scenarios. Variables to be monitored in the baseline and project scenarios include the parameters listed in tables 7 and 8 below.

Table 7. Data and parameters that are not monitored throughout the crediting period, but are determined only once and that are available already at the stage of determination regarding the PDD.

Parameter	Unit	Description
ρ_{CH_4}	t/m^3	Methane density
GWP_{CH_4}	tCO$_2$e/ t CH$_4$	Global warming potential of methane
NCV_{CH_4}	GJ/1000 m^3	Net calorific value of methane
η_{gas}	fraction	Efficiency of the boiler after reconstruction during operating on coal mine methane
η_{coal}	fraction	Efficiency of the boiler before reconstruction during operating on coal
C_{coal}	t C/t (coal)	Carbon content in coal
$OXID_{coal,y}$	ratio	Carbon oxidation factor of coal in period *y*
NCV_{coal}	GJ/t	Net calorific value of coal
CEF_{CH_4}	t CO$_2$/т CH$_4$	CO$_2$ emission factor by methane combustion
Eff_{HEAT}	ratio	Efficiency of methane destruction/oxidation of heat generating equipment

Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), but that are not already available at the stage of determination regarding the PDD.

Project participants indicate in the PDD that the parameters such as net calorific value of coal, carbon content in coal, carbon oxidation factor for coal, which are presented in the above tables, may be reviewed at the stage of monitoring according to new publications of relevant documents containing this information.

Table 8. Data and parameters that are monitored throughout the crediting period.

Parameter	Unit	Description
$MD_{CH_4,y}$	m^3	Volume of CMM, utilized in boilers in the project scenario in period *y*

VII. The monitoring plan draws on the list of standard variables contained in Appendix B to "Guidance on criteria for baseline setting and monitoring", version 03, as appropriate:

ρ_{CH_4} - Methane density, t/m^3;

GWP_{CH_4} - Global warming potential of methane, tCO$_2$eq/tCH$_4$;

NCV_{CH_4} - Net calorific value of methane, GJ/1000 m^3;

η_{gas} - Efficiency of the boiler after reconstruction during

operating on coal mine methane, fraction;

η_{coal} - Efficiency of the boiler before reconstruction during operating on coal;

C_{coal} - Carbon content in coal, t C/t (coal);

$OXID_{coal,y}$ - Carbon oxidation factor for coal in period *y*, fraction;

NCV_{coal} - Net calorific value of coal, GJ/t;

BE_y - GHG emissions in the baseline scenario in period *y*, tCO_2e;

$BE_{MR,y}$ - GHG emissions in the baseline scenario as a result of methane emission into the atmosphere in period *y,* tCO_2e;

BE_{HEAT} - GHG emissions in the baseline scenario as a result of coal burning for heat generation in period *y,* tCO_2e;

PE_y - GHG emissions in the project scenario in period *y,* tCO_2e;

PE_{MD} - GHG emissions in the project scenario as a result of methane combustion in the boilers in period *y*, tCO_2e;

PE_{UM} - GHG emissions in the project scenario as a result of incomplete methane combustion in period *y,* tCO_2e.

VIII. The established monitoring plan described the methods employed for data monitoring (including its frequency) and recording. This information is provided in the tabular format in section D.2. of the PDD. The monitoring plan also elaborates all algorithms and formulae used for the calculation of baseline emissions and project emissions. The underlying rationale for the algorithms and formulae is sounded and explained as necessary. The project participants used consistent variables, equation formats, subscripts etc.; numbered all equations throughout the PDD; defined and indicated all variables and constants with units.

IX. The conservativeness of the algorithms and procedures is justified and methods to quantitatively account for uncertainty in key parameters are included, to the extent possible. References for all parameters are provided as necessary. It is clearly stated in the PDD which assumptions and procedures have significant uncertainty associated with them, and how such uncertainty is to be addressed. The desk review of the documentation showed that the consistency between the elaboration of the baseline scenario and the procedure for calculating the emissions of the baseline is ensured.

X. The national and international monitoring standards are not applied to monitor certain aspects of the project.

XI. A clear management structure will be identified to establish the division of responsibilities for gathering monitoring data. Detailed structure of management of the company will be set in the Monitoring

Report before initial and first verification. Executive and management structure of the project for each mine is presented in the PDD.

XII. The PDD indicates that data monitored and required for verification are to be kept for two years after the last transfer of ERUs.

XIII. The monitoring plan, on the whole, reflects good monitoring practices: the structure of data collection is clearly defined; all data concerning the greenhouse gas emissions within the project boundaries is monitored and used in calculations appropriately; all meters are properly calibrated and precisely indicate values of the measured parameters.

The evidence documents that relates to the completeness and correctness of the established monitoring plan were provided by project participants to the determination team as supporting documents (please refer to evidence documents # /63-71/ in Table 2, section 3.1. of the Determination Report).

Identified problem areas for monitoring plan, project participants' responses and conclusions of TÜV Rheinland Japan Ltd. (TÜV Rheinland) are described in Annex A to the Determination report (please see CARs 10-15 and CLs 10-14).

4.8 Leakage

In accordance with paragraphs 40-41 of the DVM this area focuses on checking of the assessment of the potential leakage in the project.

Project participants of "Utilization of Coal Mine Methane at the SE "Makiyivvuhillya" selected JI specific approach for baseline setting.

The only theoretical leakage of the project can be fugitive methane emissions during coal mining method. Extraction of coal produced at the mine "Butivska" and supplied to the mines of SE "Makiyivvuhillya" for burning in reserve boilers can lead to the release of methane and its ejection through the ventilation system into the atmosphere. This leakage is considered to be insignificant and are excluded from consideration for simplification.

Problem issues concerning leakage of the project were not detected.

4.9 Estimation of emission reductions

In accordance with paragraphs 42-47 of the DVM the assessment of this area focuses on checking the completeness and correctness of the provided methods and results of emission reduction estimates in the JI project.

The paragraph 42 of the DVM defines two following approaches to estimate the emission reductions or enhancement of net removals generated by the project selected the JI specific approach:
(a) Assessment of emissions or net removals in the baseline scenario and in the project scenario; or
(b) Direct assessment of emission reductions.

As per JI specific approach project participants chose the following approach to estimate the emission reductions generated by the project: assessment of emissions in the baseline scenario and in the project scenario. According to this approach emission reductions were calculated as follows:

$ER_y = BE_y - PE_y - LE_y$

where:

ER_y – Emission reductions in JI project in year *y* [tCO_2e];
BE_y – Baseline emissions in year *y* [tCO_2e];
PE_y – Project emissions in year *y* [tCO_2e];
LE_y – Leakage in year *y* [tCO_2e].

Ex ante estimates of emissions for the project scenario (within the project boundary), emissions for the baseline scenario (within the project boundary) and emission reductions are provided in Section E of the PDD. These estimates in the PDD are given on a periodic basis, from the beginning until the end of the crediting period, in tonnes of CO_2 equivalent, using appropriate emission factors. The formula used for calculating these estimates are consistent throughout the PDD.

The baseline emissions of the project are calculated under the formula:

$$BE_y = BE_{MR,y} + BE_{HEAT,y}$$

where:

BE_y - GHG emissions in the baseline scenario in period *y*, tCO_2e;
$BE_{MR,y}$ - GHG emissions in the baseline scenario as a result of methane emission into the atmosphere in period *y,* tCO_2e;
BE_{HEAT} - GHG emissions in the baseline scenario as a result of coal burning for heat generation in period *y,* tCO_2e.

GHG emissions in the baseline scenario as a result of methane emission into the atmosphere are calculated as follows:

$$BE_{MR,y} = MD_{CH_4,y} \cdot \rho_{CH_4} \cdot GWP_{CH_4}$$

where:

$MD_{CH_4,y}$ - Volume of coal mine methane utilized in the boilers in the project

scenario in period *y*, m^3;

ρ_{CH_4} - Methane density, t/m^3;

GWP_{CH_4} - Global warming potential of methane, tCO_2/tCH_4.

GHG emissions in the baseline scenario as a result of coal burning for heat generation, replaced by methane in the project line, are calculated as follows:

$$BE_{HEAT,y} = \frac{\left(\frac{MD_{CH_4,y}}{1000} \cdot NCV_{CH_4} \cdot \eta_{gas} \right)}{\eta_{coal}} \cdot \frac{C_{coal} \cdot OXID_{coal,y}}{NCV_{coal}} \cdot \frac{44}{12}$$

where:

$MD_{CH4,y}$ - Volume of coal mine methane utilized in the boilers in the project scenario in period *y*, m^3;

NCV_{CH_4} - Net calorific value of methane, GJ/1000 m^3;

η_{gas} - Efficiency of the boiler after reconstruction during operating on coal mine methane, ratio;

η_{coal} - Efficiency of the boiler before reconstruction during operating on coal;

C_{coal} - Carbon content in coal, t C/t (coal);

$OXID_{coal,y}$ - Carbon oxidation factor for coal in period *y*, ratio;

NCV_{coal} - Net calorific value of coal, GJ/t;

$\frac{44}{12}$ - Ration between molecular mass of CO_2 and C. Reflect oxidation of C to CO_2.

All algorithms and formulae for estimating emissions in the baseline scenario of the project are described under sections B.1 and D.1. of the PDD. The details of the calculation are provided in the GHG emission reductions calculation spreadsheet in Excel format.

The project emissions of the project are calculated under the formula:

$$PE_y = PE_{MD} + PE_{UM}$$

where:

PE_y - GHG emissions in the project scenario in period *y*, tCO_2e;

PE_{MD} - GHG emissions in the project scenario as a result of methane combustion in the boilers in period *y*, tCO_2e;

PE_{UM} - GHG emissions in the project scenario as a result of incomplete methane combustion in period *y*, tCO_2e;

GHG emissions in the project scenario as a result of methane combustion in the boilers are calculated as follows:

$$PE_{MD} = MD_{CH_4} \cdot \rho_{CH_4} \cdot CEF_{CH_4} \cdot Eff_{HEAT}$$

where:

$MD_{CH_4,y}$ - Volume of CMM, utilized in boilers in the project scenario in period *y*, m^3;

ρ_{CH_4} - Methane density, t/m^3;

CEF_{CH_4} - CO_2 emission factor by methane combustion, t CO_2/т CH_4;

Eff_{HEAT} - Efficiency of methane destruction/oxidation of heat generating equipment, ratio.

GHG emissions in the project scenario as a result of incomplete methane combustion are calculated as follows:

$$PE_{UM} = MD_{CH_4} \cdot \rho_{CH_4} \cdot (1 - Eff_{HEAT}) \cdot GWP_{CH_4}$$

where:

$MD_{CH_4,y}$ - Volume of CMM, utilized in boilers in the project scenario in period *y*, m^3;

ρ_{CH_4} - Methane density, t/m^3;

Eff_{HEAT} - Efficiency of methane destruction/oxidation of heat generating equipment, ratio.

