DETERMINATION REPORT

Processing of waste heaps at Monolith-Ukraine in Ukraine

REPORT NO. 2011-9077

REVISION NO. 03

DET NORSKE VERITAS

DETERMINATION REPORT

DNV CLIMATE CHANGE SERVICES AS

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Client: Global Carbon BV		Client ref.: Denis Prusakov

Summary:
Project Name: Processing of waste heaps at Monolith-Ukraine
Country: Ukraine
Methodology: ☐ **CDM Methodology:** AMXXXX, **Version:** XX ☒ **JI specific approach**
GHG reducing Measure/Technology: The Parnaby Dense Medium Cyclone washing and separation of coal e from mine's waste heaps
ER estimate: 195 737 tCO_2e per year (average)
Size
☒ Large Scale
☐ Small Scale
Determination Phases:
☒ Desk Review
☒ Follow up interviews
☒ Resolution of outstanding issues
Determination Status
☐ Corrective Actions Requested
☐ Clarifications Requested
☒ Full Approval and final determination
☐ Rejected
In summary, it is DNV's opinion that the project activity "Processing of waste heaps at Monolith-Ukraine" in Ukraine, as described in the PDD, version 03 of 31 August 2011, meets all relevant UNFCCC requirements for the JI and all relevant host Party criteria and correctly applies a JI specific approach that is found to be correct and applicable.

Report No.: 2011-9077	Subject Group: Environment	
Report title: Processing of waste heaps at Monolith-Ukraine		
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Indexing terms

Key words Climate Change Kyoto Protocol Determination Joint Implementation
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Abbreviations

CAR	Corrective Action Request
CDM	Clean Development Mechanism
CH_4	Methane
CL	Clarification request
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
DNV	Det Norske Veritas
ERU	Emission reduction units
FAR	Forward Action Request
GHG	Greenhouse gas(es)
IPCC	Intergovernmental Panel on Climate Change
JI	Joint Implementation
JISC	Joint Implementation Supervisory Commitee
LoA	Letter of approval
N_2O	Nitrous oxide
PDD	Project Design Document
tCO_2e	Tonnes of CO_2 equivalents
UNFCCC	United Nations Framework Convention on Climate Change
GWP	Global Warming Potential

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1 EXECUTIVE SUMMARY – DETERMINATION OPINION

"DNV Climate Change Services AS (DNV) has performed a determination of the Processing of waste heaps at Monolith-Ukraine in Ukraine. The determination was performed on the basis of UNFCCC criteria for the Joint Implementation and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting

The review of the project design documentation and the subsequent follow-up interviews have provided DNV with sufficient evidence to determine the fulfilment of stated criteria.

The host country is Ukraine and the sponsor country is Netherlands. Both countries fulfil the participation criteria. The project has been approved as well as project participants have been authorized by the national authorities of Ukraine (26 August 2011)/59/ and the Netherlands (4 July 2011) /60/. Letter of Endorsement for this project was issued by National Environmental Investments Agency of Ukraine, dated 14 December 2010 /22/.

By coal extraction from mine's waste heaps, the project results in reductions of CO_2 emissions that are real, measurable and give long-term benefits to the mitigation of climate change. It is demonstrated that the project 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.

The project is expected to reduce approximately 587 211 tCO_2 over the 3 year crediting period from 2010-2012 with an annual reduction of 133 649 tCO_2 in 2010, 226 781 tCO_2 in 2011 and 2012. The operational equipment was completely new, its lifetime has been supposed as 15 years /36/ *based on the physical expected depletion of the waste heaps that will be processed and so it will cover the first crediting period as well as the following period 2013 – 2024. The emission reduction forecast has been checked and it is deemed likely that the stated amount is achieved given that the underlying assumptions do not change..*

Adequate training and monitoring procedures have been implemented.

In summary, it is DNV's opinion that the project, as described in the project design document version 03 of 31 August 2011, *meets all relevant UNFCCC requirements for the JI.*

Prague and Oslo, 2 September 2011.

Zuzana Andrtová
JI Verifier
DNV Prague, Czech Republic

Ole Andreas Flagstad
JI Service Responsible,
DNV Climate Change Services AS

2 INTRODUCTION

Global Carbon BV has commissioned DNV Climate Change Services AS (DNV) to perform a determination of the "Processing of waste heaps at Monolith-Ukraine" project (hereafter called "the project"). This report summarises the findings of the determination of the project, performed on the basis of UNFCCC criteria for the JI, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 6 of the Kyoto Protocol, the Guidelines for the implementation of Article 6 of the Kyoto Protocol and the subsequent decisions by the JI Supervisory Committee.