GWP_{CH_4} - Global warming potential of methane, $tCO_2eq/t\ CH_4$.

All algorithms and formulae for estimating emissions in the project scenario of each subproject are described under sections B.1. and D.1. of the PDD. The details of the calculation are provided in the GHG emission reductions calculation spreadsheet in Excel format.

No leakage during project activity occur.

It was assessed by the desk review of submitted documentation, especially GHG emission reductions calculation spreadsheet in Excel format that key factors influencing the baseline emissions and the activity level of the project and the emissions as well as risks associated with the project were taken into account. Data sources used for calculating the estimates referred above are clearly identified, reliable and transparent. Emission factors used for calculating the estimates referred to above, were selected by carefully balancing accuracy and reasonableness, and the choice is appropriately justified. The estimation referred to above is based on conservative assumptions and the most plausible scenarios in a transparent manner. The estimates of emission reductions are consistent throughout the PDD. The annual average of estimated emission reductions over the crediting period is calculated by dividing the total estimated emission reductions over the crediting period by the total months of the crediting period, and multiplying by twelve.

According to the PDD and GHG emission reductions calculation spreadsheet in Excel format the emissions for the project scenario, emissions for the baseline scenario and emission reductions are provided in Tables 10 and 11 below.

Table 10 – Estimated emission reductions generated by the project over the part of crediting period within the first commitment period of the Kyoto Protocol

Period:	01/01/2008-31/12/2012
Emissions in the project scenario, tCO_2e	145,281
Leakage, tCO_2e	-
Emissions in the baseline scenario, tCO_2e	1,483,150
Emission reductions, tCO_2e	1,337,869
Average annual amount of emission reductions, tCO_2e	267,574

Table 11 – Estimated emission reductions generated by the project over the part of crediting period before the first commitment period of the Kyoto Protocol

Period:	01/01/2006-31/12/2007
Emissions in the project scenario, tCO_2e	60,426
Leakage, tCO_2e	-
Emissions in the baseline scenario, tCO_2e	616,962

Emission reductions, tCO_2e	556,536
Average annual amount of emission reductions, tCO_2e	278,268

Table 12 – Estimated emission reductions generated by the project over the part of the crediting period after the end of the first commitment period of the Kyoto Protocol

Period:	01/01/2013-31/12/2020
Emissions in the project scenario, tCO_2e	234,528
Leakage, tCO_2e	-
Emissions in the baseline scenario, tCO_2e	2,393,952
Emission reductions, tCO_2e	2,159,424
Average annual amount of emission reductions, tCO_2e	269,928

TÜV Rheinland Japan Ltd. (TÜV Rheinland) did not define any problematic issues concerning the calculation of GHG emission reductions.

4.10 Environmental impacts

In accordance with paragraph 48 of the DVM the assessment of this area focuses on checking the completeness and correctness of the provided information on the assessment of the environmental impacts of the JI project.

The host Party for the project is Ukraine. The conclusions and all references to supporting documentation on the environmental impact is given in Section F of the PDD.

Project implementation does not influence negatively on the environment; in fact, the impact of this project is assessed as positive. According to the requirements of the host party, there was no need to develop the EIA for this activity.

The evidence documents of environmental impacts were provided by project participants to the determination team as supporting documents (please refer to evidence documents # /171/ in Table 2 – Documents reviewed during the determination in section 3.1. of the Determination Report).

Identified problem areas for environmental impacts, project participants' responses and conclusions of TÜV Rheinland Japan Ltd. (TÜV Rheinland) are described in Annex A to the Determination report (please see CAR 16).

4.11 Stakeholder consultation

In accordance with paragraph 49 of the DVM the analysis of this area focuses on checking if stakeholder consultation was undertaken in accordance with procedures as required by the host Party.

The host Party for the project is Ukraine. Host Party did not put forward the request to consult with stakeholders for JI projects. Stakeholder comments will be collected during the publication of this project documents in the Internet during the determination procedure.

TÜV Rheinland Japan Ltd. (TÜV Rheinland) did not define any problematic issues concerning the calculation of GHG emission reductions.

4.12 Other areas

In accordance with paragraphs 50-73 of the DVM the assessment of the areas such as additional elements for assessment in determination regarding small scale projects, determination regarding land use, land-use change and forestry projects, determination regarding programmes of activities is not applicable to this JI project.

5 SUMMARY OF COMMENTS RECEIVED PURSUANT TO PARAGRAPH 32 OF THE JI GUIDELINES

According to paragraph 32 of the JI Guidelines, the AIE shall make the project design document publicly available through the secretariat, subject to confidentiality provisions set out in paragraph 40 of the JI Guidelines, and receive comments from Parties, stakeholders and UNFCCC accredited observers on the project design document and any supporting information for 30 days from the date the project design document is made publicly available.

TÜV Rheinland Japan Ltd. (TÜV Rheinland) published the project design document (version 1.0 dated 01/08/2012) on the website (http://www.tuv.com.ua) 14/08/2012 and invited comments by Parties, stakeholders and UNFCCC accredited observers until 14/09/2012.

There were no comments from Parties, stakeholders and UNFCCC accredited observers received.

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ANNEX A: JI PROJECT DETERMINATION PROTOCOL

Table 1 Mandatory Requirement for Joint Implementation (JI) Project Activities

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference/Comment
1. The project shall have the approval of the Parties involved.	Kyoto Protocol Article 6.1 (a)	**FAR 01**	Table 2, Section A.5. **FAR 01**. The project does not have an approval of the Parties involved. Glossary of joint implementation terms, version 03, defines the following: a) At least the written project approval(s) by the host Party(ies) should be provided to the AIE and made available to the secretariat by the AIE when submitting the determination report regarding the PDD for publication in accordance with paragraph 34 of the JI guidelines; b) At least one written project approval by a Party involved in the JI project, other than the host Party(ies), should be provided to the AIE and made available to the secretariat by the AIE when submitting the first verification report for publication in accordance with paragraph 38 of the JI guidelines, at the latest. For receiving Letter of Approval the final Determination Report shall be

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference/Comment
			submitted to State Environmental Investment Agency of Ukraine. Written project approval by the Party involved in the JI project, except host Party, will be received before the first verification of the project.
2. Emission reductions, or an enhancement of removal by sinks, shall be additional to any that would otherwise occur.	Kyoto Protocol Article 6.1 (b)	**OK**	Please refer to Table 2, Section B.
3. The sponsor Party shall not acquire emission reduction units if it is not in compliance with its obligations under Articles 5 & 7.	Kyoto Protocol Article 6.1 (c)	**OK**	Article 5 requires: "Each Party included in Annex I shall have in place, no later than one year prior to the start of the first commitment period, a national system for the estimation of anthropogenic emissions by sources and removals by sinks of all greenhouse gases". According to the Article 7: "Annex I Parties to submit annual greenhouse gas inventories, as well as national communications, at regular intervals, both including supplementary information to demonstrate compliance with the Protocol".
4. The acquisition of emission reduction units shall be supplemental to domestic actions for the purpose of meeting commitments under Article 3.	Kyoto Protocol Article 6.1 (d)	**OK**	Please refer to Table 2, Section B.2.
5. Parties participating in joint implementation designate national control entity for approving JI projects and have in place national rules and procedures for the approval of JI projects.	Marrakech Accord, JI Modalities, §20	**OK**	Ukraine has designated its control entity. National rules and procedures for approving JI projects have been published.

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference/Comment
			Contact data in Ukraine: State Environmental Investment Agency of Ukraine 35 Urytskogo Str., Kyiv, P.O. 03035, Phone: +380 44 594 91 11 Fax: +380 44 5949115 National rules and procedures for the approval of JI projects are on the site www.neia.gov.ua. On February 22, 2006 the Cabinet of Ministers of Ukraine adopted the Regulation # 206, which established assessment and implementation procedures of JI projects within the Kyoto Protocol.
6. The host Party shall be a Party to the Kyoto Protocol.	Marrakech Accord, JI Modalities, §21(a)/24	**OK**	The Ukraine is a Party (Annex I Party) to the Kyoto Protocol and has ratified the Kyoto Protocol at February 4th, 2004.
7. The host Party's assigned amount shall have been calculated and recorded in accordance with the modalities for the accounting of assigned amounts.	Marrakech Accord, JI Modalities, §21(b)/24	**OK**	The arranged extent for Ukraine is 100% of its emissions by 1990. In the Initial Report (Ukraine's Initial Report Under Article 7, Paragraph 4, Of The Kyoto Protocol) submitted by Ukraine to the UNFCCC Secretariat, on the 26 May 2006 the AAUs are quantified with: 925 362 174.39 (x 5) = 4 626 810 872 tCO_2e http://unfccc.int/files/national_reports

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference/Comment
			/initial_reports_under_the_kyoto_protocol/application/pdf/ukraine_aa_report.pdf Currently Ukraine has submitted to the UNFCCC its fifth national communication on climate change under the Kyoto Protocol.
8. The host Party shall have in place a national registry in accordance with Article 7, paragraph 4.	Marrakech Accord, JI Modalities, §21(d)/24	**OK**	The designed system of the national registry has been described in the Initial Report: http://unfccc.int/files/national_reports/initial_reports_under_the_kyoto_protocol/application/pdf/ukraine_aa_report.pdf
9. Project participants shall submit to the independent entity a project design document that contains all information needed for the determination.	Marrakech Accord, JI Modalities, §31	**OK**	Project participants submitted PDD that contains all information needed for the determination.
10. The project design document shall be made publicly available and Parties, stakeholders and UNFCCC accredited observers shall be invited to, within 30 days, provide comments.	Marrakech Accord, JI Modalities, §32	**OK**	TÜV Rheinland Japan Ltd. (TÜV Rheinland) published the project design document on the website http://www.tuv.com.ua in the period from 14/08/2012 until 14/09/2012. No comments from Parties, stakeholders and accredited observers of UNFCCC were received.
11. Documentation on the analysis of the environmental impacts of the project activity, including transboundary impacts, in accordance with procedures as determined by the	Marrakech Accord, JI Modalities, §33(d)	**OK**	Please refer to Table 2, Section F.

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference/Comment
host Party shall be submitted, and, if those impacts are considered significant by the project participants or the host Party, an environmental impact assessment in accordance with procedures as required by the host Party shall be carried out.			
12. The baseline for a JI project shall be the scenario that reasonably represents the GHG emissions or removal by sources that would occur in absence of the proposed project.	Marrakech Accord, JI Modalities, Appendix B	**OK**	Please refer to Table 2, Section B.
13. A baseline shall be established on a project-specific basis, in a transparent manner and taking into account relevant national and/or sectoral policies and circumstances.	Marrakech Accord, JI Modalities, Appendix B	**OK**	Please refer to Table 2, Section B.
14. The baseline methodology shall exclude to earn ERUs for decreases in activity levels outside the project activity or due to force majeure.	Marrakech Accord, JI Modalities, Appendix B	**OK**	Please refer to Table 2, Section B.
15. The project shall have an appropriate monitoring plan.	Marrakech Accord, JI Modalities, §33(c)	**OK**	Please refer to Table 2, Section D.
16. A project participant is a legal entity authorized by a Party involved to participate in the JI project.	"Glossary of Joint Implementation Terms", Version 03.	Conclusion is pending **FAR 01** solution.	Please refer to Table 2, Section A.

Table 2 Requirements Checklist

CHECKLIST QUESTION	REF.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
A. General description of the project					
A.1. Title of the project					
1.1. Is the title of the project activity presented?	PDD	DR	Yes. Title of the project "Utilization of Coal Mine Methane at the SE "Makiyivvuhillya".	OK	OK
1.2. Is (are) the sectoral scope(s) to which the project pertains presented?	PDD	DR	Yes, the sectoral scope is indicated as Sectoral scope 8. Mining/mineral production	OK	OK
1.3. Are the version number and date of the document presented?	PDD	DR	Yes, the version number of the document and the date are presented as: version of the PDD: 1.0. Date of the PDD: August 1, 2012. Re-presented the final version of the PDD: version of the PDD: 2.0. Date of the PDD: September 20, 2012	OK	OK
A.2. Description of the project					
2.1. Is the purpose of the project indicated (with the concise, summarizing explanation of the situation existing prior to the starting date of the project, baseline scenario and project scenario)?	PDD	DR	Purpose and objectives of the project are indicated in Section A.2. of the PDD. The situation existing prior to the starting date of the project, baseline and project scenarios are summarized.	OK	OK
2.2. Is the brief history of the Project including its JI component summarized?	PDD	DR	Brief history of the Project including its JI component is provided.	OK	OK
2.1.1. Is it clarified how the proposed project activity reduces emissions GHG that would occur	PDD	DR	Section A.2. of the PDD provides a brief description of how emission reductions will be achieved under the existing situation before	OK	OK

CHECKLIST QUESTION	REF.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
in the baseline scenario?			the project implementation.		
A.3. Project participants					
3.1. Are project participants and Party (ies) involved in the project listed?	PDD	DR	Yes. One project participant from one Party involved is indicated in the PDD: SE "Makiyivvuhillya" from Ukraine. **CL 01.** Explain the situation on participation of the other Party in the project (except the host Party).	**CL 01**	OK
3.2. Is contact information provided in Annex 1 of the PDD that is indicated in section A.3?	PDD	DR	The contact information of project participants is indicated in Section A.3., provided in Annex 1.	OK	OK
3.3. Is it indicated, if the Party involved is a Host Party?	PDD	DR	Ukraine is a country where the project is implemented.	OK	OK
3.4. Is it indicated, if it is the case, if the Party involved wishes to be considered as a project participant?	PDD	DR	Parties involved don't wish to be considered project participants.	OK	OK
A.4. Technical description of the project					
A.4.1. Location of the project					
4.1.1. Host Party(ies)	PDD	DR	Ukraine	OK	OK
4.1.2. Region/State/Province etc.	PDD	DR	Donetsk region, eastern Ukraine	OK	OK
4.1.3. City/Town/Community etc.	PDD	DR	Makiivka	OK	OK
4.1.4. Detail of the physical location, including information allowing the unique identification of the project (maximum one page)					

CHECKLIST QUESTION	REF.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
4.1.4.1. Does the information provided on the location of the project activity allow for a clear identification of the site(s) (this section should not exceed one page)?	PDD	DR	The exact geographical coordinates of the project sites are accurately and uniquely determine their location. The volume of the given information does not exceed one page.	OK	OK
A.4.2. Technology(ies) to be employed, or measures, operations or actions to be implemented by the project					
4.2.1. Are the technology (ies) to be employed, or measures, operations or actions to be implemented by the project described?	PDD	DR	In order to implement the proposed project, a number of technical improvements in degassing complex of coal mines were performed, as well as modernization of existing boilers were performed that worked on fossil fuels (coal) by transfer them to gaseous fuel (methane). For the purpose of coal mine methane utilization were taken the following steps: reconstruction of boilers, construction of new pipelines, introduction of new vacuum-pump stations, optimization and modernization of the accounting system of methane and etc. These measures are described in Section A.4.2. of the PDD. **CAR 01**. Please provide brief information on the basic sources of heat energy consumption, generated by the project. **CAR 02**. Provide information on the types and amount of fuel that was used from the beginning of the project at the enterprise. **CL 02**. Explain if coal mine methane is used or utilized in the period of reduction of loading and need for heat energy (summer period).	**CARs 01-02 CL 02**	OK

CHECKLIST QUESTION	REF.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
4.2.1.1. Does the project design engineering reflect current good practices?	PDD	DR	Project development contains common elements of the projects on CMM utilization and generally reflects the current engineering practices. Description of the project development are presented in Section A.4.2. of the PDD. **CL 03**. Explain does the project reflect current engineering practices?	**CL 03**	OK
4.2.1.2. Does the project use state of the art technology or would the technology result in a significantly better performance than any commonly used technologies in the Host country?	PDD	DR	Section A.4.2. of the PDD does not provide the level of project technologies and whether work from the implementation of the project activities will improve. **CL 04:** Please give an explanation for each of the components of the project if in the project advanced technologies are used and if the project requires large capital investments for the implementation of project activities.	**CL 04**	OK
4.2.1.3. Is the project technology likely to be substituted by other or more efficient technologies within the project period?	PDD	DR	As it is stated in Section A.4.2 of the PDD, project technology will probably not be replaced by other or more efficient technologies within the project period, but there is no clear statement. **CL 05.** Explain if the change in technology or the introduction of new technologies for CMM utilization during the crediting period is possible.	**CL 05**	OK

CHECKLIST QUESTION	REF.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
4.2.2. Are all relevant technical data and the implementation schedule indicated?	PDD	DR	Relevant technical data and the implementation schedule are indicated in the Section A.4.2 of the PDD. To ensure the transparency it is needed to provide some clarifications. **CL 06**: Please clarify if project is implemented at 4-mine sites in the same time intervals. **CAR 03**: Correct the discrepancies between fonts (size, etc.) throughout the PDD.	**CAR 03 CL 06**	OK
A.4.3. Brief explanation of how the anthropogenic emissions of greenhouse gases by sources are to be reduced by the proposed JI project, including why the emission reductions would not occur in the absence of the proposed project, taking into account national and/or sectoral policies and circumstances:					
4.3.1. Is it stated how anthropogenic GHG emission reductions from sources by the proposed project are to be achieved?	PDD	DR	Information in Section A.4.3 represents the review of national policies and circumstances, and gives a summary of the reasons why the emission reductions would not occur in the absence of the proposed project.	OK	OK
4.3.2. Is it indicated why the emission reductions would not occur in the absence of the proposed project, taking into account national and/or sectoral policies and existing circumstances?	PDD	DR	Emission reductions would not occur in the absence of the project because no reconstruction would be made to allow CMM capturing and utilizing. Consequently, CMM would be vented into the atmosphere and heat energy produced by coal combustion in boiler houses of the mines. Information is present in Section A.4.3 of the PDD.	OK	OK

CHECKLIST QUESTION	REF.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
4.3.3. Is the estimated overall emission reductions indicated in tCO_2 equivalent as it is determined in Section E of the PDD? (This section should not exceed one page)	PDD	DR	The estimated overall emission reductions in tCO_2 equivalent as it is determined in Section E of the PDD is indicated in Section A.4.3.1 of the PDD. The volume of the information does not exceed one page.	OK	OK
A.4.3.1. Estimated amount of emission reductions over the crediting period					
4.3.1.1. Is the length of the crediting period and the estimated overall, as well as annual, emission reductions indicated in the corresponding tabular form?	PDD	DR	The length of the crediting period and the estimated overall, as well as annual, emission reductions is indicated in the corresponding tabular form in Section A.4.3.1 of the PDD. **CAR 04.** Please correct the period for which GHG emission reductions for the part of the crediting period are calculated.	**CAR 04**	OK
4.3.1.2. Is annual average of estimated emission reduction or increasing removals of greenhouse gases calculated by dividing the total sum of estimated emission reductions or increasing removals of greenhouse gases over the crediting period by the total months of the crediting period, and multiplying by twelve?	PDD	DR	The annual average of estimated emission reduction of greenhouse gases is calculated by dividing the total sum of estimated emission reductions or increasing removals of greenhouse gases over the crediting period by the total months of the crediting period, and multiplying by twelve. This data is indicated in the corresponding tabular form in Section A.4.3.1 of the PDD.	OK	OK
A.5. Project approval by the Parties involved					
5.1. Are written project approvals by the Parties involved attached? Are they unconditional?	PDD	DR	As it is stated in Section A.5 of the PDD, the project received Letter of Endorsement from DFP of Ukraine. Project approval by the Country where the project is implemented and Country-investor is expected after	**CAR**	OK

CHECKLIST QUESTION	REF.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
			Determination process. Please see Table 1. **FAR 01**		
B. Baseline					
B.1 Description and justification of the baseline chosen					
1.1. Is it indicated in PDD: - a detailed theoretical description of the baseline in a complete and transparent manner, as well as a justification of chosen baseline using the step-wise approach; - a justification of baseline setting; - references on regulations according to baseline setting?	PDD	DR	The baseline for this JI project was set in accordance with Annex B of the JI guidelines and paragraphs 23-29 of Guidelines on criteria for baseline setting and monitoring. The detailed theoretical description of the baseline is presented in Section B.1. of the PDD. To set the baseline, project participants have chosen JI specific approach. Project participants provided justification on setting baseline according to Guidelines on criteria for baseline setting and monitoring using the step-wise method and provided all references to regulations on setting baseline in Section B.1. of the PDD. **CAR 05.** Provide justification that the boilers could produce the same amount of heat as in the baseline scenario taking into account the fact that coal mine methane has a variable calorific value depending on the concentration and have sufficient residual lifetime. **CL 07.** If the introduction of measures on CMM utilization is not registered as a compulsory measure what priority directions are identified	**CAR 05** **CL 07**	OK