2.1 Objective

The purpose of a determination is to have an Accredited Independent Entity (IE) review the project design. In particular, the project's baseline, monitoring plan, and the project's compliance with relevant UNFCCC and host Party criteria are validated in order to confirm that the project design, as documented, is sound and reasonable and meets the identified criteria. Determination is a requirement for all JI projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of emission reduction units (ERUs).

DNV is an Independent Entity accredited by the Joint Implementation Supervisory Committee (JISC) for all sectoral scopes.

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, JI modalities and procedures and guidance by the JI Supervisory Committee (JISC) including the Guidance on criteria for baseline setting and monitoring /4/ and the Determination and verification manual /3/.

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.

3 METHODOLOGY

The determination consisted of the following three phases:

I a desk review of the project design documents

II follow-up interviews with project stakeholders

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 following table outlines the documentation reviewed during the determination:

/1/ Global Carbon BV: PDD of Processing of waste heaps at Monolith-Ukraine, version 1.1, dated 28 November 2010, version 03 of 31 August 2011

/2/ Global Carbon BV: NPV calculation (20100523_Monolith_CF_en_v2.1.xlsx), dated 28 June 2011, ER calculation (20101128_ER_ Monolith_ver1.1. en xlsx), dated 28 November 2010

/3/ JI Supervisory Committee: Determination and verification manual, version 01 adopted at JISC 19

/4/ JI Supervisory Committee: Guidance on criteria for baseline setting and monitoring, version 02 adopted at JISC18

/5/ PJSC “LUHANSKGIPROSHAKHT”: EIA, dated 2008

/6/ JI Supervisory Committee: Guidelines for users of the joint implementation project design document form, version 4 adopted at JISC 18

/7/ CDM Executive Board: “Tool for the demonstration and assessment of additionality”, version 5.2, dated 26 August 2008

/8/ Monolith-Ukraine: Daily logbook for coal yard for II decade of February 2011

/9/ Monolith-Ukraine: Logbook for car weighting, 17 February 2011

/10/ Monolith-Ukraine: Records from training meetings prior shift, 21 February 2011

/11/ Calibration certificate for weighbridge No 319”25”02 2010, issued by Lugansk Regional Center for Standardization, metrology and Certification, dated 20 February 2010

/12/ Calibration certificate for electricity meter, issued by UAB ELGAMA – ELEKTRONIKA – Calibration Laboratory, dated 9 August 2006

/13/ National Inventory Report of Ukraine 1990 – 2008
http://unfccc.int/files/national_reports/annex_i_ghg_inventories/national_inventories_submissions/application/zip/ukr-2010-nir-22may.zip
http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/5270.php.

/14/ IPCC Second Assessment, Bolin, B. et al.: A Report of the Intergovernmental Panel on Climate Change" (1995)
http://www.ipcc.ch/pdf/climate-changes-1995/ipcc-2nd-assessment/2nd-assessment-en.pdf

/15/ Scientific Research Institute “Respirator”: Analysis on the fire risk of Luhansk Region’s waste heaps, 2010

/16/ IPCC Guidelines 2006
http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_4_Ch4_Fugitive_Emissions.pdf

/17/ Global Carbon BV: Standardized emission factor for the Ukrainian electricity grid, version 5, dated February 2007 – verified by TÜV SÜD on 17 August 2007
(also used for JI-projects 0211, 0104 and 0214)

/18/ Monolith-Ukraine, Monitoring manual , dated 19 January 2010

/19/ EIA_approval - the State Department of Environmental Protection of Ukraine in the Luhansk Region dated 11 August 2008

/20/ State Construction Standard DBN A.2.2.-1-2003 :"Structure and Contents of the Environmental Impact Assessment Report (EIR) for Designing and Construction of Production Facilities, Buildings and Structures" State Committee Of Ukraine On Construction And Architecture, 2004

/21/ The local newspaper “VPERED-Rovenky”, Notice on Measuring Data, signed by the Korobko S.V. Director of Monolith-Ukraine dated the 21 January 2008

/22/ Letter of Endorsement for the project #2151/23/7 issued by National Environmental Investments Agency of Ukraine, dated 14/12/2010

/23/ Investment Cost confirmation by the project developer based on the default budgetary estimation according to the building practices of Ukraine performed in accordance with the legislation developed by the Ministry of Regional Development and Construction of Ukraine. 23 July 2008

/24/ Inspection report on anthracite quality issued by SGS, dated 6 August 2010

/25/ Bulletin of Energoatomizdat – Typical Coal Quality, 1988
This reference gives the coal characteristics in the basin (that are not changing over time) and coal extraction and beneficiation technologies. The latter were also quite constant during the last 20 years in Ukrainian coal mines. The purpose of this information is to underpin that the project activity provides coal of the quality that is not worse than the typical coal quality of the mines in the region. This is supported by the SD6_CoalQuality (Please see /24/ above).

/26/ Analysis on the fire risk of Luhansk Region’s waste heaps issued by “Scientific Research Institute “Respirator” in 2010”

/27/ Self Burning Assessment of the waste heaps issued by “Scientific Research Institute “Respirator” dated 20 November 2009

/28/ Building permit #18/2009 issued by the State Architectural and Construction Control of the Luhansk Region, dated 15 January 2009

/29/ Monolith-Ukraine - Archiving Order issued by the general director, dated 20 January 2010

/30/ Statement of the company management that no outsourced or subcontracted equipment for moving of heaps has been used dated 7 April 2011

/31/ ELGAMA- Elektronika Passport dated 9 August 2006, Type certificate dated 15 May 2008, Technical data - input Compliance certificate of passport data from 9 August

2006 – Monolith-Ukraine

/32/ DISKRET - Scales passport dated 2009, Metrological Certificate – State Committee for Technology – Metrology Certification Center

/33/ Monolit-Ukraine, – Supply invoices, way bill, , December 2010 Summary

/34/ Integrated State Expertise #25/2008 issued by "UKRDERZHBUDEPERTISA" in Luhansk Region

/35/ Certificate of Compliance №ЛГ000082 issued by the State Architectural and Construction Control of the Luhansk Region

/36/ Permission to Conduct Operations #4018.09.30-10.10.1 issued by Derzhgirpromnaglyad (State Industrial Mining Supervision Committee)

/37/ Research of application opportunity of geothermal pumps with ground warmth for autonomic heating supply S.I. Monah, R.E. Baphtalovsky, Donbas National Academy of Civil Engineering and Architecture, Modern Industrial and Civil Construction, Vol. 4, N3, 2008, p. 113-118 http://www.nbuv.gov.ua/portal/natural/spcb/2008-3/SPGS2008-3/01_Monakh.pdf

/38/ AMB Country Risk Report: Ukraine October 29, 2010 http://www3.ambest.com/ratings/cr/reports/Ukraine.pdf

/39/ Opportunities for international best practice use in coal mining waste heap utilization of Donbas, Matveeva N.G., Ecology: Collection of Scientific Papers, Eastern Ukrainian National University, Luhansk, #1 2007 http://www.nbuv.gov.ua/portal/natural/Ecology/2007_1/Article_09.pdf

/40/ Analysis on the fire risk of Luhansk Region's waste heaps, Scientific Research Institute "Respirator", Donetsk, 2010.

/41/ Coal Sector of Ukraine: Problems and Sustainable Development Perspectives, Yuri Makogon, National Institute For Strategic Research, 2008 (http://www.niss.gov.ua/Monitor/desember08/5.htm)

/42/ Chapter IX, Article 7, NPAOP 10.0-1.01-10 Rules of Safety in Coal Mines. Order #62 of the State Committee of Ukraine on Industrial Safety, Labour Security and Mining Supervision – 22/03/2010 http://zakon1.rada.gov.ua/cgi-bin/laws/main.cgi?nreg=z0398-10

/43/ Article 41 of the Code of Administrative Offences of Ukraine - http://zakon1.rada.gov.ua/cgi-bin/laws/main.cgi?page=2&nreg=80731-10

/44/ Principles of Corporate Finance 7th edition, Richard A. Brealey, Stewart C. Myers, McGraw-Hill Higher Education, 2003 – p. 105

/45/ The National Bank of Ukraine discount rate – latest update 09 August-2010 http://www.bank.gov.ua/Statist/Stat_data/discount_rate.htm