CHECKLIST QUESTION	REF.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
			in the coal industry.		
1.2. Is the chosen approach on baseline setting with reference to the regulations clearly stated in the PDD?	PDD	DR	Project participants chosen approach on the baseline setting specified in Guidelines on criteria for baseline setting and monitoring. **CL 08.** Specify exactly which approach is defined in the regulations was chosen for baseline setting.	**CL 08**	OK
1.3. Is it indicated in the PDD that baseline was established:					
1.3.1. by listing and describing plausible (alternative) future scenarios on the basis of conservative assumptions and selecting the most plausible one?	PDD	DR	Project baseline was set by listing and describing plausible (alternative) future scenarios and selecting the most plausible of them, as it is described in Section B.1. of the PDD. **CL 09**. Is the experience of other mines that have implemented technology of CMM utilization at their enterprises taken into account.	**CL 09**	OK
1.3.2. taking into account relevant national and/or sectoral policies and circumstances, such as sectoral reform initiatives, local fuel availability, power sector expansion plans, and the economic situation in the project sector?	PDD	DR	Section B.1. of the PDD explains in details that the baseline was set taking into account relevant national and/or sectoral policies and circumstances, such as sectoral reform initiatives, local fuel availability, power sector expansion plans, and the economic situation in the project sector.	OK	OK
1.3.3. in a transparent manner with regard to the choice of approaches, assumptions, methodologies, parameters, data sources and	PDD	DR	Section B.1. of the PDD explains in details that the baseline was set in a transparent manner with regard to the choice of approaches,	OK	OK

CHECKLIST QUESTION	REF.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
key factors?			assumptions, methodologies, parameters, data sources and key factors.		
1.3.4. taking account uncertainties and using conservative assumptions?	PDD	DR	Section B.1. of the PDD explains in details that the baseline was set taking account uncertainties and using conservative assumptions. **CAR 06.** Please add the information which conservative assumptions were used.	**CAR 06**	OK
1.3.5. in such a way that emission reduction units (ERUs) cannot be earned for decreases in activity levels outside the project activity or due to force majeure?	PDD	DR	Section B.1. of the PDD explains in details that the baseline was set in such a way that emission reduction units (ERUs) cannot be earned for decreases in activity levels outside the project activity or due to force majeure.	OK	OK
1.3.6. based on list of standard variables contained in Annex B to Guidelines on criteria for baseline setting and monitoring?	PDD	DR	Data, variables and parameters were used in accordance with Annex B Guidelines on criteria for baseline setting and monitoring.	OK	OK
1.4. If multiproject emission factor is used is appropriate justification available in the PDD?	PDD	DR	It is not indicated in Section B.1. of the PDD that the baseline was set using multiproject emission factors and appropriate justification is not provided.	OK	OK
1.5. Is the name, number and version of the approved CDM methodology clearly stated in context of the project?	PDD	DR	CDM methodology is not applicable in this project.	OK	OK
1.6. Is the applied version of the CDM methodology the most recent one and/or is this version still applicable?	PDD	DR	CDM methodology is not applicable in this project.	OK	OK
1.7. Is it described how the chosen approach is applied	PDD	DR	Description how the chosen approach in the context of the project was used is stepwise	OK	OK

CHECKLIST QUESTION	REF.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
in the context of the project?			outlined in Section B.1. of the PDD.		
1.8. Are the key information and data used to establish the baseline (variables, parameters, data sources etc.) indicated in tabular form?	PDD	DR	All key information and data used to establish the baseline (variables, parameters, data sources etc.) in the relevant tabular form are indicated in Section B.1. of the PDD.	OK	OK
1.9. Are all regulations and sources clearly referenced?	PDD	DR	All regulations and sources are clearly referenced in the PDD.	OK	OK
B.2. Description of how the anthropogenic emissions of greenhouse gases by sources are reduced below those that would have occurred in the absence of the JI project					
2.1. Is the step-wise approach used for the demonstration of project additionality indicated and described?	PDD	DR	In order to demonstrate the project additionality, project participants used the step-wise approach in accordance with Paragraph 44 (b) of Annex 1 of Guidelines on criteria for baseline setting and monitoring, Version 03. This approach is completely described in Section B.2. of the PDD.	OK	OK
2.2. Does the PDD provide a justification of the applicability of the approach with a clear and transparent description with relevant reference on regulations?	PDD	DR	Project participants provided clear and traceable information indicating that a similar approach to demonstrating additionality has already been applied in those cases where the determination is considered to be final, and which can be considered as comparative when applying the criteria for setting baseline in Paragraph 12 of the Guideline.	OK	OK
2.3. Is it described how the chosen approach is applied in the context of the project?	PDD	DR	Section B.2. of the PDD provided the detailed description how the chosen approach is applied in the context of the project.	OK	OK
2.4. Are additionality proofs provided?					

CHECKLIST QUESTION	REF.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
2.4.1. If the application of the most recent version of the "Tool for the demonstration and assessment of additionality" is chosen, are all explanations, descriptions and analyses made in accordance with the selected tool or method?	PDD	DR	To demonstrate the additionality the project participants did not use "Tool for the demonstration and assessment of additionality", and provided information which indicates that the project is a comparative to the already positively determined project.	OK	OK
2.4.2. Is an analysis showing why the emissions in the baseline scenario would likely exceed the emissions in the project scenario included?	PDD	DR	PDD provides transparent information, which can be tracked and which has already received positive determination from accredited independent entity that comparative project "CMM Utilisation for Heat Generation and Flaring – "Pivdennodonbaska No 3" (ITL Projects ID: UA2000010) implemented under comparable conditions (same measures of reducing emissions, same country, similar technology, similar scale of the project), will result in reduction of anthropogenic emissions from sources or enhancing anthropogenic removals of GHG by sinks that are additional to those that would occur in the absence of the project.	OK	OK
2.4.3. Is it demonstrated that the project activity itself is not a likely baseline scenario?	PDD	DR	It is demonstrated in Section B.2. of the PDD that the project activity itself is not a likely baseline scenario because of significant investment barriers.	OK	OK
2.5. Are national policies and circumstances relevant to the baseline of the proposed project activity summarized?	PDD	DR	Yes, compliance of alternative future scenarios with mandatory laws and regulations is described in Section B.2. of the PDD.	OK	OK
B.3. Description of how the definition of the project boundary is applied to the project					
3.1. Does the project boundary defined in the PDD	PDD	DR/I	Included sources of GHG emissions are	**CARs**	OK

CHECKLIST QUESTION	REF.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
encompass all anthropogenic emissions by sources of GHGs that are: - under the control of the project participants; - reasonably attributable to the project; - significant?			described in Section B.3. of the PDD. Not all relevant sources were included. **CAR 07**. Justify exclusion of coal consumption by boiler houses as a source of project emissions. **CAR 08**. Since the project envisages expansion of degassing system, then justify the exclusion of energy consumption as a source of project emissions.	**07-08**	
3.2. Is the project boundary defined on the basis of a case-by-case assessment with regard to the criteria referred to in 3.1 above?	PDD	DR	Project boundary is defined on the basis of a case-by-case assessment. Boundaries of the baseline scenario include boiler houses at the mines of SE "Makiyivvuhillya" and their degassing system, as well as connecting pipeline.	OK	OK
3.3. Is the definition of the project boundary and included gases and sources described and appropriately justified in the PDD using the appropriate figure or flowchart?	PDD	DR	Relevant and justified description of the project boundary is presented in Section B.3. of the PDD with their definitions in Figures (Figure 7 and 8).	OK	OK
3.4. Are all gases and sources included explicitly stated, and the exclusions of any sources related to the baseline or the project are appropriately justified?	PDD	DR	All gases and sources under the project are explicitly stated in Table 20, also presented in Section B.3. of the PDD.	OK	OK
B.4. Further baseline information, including the date of baseline setting and the name(s) of the person(s)/entity(ies) setting the baseline					
4.1. Is the date of the baseline setting presented (in DD/MM/YYYY)?	PDD	DR	Data of the baseline setting: August 7, 2012 is presented in PDD, Section B.4.	OK	OK

CHECKLIST QUESTION	REF.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
4.2. Is the contact information of persons setting the baseline provided?	PDD	DR	Makarenko Serhiy Vasyliovych from the company "SPA "Energometan" LLC is the person who establishes the baseline. All contact information is provided in Annex 1 of the PDD.	OK	OK
4.3. Is the person/entity also a project participant listed in Annex 1 of PDD?	PDD	DR	"SPA "Energometan" LLC is not a project participant. All contact data is provided in Annex 1 of the PDD.	OK	OK
C. Duration of the project/crediting period					
C.1. Starting date of the project					
1.1. Is the project's starting date clearly defined?	PDD	DR	The project's starting date: December 14, 2004. **CAR 09**. Starting date of the JI project should reflect the starting date of implementation or construction or real actions under the project.	**CAR 09**	OK
1.2. Does the PDD state the starting date of the project as the date on which the implementation or construction or real action of the project will begin or began?	PDD	DR	The indicated project starting date is the date when the actual project activity began.	OK	OK
1.3. Is the starting date after the beginning of 2000?	PDD	DR	Yes. The starting date is after the beginning of 2000.	OK	OK
C.2. Expected operational lifetime of the project					
2.1. Is the project's operational lifetime clearly defined in years and months?	PDD	DR/I	Yes, the project's operational lifetime is 15 years or 180 months.	OK	OK

CHECKLIST QUESTION	REF.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
C.3. Length of the crediting period					
3.1. Is the length of the crediting period specified in years and months?	PDD	DR	The length of the crediting period: 13 years or 156 months. Including: • length of the part of crediting period during the first commitment period under the Kyoto Protocol: 5 years or 60 months (01/01/2008-31/12/2012) • length of the part of crediting period after the first commitment period under the Kyoto Protocol is 8 years or 96 months (01/01/2013-31/12/2020).	OK	OK
3.2. Is it stated in the PDD that the crediting period for issuance of ERUs starts only after the beginning of 2008 and does not exceed project's operational lifetime?	PDD	DR	Yes, please see Section C.3. of the PDD.	OK	OK
3.3. If the crediting period extends beyond 2012, does the PDD state that the extension is subject to the host Party approval? Are the estimates of emission reductions presented separately for those until 2012 and those after 2012?	PDD	DR	Please see Section C.3. of the PDD. estimates of emission reductions for the period before and after 2012 are presented separately in Section A.4.3.1. of PDD.	OK	OK
D. Monitoring Plan					
D.1. Description of monitoring plan chosen					
1.1. Is it indicated in PDD a detailed theoretical description in a complete and transparent manner, as well as a justification of chosen monitoring plan using the step-wise approach?	PDD	DR	Detailed theoretical description in a complete and transparent manner, as well as a justification of chosen monitoring plan using the step-wise approach was provided by the project participants in Section D.1. of the PDD. The project used Option (a) from "Guidelines	OK	OK

CHECKLIST QUESTION	REF.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
			for users of the Joint Implementation project design document form" version 04, in this project specific approach for JI projects is used, so it will be used for setting monitoring plan.		
1.2. Does the PDD explicitly indicate the chosen approach used for monitoring with references on regulations?	PDD	DR	Pursuant to Section D.1. of the PDD JI specific approach is used for monitoring in accordance with paragraph 9 (a) of Guidelines on criteria for baseline setting and monitoring. Stepwise approach is used to describe the monitoring plan.	OK	OK
1.3. Is the applied methodology considered being the most appropriate one?	PDD	DR	CDM methodology is not applicable in this project. JI specific approach is used for setting monitoring plan. However, not all parameters needed for accurate determination of GHG emissions are specified. **CAR 10**. Provide documents confirming the carbon content of coal used as fuel in the baseline scenario.	**CAR 10**	OK
1.4. If national or international monitoring standard has to be applied to monitor certain aspects of the project, is this standard identified and is the reference as to where a detailed description of the standard can be found provided?	PDD	DR	Monitoring plan does not require the use of international or national standards for monitoring. **CAR 11**. Provide information on certification of laboratory, which is used to determine NCV of coal.	**CAR 11**	OK
1.5. Are the description of the assumptions, formulas, parameters, data sources and key factors indicated?	PDD	DR	The assumptions, formulas, parameters, data sources and key factors are described in Section D of the PDD.	**CAR 12 CLs**	OK

CHECKLIST QUESTION	REF.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
			CL 10. The value of methane density is taken based on the standard gas parameters (temperature 20°C, pressure 101325 Pa), explain how this value is adjusted based on the actual conditions of data logging. **CL 11.** Is there confirmation that coefficient of efficiency of the old coal boilers before modernization was not higher than that stated in the PDD. **CL 12.** Was the expertise of boilers conducted after refitting them for coal mine methane combustion with the definition of its operating characteristics: coefficient of efficiency, productivity, and etc. **CAR 12.** Carbon oxidation factor for coal is an immeasurable value, correct the mistake.	**10-12**	
1.5.1. Is it stated how uncertainties are taken into account and conservativeness is safeguarded?	PDD	DR	It is not stated in Section D of the PDD how uncertainties are taken into account and conservativeness is safeguarded. **CAR 13.** Please provide a list indicating how the uncertainties are taken into account and conservativeness is ensured during monitoring plan setting. **CL 13**. Explain how the uncertainties are taken into account during setting values of carbon content in coal.	**CAR 13** **CL 13**	OK

CHECKLIST QUESTION	REF.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
1.6. Is it described how the chosen approach is applied in the context of the project?	PDD	DR	It is explained in Section D of the PDD how the chosen approach is applied in the context of the project.	OK	OK
1.7. Does the monitoring plan explicitly and clearly distinguish: 1) data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), and that are available already at the stage of determination regarding the PDD; 2) data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), but that are not already available at the stage of determination regarding the PDD; 3) data and parameters that are monitored throughout the crediting period?	PDD	DR	The monitoring plan explicitly and clearly distinguishes: 1) data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), and that are available already at the stage of determination regarding the PDD; 2) data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), but that are not already available at the stage of determination regarding the PDD; 3) data and parameters that are monitored throughout the crediting period.	OK	OK
1.8. Are alternative tables used instead of the tables provided in sections D.1.1.1., D.1.1.3., D.1.2.1., D.1.3.1. and D.2. in line with the approach regarding monitoring chosen for all data/parameters?	PDD	DR	Yes. Alternative tables are used in PDD instead of the tables provided in sections D.1.1.1., D.1.1.3., D.1.2.1., D.1.3.1. and D.2. in line with the approach regarding monitoring chosen for all data/parameters.	OK	OK
1.8.1. Are all the required data/parameters according to the used methodology indicated?	PDD	DR	Alternative tables are used not for all parameters.	**CAR 14**	OK

CHECKLIST QUESTION	REF.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
			CAR 14. Provide the necessary tables for all parameters under the chosen monitoring plan.		

<table>
<tr><th>CHECKLIST QUESTION</th><th>REF.*</th><th>MoV**</th><th>COMMENTS</th><th>Draft Concl.</th><th>Final Concl.</th></tr>
<tr><td>1.9. Issues of the checklist on the parameters
<table>
<tr><th>The verification issue</th><th>Name of parameter</th></tr>
<tr><td>Title in line with methodology</td><td></td></tr>
<tr><td>Data unit are correctly expressed</td><td></td></tr>
<tr><td>Appropriate description of parameter</td><td></td></tr>
<tr><td>The time of monitoring is clearly indicated</td><td></td></tr>
<tr><td>The source clearly is referenced</td><td></td></tr>
<tr><td>The correct value is provided</td><td></td></tr>
<tr><td>Was the confirmation of this value submitted?</td><td></td></tr>
<tr><td>Is the choice of data correctly justified or is the measurement method correctly described?</td><td></td></tr>
<tr><td>Are quality control and quality assurance procedures indicated?</td><td></td></tr>
</table></td><td>PDD</td><td>DR</td><td>Not applicable.</td><td>OK</td><td>OK</td></tr>
<tr><td colspan="6">D.1.1. Option 1 – Monitoring of the emissions in the project scenario and the baseline scenario.</td></tr>
<tr><td>1.1.1. Is the option 1 used for monitoring of the emissions in the project scenario and the baseline scenario?</td><td>PDD</td><td>DR</td><td>Option 1 – Monitoring of the emissions in the project and baseline scenarios are used for monitoring in accordance with Section D of the PDD.</td><td>OK</td><td>OK</td></tr>
<tr><td colspan="6">D.1.1.1. Data to be collected in order to monitor emissions from the project, and how these data will be archived.</td></tr>
<tr><td>1.1.1.1. Are the data to be collected in order to monitor emissions from the project described?</td><td>PDD</td><td>DR</td><td>The data to be collected in order to monitor emissions from the project are described project participants in Section D.1.1.1. of the PDD.</td><td>OK</td><td>OK</td></tr>
<tr><td>1.1.1.2. Is it indicated how the data will be archived?</td><td>PDD</td><td>DR</td><td>Pursuant to Section D.1.1.1. of the PDD, all data will be stored in electronic and paper form.</td><td>OK</td><td>OK</td></tr>
</table>

CHECKLIST QUESTION	REF.*	MoV**	COMMENTS	Draft Concl.	Final Concl.

CHECKLIST QUESTION	REF.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
1.1.1.3. Is it indicated that data monitored are to be kept for two years after the last transfer of ERUs for the project?	PDD	DR	It is indicated in Section D.1. of the PDD, that data monitored and needed for calculations, will be kept for two years after the last transfer of ERUs.	OK	OK
D.1.1.2. Description of formulae used to estimate project emissions (for each gas, source etc.; emissions in units of CO_2 equivalent).					
1.1.2.1 Are the formulae clearly and consistently indicated throughout the PDD?	PDD	DR	The formulae, used to estimate project emissions, are clearly and consistently indicated in section D.1.1.2. of the PDD.	OK	OK
D.1.1.3. Relevant data necessary for determining the baseline of anthropogenic emissions of greenhouse gases by sources within the project boundary, and how such data will be collected and archived					
1.1.3.1. Are the data necessary for determining the baseline of anthropogenic emissions of greenhouse gases by sources within the project boundary described?	PDD	DR	All formulas for estimation of baseline emissions are clearly and consistently defined in Section D.1.1.4 of the PDD.	OK	OK
1.1.3.2. Is it indicated how data will be archived?	PDD	DR	Pursuant to Section D.1.1.3. of the PDD, all data will be stored in electronic and paper archives.	OK	OK
D.1.1.4. Description of formulae used to estimate baseline emissions (for each gas, source etc.; emissions in units of CO_2 equivalent)					
1.1.4.1. Are the formulae clearly and consistently indicated throughout the PDD?	PDD	DR	All formulas for estimation of baseline emissions are clearly and consistently indicated in section D.1.1.4. of the PDD.	OK	OK
D.1.2. Option 2 – Direct monitoring of emission reductions from the project (values should be consistent with those in section E)					

CHECKLIST QUESTION	REF.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
1.2.1. Is the option 2 used for monitoring of the emissions in the project scenario?	PDD	DR	Not applicable.	OK	OK
D.1.2.1. Data to be collected in order to monitor emission reductions from the project, and how these data will be archived					
1.2.1.1. Are the data to be collected in order to monitor emissions from the project described?	PDD	DR	Not applicable.	OK	OK
1.2.1.2. Is it indicated how the data will be archived?	PDD	DR	Not applicable.	OK	OK
1.2.1.3. Is it indicated that data monitored are to be kept for two years after the last transfer of ERUs for the project?	PDD	DR	Not applicable.	OK	OK
D.1.2.2. Description of formulae used to calculate emission reductions from the project (for each gas, source etc.; emissions/emission reductions in units of CO_2 equivalent)					
1.2.2.1. Are the formulae clearly and consistently indicated throughout the PDD?	PDD	DR	Not applicable.	OK	OK
D.1.3. Treatment of leakage in the monitoring plan					
1.3.1. Are data and information that will be collected in order to monitor leakage effects of the project described, if applicable?	PDD	DR	In Section D.1.3. of the PDD, project participants claim that the project activity does not lead to any leakage.	OK	OK
1.3.2. Are formulae used to estimate leakage (for each gas, source etc.; emissions in units of CO_2 equivalent) described?	PDD	DR	There are no explanation of formula in the PDD, which is used to estimate leakage as in the result of the project activity no leakage is expected.	OK	OK
D.1.4. Description of formulae used to estimate emission reductions for the project (for each gas, source etc.; emissions/emission reductions in units of CO_2 equivalent)					
1.4.1. Are the formulae clearly and consistently indicated throughout the PDD?	PDD	DR	These formulae are clearly and consistently indicated in Section D.1.4. of the PDD.	OK	OK

CHECKLIST QUESTION	REF.*	MoV**	COMMENTS	Draft Concl.	Final Concl.