/46/ JI-project 0214 : Waste heaps dismantling with the aim of decreasing the greenhouse gases emissions into the atmospherehttp://ji.unfccc.int/JI_Projects/DB/VOZK3HERSNQGFLCY0YZ3AX5W676M5R/Determination/Bureau%20Veritas%20Certification1277814730.41/viewDeterminationReport.html

/47/ Parnaby Cyclones - Worldwide Installations http://www.parnaby.co.uk/worldwide-installations.html

/48/ Electricity prices – National Regulatory Commission of Ukraine
http://www.e-meter.info/tarif/index.php?ft=tarif_12_08.txt
The tariffs are for December 2008. They were adopted and published as specified here
http://www.nerc.gov.ua/control/uk/publish/article/main?art_id=74343&cat_id=34446
(21 November 2008)

/49/ Monolith-Ukraine – Business Plan for 2009, dated 2008

/50/ Institute for Economic Research and Policy Consulting, Prospects Sector steam coal in Ukraine - it is time for reform, Berlin / Kyiv, December 2009.

/51/ Project 0214 : Waste heaps dismantling with the aim of decreasing the greenhouse gases emissions into the atmosphere
http://ji.unfccc.int/JI_Projects/DB/VOZK3HERSNQGFLCY0YZ3AX5W676M5R/Determination/Bureau%20Veritas%20Certification1277814730.41/viewDeterminationReport.html

/52/ Emission Reduction Calculation: MONOLITH, Sectoral scope: 8. Mining/mineral production, Version of the document: 1.1, Date of the document: 28th of November 2010, Global Carbon B.V.

/53/ „Vestnik“ magazine , http://www.rostovstroy.ru/archive/articles/1164.html

/54/ UA Energy magazine
http://www.uaenergy.com.ua/c225758200614cc9/0/d465824d78686a04c225787000542600

/55/ JI0144 Slag usage and switch from wet to semi-dry process at Volyn-Cement, Ukraine
http://ji.unfccc.int/JI_Projects/DB/P1QYRYMBQCEQOT0HOQM60MBQ0HXNYU/Determination/Bureau%20Veritas%20Certification1266348915.6/viewDeterminationReport.html

/56/ UA1000181 Implementation of Arc Furnace Steelmaking Plant "Electrostal" at Kurakhovo, Donetsk Region
http://ji.unfccc.int/JIITLProject/DB/4THB9WT0PK6F721UQA5H6PTHZEXT4C/details

/57/ Approved consolidated methodology ACM0009 “Consolidated baseline and monitoring methodology for fuel switching from coal or petroleum fuel to natural gas” Version 3.2
http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_4_Ch4_Fugitive_Emissions.pdf

/58/ JISC clarification letter concerning JI prior consideration, dated 23 May 2011
http://ji.unfccc.int/Ref/ClarificationDocuments/answer_dnv.pdf

/59/ State Environmental Investments Agency of Ukraine: *Letter of approval of* Processing of waste heaps at Monolith-Ukraine issued 26 August 2011, No:2276/23/7

/60/ NL Agency, Ministry of Economic Affairs, Agriculture and Innovation: *Letter of approval of* Processing of waste heaps at Monolith-Ukraine issued4 July 2011, No:2011JI24

The main differences between the PDD published for stakeholder comments and the final version 03 dated 31 August 2011are as follows:

- The starting date of the project has been changed to the 15th of January 2009
- Coordinates have been unified
- Added new references and evidences including correctly operated links

- Added new information concerning coal quality (NCV, EF)
- Monitoring plan was significantly improved from the point of view of measuring equipment and methods, operating procedures calibration, QA, emergency procedures, training, monitoring management, reporting and achieving, corrective actions, registration, etc.
- Information concerning one of the first applications of this technology in Ukraine
- Added the evidences of individual barriers
- Regulatory aspects were discussed and the references of the laws and regulations were updated
- New information sources concerning investment were added and discussed including evidences and links
- Added new evidences that Monolith-Ukraine does not use any outsourced or subcontracted equipment for moving of heaps
- New evidences and information concerning EIA procedures and shareholders consultation were added
- Generally the PDD has been improved from the formal point of view of revised formatting, new evidences and links

3.2 Follow-up Interviews with Project Stakeholders

On 22 February 2011, Mr Lumír Němeček and Mr. Alexander Osadchiev of DNV visited the site of Processing of Waste Heaps at Monolith-Ukraine and performed interviews with the representatives of project owner (Monolith-Ukraine LTD) and project consultant (Global Carbon B.V.) to confirm selected information and to resolve issues identified in the document review of the proposed project.
The main topics of the interview are summarised in table below.

	Date	Name	Organization	Topic
/61/	2011-02-22 Headquarters Luhansk	Denis Prusakov, Consultant	Global Carbon B.V.	• Type of used measurement devices, minimal accuracy, maximal calibration period • Maintenance procedures • Monitored parameters and their QA/QC • Frequency of the measurements? • Data transferred and secured? • Storage of data • Procedures for training
		Evgenij Altukhov Deputy for Ukraine	Global Carbon B.V.	
		Jurij Mikhailowitch Khlustin, general manager	Monolith-Ukraine LTD	
		Alexander Osnatch, commercial director	Monolith-Ukraine LTD	

				of monitoring personnel
		Julia Olifirova, financial director	Monolith-Ukraine LTD	• Procedures to handle unexpected problems and access to data • Procedures for the calculation of emission reductions and the preparation of monitoring report
/62/	2011-02-22 Site - Klenoviy village	Denis Prusakov, Consultant	Global Carbon B.V.	• Introduction of the extraction and separation process, • Main operational machinery and procedures • Dense medium coal washing; • Sorting unit; • Fine shale washing by spiral separators; • Compact radial concentrator; • Belt press-filters for fine shale dewatering; • Flocculent preparation; • Water and magnetite suspension tanks. • Measurement devices cross check - Laboratory
		Evgenij Altukhov Deputy for Ukraine	Global Carbon B.V.	
		Anatoli Konovalenko, production director	Monolith-Ukraine LTD	
		Alexander Osnatch, commercial director	Monolith-Ukraine LTD	

3.3 Resolution of Outstanding Issues

The objective of this phase of the determination is to resolve any outstanding issues which need be clarified prior to DNV's positive conclusion on the project design. In order to ensure transparency a determination protocol was customised for the project. The protocol shows in a transparent manner the criteria (requirements), means of verification and the results from validating the identified criteria. The determination protocol serves the following purposes:

- It organises, details and clarifies the requirements a JI project is expected to meet;
- It ensures a transparent determination process by documenting how a particular requirement has been validated and the result of the determination.

The determination protocol consists of four tables. The different columns in these tables are described in the figure below. The completed determination protocol for the project activity "Processing of waste heaps at Monolith-Ukraine" in Ukraine is enclosed in Appendix A to this report.

A corrective action request (CAR) is raised if one of the following occurs:

(a) The project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions;

(b) The JI requirements have not been met;

(c) There is a risk that emission reductions cannot be monitored or calculated.

A clarification request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable JI requirements have been met.

A forward action request (FAR) is raised during determination to highlight issues related to project implementation that require review during the first verification of the project activity. FARs shall not relate to the JI requirements for final determination.

Determination Protocol Table 1: Mandatory Requirements for JI Project Activities		
Requirement	***Reference***	***Conclusion***
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**) or a **corrective action request (CAR)** if a requirement is not met.*

Determination Protocol Table 2: Requirement Checklist *This table documents the findings from the desk review of the initial version of the PDD and the follow-up interviews with project stakeholders. For ensuring a transparent determination process, this table is not updated in case the PDD is revised during the process of the determination.*				
Checklist question	***Reference***	***Means of verification (MoV)***	***Assessment by DNV***	***Draft and/or Final Conclusion***
The various requirements in Table 1 are linked to checklist questions the project should meet. The checklist is organised in different sections, following the logic of the JI-PDD	*Gives reference to documents where the answer to the checklist question or item is found.*	*Means of verification (MoV) are **document review (DR)**, **interview (I)** or any other follow-up actions (e.g., on site visit and telephone or email interviews) and **cross-checking (CC)** with available information relating to projects or technologies similar to the proposed JI project activity under determination.*	*The discussion on how the conclusion is arrived at and the conclusion on the compliance with the checklist question so far.*	*OK is used if the information and evidence provided is adequate to demonstrate compliance with JI requirements. A c**orrective action request (CAR)** is raised when project participants have made mistakes, the JI requirements have not been met or there is a risk that emission reductions cannot be monitored or calculated. A **clarification request (CL)** is raised if information is insufficient or not clear enough to determine whether the applicable JI requirements have been met. A **forward action request (FAR)** during determination is raised to highlight issues related to project implementation that require review during the first verification of the project activity.*