CHECKLIST QUESTION	REF.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
D.1.5. Where applicable, in accordance with procedures as required by the host Party, information on the collection and archiving of information on the environmental impacts of the project					
1.5.1. Is information on the collection and archiving of information on the environmental impacts of the project?	PDD	DR	Collection and archiving of the information on the environmental impacts of the project will be done based on the approved EIA in accordance with the Host Party legislation, where the project is implemented and permits for environmental pollution.	OK	OK
1.5.2. Is reference to the relevant host Party regulation(s) provided?	PDD	DR	All references to the relevant host Party regulations, where the project is implemented, are provided in Section F.1. of the PDD.	OK	OK
1.5.3. If not applicable is it stated so?	PDD	DR	All necessary information is specified in Section D.1.5. of the PDD.	OK	OK
D.2. Quality control (QC) and quality assurance (QA) procedures undertaken for data monitored					
2.1. Are the quality assurance and control procedures for the monitoring process established? This includes, as appropriate, information on calibration and on how records on data and/or method validity and accuracy are kept and made available on request?	PDD	DR	Quality assurance and control procedures, applied to the process of monitoring, were set and described in Section D.2. of the PDD. However, some aspects of these procedures require clarification. **CL 14**. Please provide information on conducting verifications and calibrations of measuring equipment in the project in Section D.2.	**CL 14**	OK
2.2. Are data corresponded with those in section D.1?	PDD	DR	Data is corrected in accordance with the data specified in Sections D.1.1. and D.1.1.3.	OK	OK
D.3. Please describe the operational and management structure that the project operator will apply in implementing the monitoring					

CHECKLIST QUESTION	REF.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
plan					
3.1 Is it described briefly the operational and management structure that the project participants(s) will implement in order to monitor emission reduction and any leakage effects generated by the project?	PDD	DR	In order to monitor emission reductions under the project, the project participants will apply management and organizational structure, described in Section D.3. of the PDD. Clear management structure and distribution of responsibilities during the monitoring are provided in Section D.3. of the PDD and were set in order to ensure accurate implementation of the monitoring plan.	OK	OK
3.2. Are responsibilities and institutional arrangements for data collection and archiving clearly provided?	PDD	DR	In Section D.3. of the PDD responsibilities and institutional arrangements for data collection and archiving are presented in the sufficient volume.	OK	OK
3.3. Does the monitoring plan reflect, in general, best practices of monitoring, appropriate for the type of project?	PDD	DR	The monitoring plan, in general, reflects best practices of monitoring performing inherent to this type of projects.	OK	OK
D.4. Name of person(s)/entity(ies) establishing the monitoring plan					
4.1. Is the contact information of person(s)/entity(ies) establishing the monitoring plan provided?	PDD	DR	Contact information of the person establishing the monitoring plan is not provided. **CAR 15**. Provide information of person(s)/entity(ies) establishing the monitoring plan.	**CAR 15**	OK
4.2. Is the person/entity also a project participant listed in Annex 1 of PDD?	PDD	DR	Monitoring plan is developed by "SPA "Energometan" LLC, not a project participant.	OK	OK

CHECKLIST QUESTION	REF.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
E. Estimation of greenhouse gases emission reductions					
E.1. Estimated project emissions					
1.1. Are described the formulae used to estimate anthropogenic emissions by source of GHGs due to the project (for each gas, source etc.; emissions in units of CO_2 equivalent)?	PDD	DR	Formulae used to estimate anthropogenic emissions by source of GHGs due to the project (for each gas, source etc.; emissions in units of CO_2 equivalent)are described in Section D.1.1.2 of the PDD.	OK	OK
1.1.1. Is there a description of calculation of GHG project emissions in accordance with the formula? (supporting documentation)	PDD	DR	Explanation of calculations of GHG project emissions in accordance with the formulae, provided in Section D.1.1.2 of the PDD and in electronic Excel files, as supporting documentation.	OK	OK
1.1.2. Have conservative assumptions been used to calculate project GHG emissions?	PDD	DR	Conservative assumptions have been used to calculate project GHG emissions .	OK	OK
E.2. Estimated leakage					
2.1. Are described the formulae used to estimate leakage due to the project activity where required (for each gas, source etc.; emissions in units of CO_2 equivalent)?	PDD	DR	Project participants claim that the project activity does not lead to any leakage.	OK	OK
2.1.1. Is there a description of calculation of leakage in accordance with the formula? (supporting documentation)	PDD	DR	Project participants claim that the project activity does not lead to any leakage.	OK	OK
2.2. Have conservative assumptions been used to calculate leakage?	PDD	DR	Project participants claim that the project activity does not lead to any leakage.	OK	OK
2.3. If not applicable, is it stated in the PDD?	PDD	DR	It is stated in the PDD that no leakage is	OK	OK

CHECKLIST QUESTION	REF.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
			expected.		

CHECKLIST QUESTION	REF.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
E.3. Sum of E.1 and E.2.					
3.1. Does the sum of E.1. and E.2. represent the project activity emissions?	PDD	DR	The sum of E.1. and E.2. represents the project activity emissions.	OK	OK
E.4. Estimated baseline emissions					
4.1. Are the formulae used to estimate the anthropogenic emissions by source of GHGs in the baseline using the baseline methodology for the applicable project category described (for each gas, source etc.; emissions in units of CO_2 equivalent)?	PDD	DR	The formulae used to estimate the anthropogenic emissions by source of GHGs in the baseline using the baseline methodology for the applicable project category are described (for each gas, source etc.; emissions in units of CO_2 equivalent) in Section D.1.1.4 of the PDD.	OK	OK
4.1.1. Is there a description of calculation of GHG baseline emissions in accordance with the formula? (supporting documentation)	PDD	DR	Explanation of calculations of GHG baseline emissions in accordance with the formula, are provided in Section D.1.1.4 of the PDD and in electronic Excel files, as supporting documentation.	OK	OK
4.2. Have conservative assumptions been used to calculate baseline GHG emissions?	PDD	DR	Conservative assumptions were used to calculate baseline GHG emissions.	OK	OK
E.5. Difference between E.4. and E.3. representing the emission reductions of the project					
5.1. Does the difference between E.4. and E.3. represent the emission reductions due to the project during a given period?	PDD	DR	The difference between E.4. and E.3. represents the emission reductions due to the project during a given period.	OK	OK
E.6. Table providing values obtained when applying formulae above					
6.1. Is the data provided under this section in consistency with data as presented by other chapters E of the PDD?	PDD	DR	Yes, the data provided under this section is in consistency with data as presented by other chapters E of the PDD.	OK	OK

CHECKLIST QUESTION	REF.*	MoV**	COMMENTS	Draft Concl.	Final Concl.

CHECKLIST QUESTION	REF.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
6.2. Is there a table providing the total value of emission reductions?	PDD	DR	Yes. A table which providing the total value of emission reductions located in Section E.6. of the PDD.	OK	OK
F. Environmental impacts					
F.1. Documentation on the analysis of the environmental impacts of the project, including transboundary impacts, in accordance with procedures as determined by the host Party					
1.1. Has an analysis of the possible environmental impacts of the project been described?	PDD	DR	In Section F of the PDD project participants provided description of analysis of the possible project impacts on the environment. According to this analysis, the negative impact on the environment under the project scenario is much lower than in the baseline scenario. In order to determine the completeness of this analysis certain explanations are required. **CAR 16**. Please provide the number and evidence of the EIA indicated in the PDD, the transition of boilers to natural gas, installation of new boilers (including those that operate on coal) are considered.	**CAR 16**	OK
1.2. Are transboundary environmental impacts considered in the analysis?	PDD	DR	The project provides positive transboundary impact.	OK	OK
1.3. Are all regulations and sources clearly referenced?	PDD	DR	All regulations and data sources are clearly referenced.	OK	OK
F.2. If environmental impacts are considered significant by the project participants or the host Party, provision of conclusions and all					

CHECKLIST QUESTION	REF.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
references to supporting documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party					
2.1. Is viewpoint regarding significant environmental impacts of the project participants or the host Party indicated?	PDD	DR	In general, the project is environmentally friendly because it causes less level of pollution than in case of implementation of the baseline scenario.	OK	OK
2.2. Are there any requirements of the host Party to the environmental impact assessment (EIA)?	PDD	DR	Environmental impact assessment (EIA) is not required in accordance with the legal regulations in the Country where the project is implemented specified in Section F.1 of the PDD.	OK	OK
2.3. Have conclusions and all references to the supporting documentation on the analysis of the environmental impacts been indicated?	PDD	DR	All conclusions and references to the supporting documentation on the analysis of the environmental impacts have been indicated in Section F of the PDD.	OK	OK
G. Stakeholders' comments					
G.1. Information on stakeholders' comments on the project, as appropriate					
1.1. Have relevant stakeholders been consulted and how?	PDD	DR	According to the legislation of the Country where the project is implemented during the development and approval of project on CMM utilization there was no need in consultations with stakeholders.	OK	OK
1.1.1. Have appropriate media been used to invite comments by local stakeholders?	PDD	DR	Not applicable.	OK	OK
1.2. Is there a list of stakeholders from whom comments on the project have been received?	PDD	DR	Not applicable.	OK	OK

CHECKLIST QUESTION	REF.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
1.3. Is the nature of comments provided?	PDD	DR	Not applicable.	OK	OK
1.4. Has due account been taken of any stakeholder comments received?	PDD	DR	Not applicable.	OK	OK
Annexes					
Annex 1. Contact information on project participants					
1.1. Is the information provided in consistency with the one given under section A.3?	PDD	DR	Yes, the information provided is in consistency with the one given under section A.	OK	OK
1.2. Are the mandatory fields for each organisation listed in section A.3. of the PDD filled notably organisation, name of contact person, street, city, postal code, country, telephone number(s) and fax number or e-mail address?	PDD	DR	Yes. The mandatory fields for each organization listed in section A.3. of the PDD are filled.	OK	OK
Annex 2. Baseline information					
2.1. Is a table containing the key elements of the baseline (including variables, parameters and data sources) provided?	PDD	DR	Tables containing the key elements of the baseline (including variables, parameters and data sources) are provided.	OK	OK
2.2. If additional background information on baseline data is provided: is this information in consistency with data presented by other sections of the PDD?	PDD	DR	Baseline information is provided in Annex 2, is consistent with other Sections of the PDD.	OK	OK
Annex 3. Monitoring plan					
3.1. Is the detail description of all key elements of monitoring plan provided?	PDD	DR	Detail description of all key elements of monitoring plan is provided in Annex 3 of the PDD.	OK	OK
3.2. Is the provided information on monitoring plan in consistency with data presented in section D of the PDD?	PDD	DR	Information on monitoring plan, presented in Annex 3, is in consistency with other Sections of the PDD.	OK	OK

CHECKLIST QUESTION	REF.*	MoV**	COMMENTS	Draft Concl.	Final Concl.

Ref.* - gives reference to Category 1 and Category 2 documents (see section 3.1. of the Determination Report) where the answer to the checklist question or item is found.
MoV** - Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.