Determination Protocol Table 3: Resolution of Corrective Action and Clarification Requests *This table lists the corrective action requests and clarification requests indentified in Table 2 and documents how these issues raised were resolved. All the issues raised shall be closed before finalising the determination.*			
Corrective action and/ or clarification requests	***Ref. to checklist question in table 2***	***Response by project participants***	***Determination conclusion***
*The **CARs** and/ or **CLs** raised in Table 2 are repeated here**.***	*Reference to the checklist question number in Table 2 where the CAR or CL is explained.*	*The responses given by the project participants to address the CARs and/or CLs.*	*The determination team's assessment and final conclusions of the CARs and/or CLs.*

Determination Protocol Table 4: Forward Action Requests		
Forward action request	***Ref. to checklist question in table 2***	***Response by project participants***
*The FARs raised in Table 2 are repeated here**.***	*Reference to the checklist question number in Table 2 where the FAR is explained.*	*Response by project participants on how forward action request will be addressed prior to first verification.*

Figure 1 Determination protocol tables

3.4 Internal Quality Control

The final determination report underwent another technical review before being forwarded to the Supervisory Committee. The technical review was performed by a technical reviewer qualified in accordance with DNV's qualification scheme for JI determination and verification.

3.5 Determination Team

				Type of involvement					
Role	***Last Name***	***First Name***	***Country***	Desk review	Site visit / Interviews	Reporting	Supervision of work	Technical review	TA 8.1/10.1 competence
Team leader (Determiner)	Vőrős	Mario	Czech Republic	✓		✓	✓		
Assessor under training	Andrtová	Zuzana	Czech Republic	✓		✓			
Assessor under training	Němeček	Lumír	Czech Republic	✓	✓	✓			
Assessor under training	Osadchiev	Alexander	Russia	✓	✓				
Expert (TA8.1)	Faggin	Mateo	Italy	✓		✓			✓
Technical reviewer	Flagstad	Ole	Norway					✓	
TA8.1 input to TR	O'Toole	Barbara	USA						✓

4 DETERMINATION FINDINGS

The findings of the determination are stated in the following sections. The determination criteria (requirements), the means of verification and the results from validating the identified criteria are documented in more detail in the determination protocol in Appendix A.
The final determination findings relate to the project design as documented and described in the revised and resubmitted project design documentation.

4.1 Participation Requirements

The project participants are MONOLITH-UKRAINE LTD representing Ukraine as Host party and Global Carbon BV is representing Netherlands.

Ukraine as well as Netherlands have designated a focal point and has submitted its national guidelines and procedures for the approval of JI projects, and thus meets the participation requirements (Marrakech Accords, JI Modalities, §20). The DNAs of both countries issued a Letter of Approval (LoA) authorising MONOLITH-UKRAINE LTD and Global Carbon BV as project participants.

The DNA of Ukraine issued the LoA on 26 August 2011 under the No:2276/23/7/ /59/. The DNA of the Netherlands issued the LoA on 4 July 2011 under the No: 2011JI24 /60/.

Both LoAs were provided to DNV. They were checked by DNV and found appropriate.

The project does not involve public funding, and the determination did not reveal any information that indicates that the project can be seen as a diversion of official development assistance (ODA) funding towards Ukraine.

4.2 Project Design

The project realized coal extraction from mine's waste heaps. The location of the project is Klenoviy village in Sverdlovsk district, Luhansk region in Ukraine and its coordinates are 39°28′24.46″ E and 48°7′19.2″ N.

The project propose removal of the waste heaps with bulldozers and transporting into mobile sorting unit, where will be separated individual grades by vibrating screening process. The grades will +100", +40" and -40" mm. Grades +100" and +40" mm are sorted out at a slow conveyor belt and moved to product storage. The grade -40" mm is sent to special concentration facility made by Parnaby Cyclones International. It is medium cyclone with magnetite suspension and produced 1-3", 0-6" and 6-40" mm coal grades.

The starting date of the project is date on which the implementation or construction or real action of the project begins. The starting date of the project therefore has been changed to the 15th of January 2009 in the PDD ver.03. This is confirmed by the supporting document which is the Building permit #18/2009 issued by the State Architectural and Construction Control of the Luhansk Region /28/.