Table 3 Resolution of Corrective Actions and Clarification Requests

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1 and 2	Summary of project owner response	Determination team conclusion
FAR 01. Project does not have approval from the Parties involved.	Table 1, issues of the checklist 1	Response 1: Approval from the Parties involved will be received after a positive determination opinion, according to the legislation of the Parties. Written approval of the project by the Party involved participating in the JI project except the host Party will be received before the first verification of the project.	Conclusion 1: Explanation provided is satisfactory. Issue is closed.
CAR 01. Please provide brief information on the basic sources of heat energy consumption, generated by the project.	**Table 2. A.4.2.1**	Response 1: Consumption of thermal energy at mines is typical for the sector and consists of the following major sources of consumption: • Heating the mine shafts; • Heating administrative building; • Hot water supply at the administrative building; • Other small consumers (heating, hot water). Relevant justification was provided in the PDD version 2.0 dated 20/09/2012.	Conclusion 1: Explanation provided is satisfactory. Issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1 and 2	Summary of project owner response	Determination team conclusion
CAR 02. Provide information on the types and amount of fuel that was used from the beginning of the project at the enterprise.	**Table 2. A.4.2.1**	Response 1: From the beginning of the project at the enterprise, the following types of fuel were used. In the baseline scenario – coal of GR 0-200 mm grade that was supplied from mine "Butivska". In the project scenario – methane-air mixture and coal of GR 0-200 mm grade that was supplied from mine "Butivska" (as additional or reserve fuel). Relevant justification was provided in the PDD version 2.0 dated 20/09/2012.	Conclusion 1: Provided explanation and confirmation are satisfactory. Issue is closed.
CAR 03: Correct the discrepancies between fonts (size, etc.) throughout the PDD.	**Table 2. A.4.2.2.**	Response 1: Discrepancies are corrected. Changes are included into PDD version 2.0 dated 20/09/2012.	Conclusion 1: Made corrections are satisfactory and correct. Issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1 and 2	Summary of project owner response	Determination team conclusion
CAR 04. Please correct the period for which GHG emission reductions for the part of the crediting period are calculated.	**Table 2. A.4.3.1.1.**	Response 1: Relevant period is corrected. Changes are included into PDD version 2.0 dated 20/09/2012.	Conclusion 1: Made corrections are satisfactory and correct. Issue is closed.
CAR 05. Provide justification that the boilers could produce the same amount of heat as in the baseline scenario taking into account the fact that coal mine methane has a variable calorific value depending on the concentration and have sufficient residual lifetime.	**Table 2. B.1.1.**	Response 1: Boiler equipment after reconstruction is able to produce the same amount of energy as before reconstruction. That is boiler equipment productivity has not decreased. In case if need of mines in heat energy exceeds the current ability to meet this need by using methane as fuel, then there is opportunity to use coal as fuel. Residual lifetime of boiler equipment after reconstruction enables to continue working throughout the crediting period. Relevant justification was provided in the PDD version 2.0 dated 20/09/2012.	Conclusion 1: Provided explanation and justification are satisfactory. Issue is closed.
CAR 06. Please add the information	**Table 2. B.1.2.4.**	Response 1:	Conclusion 1:

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1 and 2	Summary of project owner response	Determination team conclusion
which conservative assumptions were used.		While developing the project uncertainty are taken into consideration and conservative assumptions are used. A number of measures for explaining uncertainty and ensuring conservativeness are implemented: • Where possible, the same approaches to calculating baseline emissions levels and emissions from the project implementation are used as in National Inventory Report of Ukraine. In National Inventory Report of Ukraine country-specific emission factors are used that meet the established values of the Intergovernmental Panel on Climate Change (IPCC); • Where possible, default values are used in order to reduce uncertainty and provide calculations by conservative data. Relevant information is added. Changes are included into PDD version 2.0 dated 20/09/2012.	Provided explanation and justification are satisfactory. Issue is closed.
CAR 07. Justify exclusion of coal consumption by boiler houses as a source of project emissions	**Table 2. B.3.1.**	Response 1: Consumption of coal by boiler houses for heat production is the baseline for this	Conclusion 1: Provided explanation and

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1 and 2	Summary of project owner response	Determination team conclusion
		project. Since it is assumed that the boiler houses would produce the same amount of heat in the baseline and project scenarios, then the project does not affect the amount of produced heat energy. Generation of the part of heat energy in the project scenario using coal as fuel corresponds part of baseline scenario and is not taken into consideration in this project. That is, this emission source is present in the project and in the baseline scenarios and leads to the same volume of emissions. Since in this case there is no increase or reduce of greenhouse gas emissions, this source of emissions is excluded from consideration in the project and in the baseline scenarios. This makes it possible to simplify the monitoring plan and improve its accuracy and reliability. Only that amount of heat in the baseline and project scenarios is taken into consideration in this project, which was produced using methane as fuel in the project scenario. Relevant justification was provided in section B.3. of the PDD version 2.0 dated 20/09/2012.	justification are satisfactory. Issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1 and 2	Summary of project owner response	Determination team conclusion
CAR 08. Since the project envisages expansion of degassing system, then justify the exclusion of energy consumption as a source of project emissions.	**Table 2. B.3.1.**	Response 1: Mine degasification system is an essential element to ensure mine safety. The presence of methane and bomb threats of methane-air mixture impede progress of mining activities and require ensuring safer working conditions of miners. Statistical study of fatal cases in mines indicates that most of these events is caused directly by flash and explosion of methane. Regulations in the field focus on improving mine safety, but do not require CMM utilization. Documents do not define need either in burning methane in torch or utilization of extracted CMM. Thus degasification system expansion is primarily element of ensure the safety of works, and therefore is present in both baseline and project scenarios and therefore is not considered within only project scenario. As a source of emissions this element is present in both baseline and project scenarios, and therefore does not affect the amount of emission reductions.	Conclusion 1: Explanation provided is satisfactory. Issue is closed.
CAR 09. Starting date of the JI project should reflect the starting date of implementation or construction or real	Table 2. C.1.1.	Response 1: Starting date of the project is December 14,	Conclusion 1:

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1 and 2	Summary of project owner response	Determination team conclusion
actions under the project.		2004. This date is the beginning of refitting boiler houses to gaseous fuel. Relevant justification was provided in the PDD version 2.0 dated 20/09/2012.	Provided explanation and justification are satisfactory. Issue is closed.
CAR 10. Provide documents confirming the carbon content of coal used as fuel in the baseline scenario.	Table 2. D.1.3.	Response 1: Relevant information is provided to AIE as supporting document.	Conclusion 1: Justification and supporting documents are acceptable and confirm the information in the PDD. Issue is closed.
CAR 11. Provide information on certification of laboratory, which is used to determine NCV of coal.	Table 2. D.1.4.	Response 1: Relevant information is provided to AIE as supporting document.	Conclusion 1: Justification and supporting documents are acceptable. Issue is closed.
CAR 12. Carbon oxidation factor for coal is an immeasurable value, correct the mistake.	Table 2. D.1.5.	Response 1: Relevant information is corrected. Changes are included into PDD version 2.0 dated 20/09/2012.	Conclusion 1: Made corrections are satisfactory and correct.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1 and 2	Summary of project owner response	Determination team conclusion
			Issue is closed.
CAR 13. Please provide a list indicating how the uncertainties are taken into account and conservativeness is ensured during monitoring plan setting.	Table 2. D.1.5.1	Response 1: For taking account uncertainties and ensuring conservatism the following was provided: Carbon content in coal, which is used as fuel for boiler houses in the baseline scenario, is taken in accordance with the certificate of genetic, technological and qualitative characteristics of # 94 for coal production "coal GR 0-200 mm" mine "Butivska" of SE "Makiyivvuhillya". Certificate is issued by SE "UKRNDIVUGLEZBAGACHENNYA" based on laboratory studies. Scientific and Research Coal Chemistry Laboratory SE "UKRNDIVUGLEZBAGACHENNYA" is accredited according to the requirements of DSTU ISO/IEC 17025:2005 certificate No. 211820. Characteristics of coal according to this study are used for commercial purposes of the enterprise, so uncertainty of the results is low. Value of methane density was selected for the standard conditions of temperature and pressure. The registration system of volumes of utilized methane-air mixture causes the	Conclusion 1: Provided explanation and justification are satisfactory. Issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1 and 2	Summary of project owner response	Determination team conclusion
		volume of gas measured under real conditions of registration of data to standard conditions. For this purpose the system performs measurements of temperature and pressure of methane-air mixture. Uncertainty and used conservative assumptions are taken into consideration. Number of measures for explaining uncertainty and ensuring conservatism were implemented: • If possible, the same approaches to calculating levels of baseline emissions and emissions from project implementation are used that are National Inventory Report of Ukraine. Country-specific emission factors that meet set values of Intergovernmental Panel on Climate Change (IPCC) are used in National Inventory Report; • If possible, default values are applied in order to reduce uncertainty and provide calculations by conservative data. Relevant information is added. Changes are included into PDD version 2.0 dated 20/09/2012.	

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1 and 2	Summary of project owner response	Determination team conclusion
CAR 14. Provide the necessary tables for all parameters under the chosen monitoring plan.	Table 2. D.1.8.1	Response 1: Needed references to tables were added for all parameters included in the monitoring plan. Changes are included into PDD version 2.0 dated 20/09/2012.	Conclusion 1: Provided corrections are satisfactory. Issue is closed.
CAR 15. Provide information of person(s)/entity(ies) establishing the monitoring plan.	Table 2. D.4.1	Response 1: Relevant information is added. Changes are included into PDD version 2.0 dated 20/09/2012.	Conclusion 1: Provided corrections are satisfactory. Issue is closed.
CAR 16. Please provide the number and evidence of the EIA indicated in the PDD, the transition of boilers to natural gas, installation of new boilers (including those that operate on coal) are considered.	Table 2. F.1.1.	Response 1: The host Party for this project is Ukraine. Environmental Impact Assessment (EIA) is the part of the Ukrainian project planning and permitting procedures. Implementation regulations for EIA are included in the Ukrainian State Construction Standard DBN A.2.2.-1-2003 (Title: "Structure and Contents of the Environmental Impact Assessment Report (EIR) for Designing and Construction of Production Facilities, Buildings and	Conclusion 1: Provided explanation and justification are satisfactory. Issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1 and 2	Summary of project owner response	Determination team conclusion
		Structures"). In Annex F of this standard there is a list of "types of projects or activities that are of high environmental hazard" for which full-scale EIA is obligatory, Ministry of Environment and Natural Resources of Ukraine is competent authority for performing of it. Project activities that consist of utilization of wastes of coal industry and of coal production are included in this list. Project implementation does not impact negatively on the environment; in fact, the impact of the project is estimated as positive. According to the requirements of the host Party, there was no need to develop the EIA for this activity. Relevant information is added. Changes are included into PDD version 2.0 dated 20/09/2012.	
CL 01. Explain the situation on participation of the other Party in the project (except the host Party).	Table 2. A.3.1.	Response 1: Party involved, other than host Party, is to be determined. Project participant and a potential buyer of ERUs under the project from Party involved participating in JI project, except the host Party, will also be determined at a later stage. Written approval of the project by Party involved participating in the JI project except host Party will be received	Conclusion 1: Provided explanation and justification are satisfactory. Issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1 and 2	Summary of project owner response	Determination team conclusion
		before the first verification of the project. Relevant justification was provided in the PDD version 2.0 dated 20/09/2012.	
CL 02. Explain if coal mine methane is used or utilized in the period of reduction of loading and need for heat energy (summer period).	Table 2. A.4.2.1.	Response 1: In the period of reducing the load and the need for heat energy (summer period) are respectively reducing volume of production of heat energy by boiler houses of mines. Consequently, the volume of utilization of methane-air mixture decreases. Unutilized volume of methane-air mixture is discharged into the atmosphere through special waste devices as well as in the baseline scenario. As in the project only volume of methane, utilized in the project scenario, is taken into consideration, the above described process does not affect the volume of emissions in the project or baseline scenarios of this project. Emission reductions are credited only for actually utilized in the boiler houses volume of methane.	Conclusion 1: Provided explanation and justification are satisfactory. Issue is closed.
CL 03. Explain does the project reflect current engineering practices?	Table 2. A.4.2.1.1	Response 1:	Conclusion 1:

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1 and 2	Summary of project owner response	Determination team conclusion
		The project uses modern technology solutions and engineering development and practice. Technology of methane utilization in the boiler houses for heat energy production is a modern engineering practice. Relevant information is added to the PDD. Changes are included into PDD version 2.0 dated 20/09/2012.	Provided explanation and justification are satisfactory. Issue is closed.
CL 04: Please give an explanation for each of the components of the project if in the project advanced technologies are used and if the project requires large capital investments for the implementation of project activities.	Table 2. A.4.2.1.2.	Response 1: The project uses advanced technology. Utilization of methane in the boiler houses is a modern technology that is used in the coal industry. Result of implementation of this technology is the reducing emissions of greenhouse gases and pollutants into the atmosphere, promoting energy independence and sustainable development of the industry. Project implementation will require significant capital investment aimed at modernizing degassing system and capturing methane-air mixture, reconstruction of boiler houses, control and measuring devices, etc. Relevant information is added to the PDD. Changes are included into PDD version 2.0 dated 20/09/2012.	Conclusion 1: Provided explanation and justification are satisfactory. Issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1 and 2	Summary of project owner response	Determination team conclusion
CL 05. Explain if the change in technology or the introduction of new technologies for CMM utilization during the crediting period is possible.	Table 2. A.4.2.1.3.	Response 1: Introduction of new technology or replacing technology during the crediting period is unlikely, since the utilization of methane in boiler houses of mines for heat energy production meets the interest of mines and their needs in heat energy. Relevant information is added to the PDD. Changes are included into PDD version 2.0 dated 20/09/2012.	Conclusion 1: Provided explanation and justification are satisfactory. Issue is closed.
CL 06: Please clarify if project is implemented at 4-mine sites in the same time intervals.	Table 2. A.4.2.2.	Response 1: SE "Makiyivvuhillya" has a centralized structure of management and decision-making. This project was developed as a single coordinated project for four mines within the project. Project implementation was carried out simultaneously at four mine sites with minor deviations from the process of reconstruction implementation. Project implementation and the beginning of generating emission reductions occurred simultaneously at all mines within the project.	Conclusion 1: Provided explanation and justification are satisfactory. Issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1 and 2	Summary of project owner response	Determination team conclusion
CL 07. If the introduction of measures on CMM utilization is not registered as a compulsory measure what priority directions are identified in the coal industry.	Table 2. B.1.1.	Response 1: High methane content is among the key factors determining the complexity of coal recovery and its high production cost at the mines of SE "Makiyivvuhillya". The methane presence and the threat of methane-air mix explosion hamper the progress of the mining works and demand to increase safety working conditions of miners. Statistical survey of fatal accidences occurred in mines witnesses that the great majority of those relate directly to ignition and explosion of methane. The President of Ukraine and the Government preoccupied with concerns on providing safety for coal miners have issued several decrees to support and to regulate activities to be implemented: • The Decree of the President of Ukraine as of 16th of January 2002 No. 26/2002 "On urgent activities for improvement of work conditions and development of the state supervision at mining enterprises"; • The Governmental Decree as of 6th of July 2002 No. 939 has approved the Complex Programme of coal-beds degasification at coal mines. Both decrees focus on improving the safety of the mines, but do not require any utilization of the CMM. According to both decrees there	Conclusion 1: Provided explanation and justification are satisfactory. Issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1 and 2	Summary of project owner response	Determination team conclusion
		is no necessity to neither flare nor utilize captured CMM. Relevant information is added to the PDD. Changes are included into PDD version 2.0 dated 20/09/2012.	
CL 08. Specify exactly which approach is defined in the regulations was chosen for baseline setting.	Table 2. B.1.2.	Response 1: Project participants selected the following approach on setting the baseline specified in Guidance on criteria for baseline setting and monitoring (version 03) (Paragraph 9a): An approach for baseline setting and monitoring already taken in comparable JI cases (JI specific approach). Relevant information is added to the PDD. Changes are included into PDD version 2.0 dated 20/09/2012.	Conclusion 1: Provided explanation and justification are satisfactory. Amendments are correct. Issue is closed.
CL 09. Is the experience of other mines that have implemented technology of CMM utilization at their enterprises taken into account.	Table 2. B.1.3.1.	Response 1: CMM utilization at the coal mines of Ukraine is a relatively new direction of development that has received new impetus to further development with the advent of the Joint Implementation mechanism.	Conclusion 1: Provided explanation and justification are satisfactory. Issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1 and 2	Summary of project owner response	Determination team conclusion
		During preparation and development of this project of CMM utilization company specialists studied experience of other companies on this issue. First, they took into consideration experience of such companies as: mine named after A.F. Zasyadko, mine Sukhodilska Skhidna and others. Taking into account this experience, it was decided to implement the project with the Joint Implementation Mechanism.	
CL 10. The value of methane density is taken based on the standard gas parameters (temperature 20°C, pressure 101325 Pa), explain how this value is adjusted based on the actual conditions of data logging.	Table 2. D.1.5.	<u>Response 1:</u> Value of methane density was selected for the standard conditions of temperature and pressure. The registration system of volumes of utilized methane-air mixture causes the volume of gas measured under real conditions of registration of data to standard conditions. For this purpose the system performs measurements of temperature and pressure of methane-air mixture. Relevant information is added to the PDD. Changes are included into PDD version 2.0 dated 20/09/2012.	<u>Conclusion 1:</u> Provided explanation and justification are satisfactory. <u>Issue is closed.</u>

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1 and 2	Summary of project owner response	Determination team conclusion
CL 11. Is there confirmation that coefficient of efficiency of the old coal boilers before modernization was not higher than that stated in the PDD.	Table 2. D.1.5.	Response 1: Installed equipment to conduct reconstruction was in operation for considerable time (since 1970). Herewith the efficiency of these boilers installed at other enterprises of coal-mining sector, as a rule, does not exceed 75%. Furthermore boilers efficiency over time tends to decrease as wear of units and components of equipment, destruction of isolation, accumulation of soot and slag and other factors contribute to it. To reduce uncertainty and facilitate the monitoring plan in conditions of use various types of boiler equipment efficiency of boilers were installed by default in accordance with "Tool to determine the baseline efficiency of thermal or electric energy generation systems" Version 01*.	Conclusion 1: Provided explanation and justification are satisfactory. Issue is closed.
CL 12. Was the expertise of boilers conducted after refitting them for coal mine methane combustion with the definition of its operating characteristics: coefficient of efficiency, productivity, and etc.	Table 2. D.1.5.	Response 1: While refitting boilers to operate on methane-air mixture their reconstruction with bringing operational parameters was performed: Efficiency Factor, productivity and etc. to the calculated values.	Conclusion 1: Provided explanation and justification are satisfactory. Issue is closed.

* http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-09-v1.pdf

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1 and 2	Summary of project owner response	Determination team conclusion
		Boiler efficiency under real operating conditions depends on many factors: the load, type of fuel, the technical condition of the unit, etc.. To reduce uncertainty and facilitate the monitoring plan in conditions of use various types of boiler equipment efficiency of boilers were installed by default in accordance with "Tool to determine the baseline efficiency of thermal or electric energy generation systems" Version 01*.	
CL 13. Explain how the uncertainties are taken into account during setting values of carbon content in coal.	Table 2. D.1.5.1	<u>Response 1:</u> Carbon content in coal, which is used as fuel for boiler houses in the baseline scenario, is taken in accordance with the certificate of genetic, technological and qualitative characteristics of # 94 for coal production "coal GR 0-200 mm" mine "Butivska" of SE "Makiyivvuhillya". Certificate is issued by SE "UKRNDIVUGLEZBAGACHENNYA" based on laboratory studies. Scientific and Research Coal Chemistry Laboratory SE	<u>Conclusion 1:</u> Provided explanation and justification are satisfactory. <u>Issue is closed.</u>

* http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-09-v1.pdf

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1 and 2	Summary of project owner response	Determination team conclusion
		"UKRNDIVUGLEZBAGACHENNYA" is accredited according to the requirements of DSTU ISO/IEC 17025:2005 certificate No. 211820. Characteristics of coal according to this study are used for commercial purposes of the enterprise, so uncertainty of the results is low. Certificate of coal products characteristics is submitted to AIE as supporting document. Relevant information is added to the PDD. Changes are included into PDD version 2.0 dated 20/09/2012.	
CL 14. Please provide information on conducting verifications and calibrations of measuring equipment in the project in Section D.2.	Table 2. D.2.1.	Response 1: Calibration and periodic calibration of measuring devices will be implemented by authorized representatives of the State Metrology Service of Ukraine in accordance with applicable regulatory documents in compliance with the appropriate calibration interval. Full list of measuring equipment and its characteristics will be installed at the stage of preparation of monitoring report. Calibration of equipment will be implemented in accordance with the legislation of host Party – State Standard of Ukraine DSTU 2708:2006 "Metrology. Calibration of	Conclusion 1: Provided explanation and justification are satisfactory. Issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1 and 2	Summary of project owner response	Determination team conclusion
		measuring instruments. The organization and procedure". Relevant information is added to the PDD. Changes are included into PDD version 2.0 dated 20/09/2012.	