The starting date of the crediting period is 1 January 2010 and the facility has been operational on this date. The lifetime of the project is 15 years .This is confirmed by the supporting document which is the Permission to Conduct Operations #4018.09.30-10.10.1 issued by Derzhgirpromnaglyad (State Industrial Mining Supervision Committee /36/

4.3 Project boundary

The boundaries are clearly defined as project location by geographical coordinates and the emission resources, i.e.CO_2 emissions from consumed electricity of Ukrainian grid, emissions from diesel fuel used by project activity and methane fugitive emissions from amount of coal mined in the baseline scenario. The project boundary consists of

- Dense medium coal washing;
- Sorting unit;
- Fine shale washing by spiral separators;
- Compact radial concentrator;
- Belt press-filters for fine shale dewatering;
- Flocculent preparation;
- Water and magnetite suspension tanks.
- Stocks of separated coal and wastes heaps
- Administrative buildings including laboratory and infrastructure

Overview of all emission sources:

Baseline scenario

- Burning of coal in the waste heaps - CO_2

Project scenarios

- Use of fuel to run part of the project equipment (diesel) - CO_2,
- Electricity consumption by the project equipment- CO_2

Emissions evolved during the combustion of energy coal are assumed to be equal in both project and baseline scenario. It is the reason why this source of emissions is not taken into in the project and the baseline scenario.

For the value of Emission factor for fugitive methane emissions from coal mining (25.67 m^3/t) the data provided in the National Inventory Report of Ukraine 1990-2008, p.74 are used /13/. This document is the official GHG Inventory prepared by the Host Country as part of the reporting requirements of the Kyoto Protocol and is available on the UNFCCC pages. Customer discussed this problem with the Focal Point. He has adopted its approach - the project excluded CO_2 emissions from coal consumption displaced by project activity.

It was confirmed and evidenced that the coal produced by the project is on average better than the coal produced by underground mines of the region /24//25/

4.4 Baseline Determination

A baseline for the JI project is in accordance with the criteria set out in Appendix B to decision 9/CMP.1 1 of the JI guidelines and with further guidance on baseline setting and monitoring developed by the Joint Implementation Supervisory Committee (JISC). In accordance with the Guidance on Criteria for Baseline Setting and Monitoring (version 2), the baseline for a JI project is the scenario that reasonably represents the anthropogenic emissions

by sources or anthropogenic removals by sinks of GHGs that would occur in the absence of the proposed project.

The determination of the baseline scenario consists of steps 1 to 5.

Step 1. Indication and description of the theoretical approach chosen regarding baseline setting

Baseline setting and monitoring criteria set out under Appendix B to decision 9/CMP.1 of the JI guidelines.

Step 2. Application of the approach chosen

Plausible future scenarios will be identified in order to establish a baseline

Sub step 2a. Identifying and listing plausible future scenarios.

Scenario 1 Continuation of existing situation

Scenario 2 Direct energy production from the heat energy of burning waste heap

Scenario 3 Production of construction materials from waste heap matter

Scenario 4 Coal extraction from waste heaps without JI incentives

Scenario 5 Systematic monitoring of waste heaps condition and regular fire prevention and extinguishing measures

Sub step 2b. Barrier analysis (for details see chapter 4.5)

Scenario 1. Continuation of existing situation

Does not face any barriers.

Scenario 2 Direct energy production from the heat energy of burning waste heap

- Technological barrier - highly experimental technology, which has not been implemented even in a pilot project /37/
- Investment barrier - investment into unproven technology carries a high risk /38/.

Scenario 3 Production of construction materials from waste heap matter

- Technological barrier - based on known technology, however, this it is not available in Ukraine /39/

Scenario 4 Coal extraction from waste heaps without JI incentives

- Investment barrier - financially unattractive

Scenario 5 Systematic monitoring of waste heaps condition and regular fire prevention and extinguishing measures

- Investment barrier – no revenues but additional costs for waste heaps are supposed /40//41/

Sub step 2d. Baseline identification

Continuation of existing situation – scenario 1 is the most plausible future scenario and baseline scenario because all others scenarios includes prohibitive barrier.

The baseline determination is set correctly and established according to the criteria outlined in the JISC Guidance /4/

	GHGs involved	Description
Baseline emissions	CO_2	Main emission source. Emissions due to the burning of coal in the waste heaps.
Project emissions	CO_2	Emissions due to consumption of electricity from the grid by the project activity and emissions due to consumption of diesel fuel by the project activity.
Leakage	CH_4	Leakages due to fugitive emissions of methane in the mining activities

4.5 Additionality

DNV has not been provided with any documentation that explicitly documents the consideration of JI prior to the starting date. The JISC clarification provided in clarification letter dated 23 March 2011 /58/ is found to be the latest guidance on this topic and it clearly states that prior consideration of JI is outside of the scope for JI determinations. On this basis DNV has not followed up on the issue.

Additionality was demonstrated according to the Tool for the demonstration and assessment of additionality, version 5.2 /7/.

Step 1:

Identification of alternatives to the project activity consistent with current laws and regulations.

Credible alternatives to the project activity were identified and they were in compliance with mandatory legislation and regulations in Ukraine. Existing Ukrainian laws and regulations, waste heaps are considered as sources of possible dangerous emissions into the atmosphere and are regulated by Rules of Safety in Coal Mines /42/ and by the Code of Administrative Offences of Ukraine which foresees only a small fine for such offence /43/

.

Alternative 1 - Coal extraction from waste heaps without JI incentives

It is similar to the project activity. The waste heaps are processed in order to extract coal and used it the energy sector.

Alternative 2 - Continuation of existing situation were identified.

Currently the waste heaps are not utilized. Self-heating and subsequent burning of waste heaps is very common situation. Practically no fire provisions have been used. This alternative needs additional expenses for waste heaps owners connected with safety aspects and high fire risk elimination and due to the problematic financial situation of most of them practically no fire provisions have been realised.

Step 2:

Investment Analysis.

The investment analysis has been developed following the Sub-step 2b: Option III. - Apply benchmark analysis of the Tool for the demonstration and assessment of additionality Version 05.2. /7/

The benchmark analysis (Option III) was applied and the indicator of Net Present Value (NPV) was used. The NPV represents the present value of an investment's future net cash flows minus the initial investment.

This benchmark has been selected for the following reasons:

- There was no formalized internal benchmark systematically applied by the project owner during the evaluation procedure;
- In Ukraine there is no benchmark approved by the government available for projects of this kind;
- NPV is a generally accepted for project evaluation and could be used as benchmark. /44/

Due to the above mentioned reasons DNV considers this approach as correct.

The following assumptions were used for the calculations.

- 15th of January 2009 was taken as investment decision date and all prices, tariffs and costs for the analysis are connected to this date;
- The operational equipment was completely new, its lifetime has been supposed as 15 years based on the physical expected depletion of the waste heaps that will be processed and so it will cover the first crediting period as well as the following period 2013 - 2024.
- At the time of analysis the discount rate for NPV calculation of 12% was given by the National Bank of Ukraine discount /45/
- The local currency – UAH has been used for all the calculations.

The analysis at the time of decision has been based on actual market data and information available to the decision makers. The analysis presented in the PDD takes that information and presents it with references that back-up the analysis. Such references may be the documents that where published after the date of analysis but they do contain data from the period before the decision has been made and thus represent the market information which

has been available to decision makers at the time the analysis has been performed. The inputs and links for the analysis provided by the project owner were verified. Original evidences and sources for data were checked:

- Fuel price /33/. The data for fuel price are taken from the source referenced and are average prices for September 2008 – January 2009 and thus represent market information that has been available to the decision makers at the time the analysis has been performed.
- Coal price /49/, /50/. The data for coal price are taken from the source referenced and are prices for the private producers in 2008 and thus represent market information that has been available to the decision makers at the time the analysis has been performed.,
- Investment data /23/. The investment cost estimation has been prepared by the independent project design institute and evidence of that has been provided to the determination team /23/. The date of the estimation is 23rd of July 2008. The basis is the default budgetary estimation according to the building practices of Ukraine. These estimations are performed in accordance with the legislation developed by the Ministry of Regional Development and Construction of Ukraine. The full and updated list of relevant legislation is available /23/.
- Electricity prices /48/.

The project activity will not be financially attractive and will lead to negative value of NPV of -46 162 kUAH as well as the corresponding negative cash flow.

Sensitivity analysis.

Key assumptions such as the price for coal and investment costs have been confirmed.

- The price of coal has been sourced from the report Prospects Sector steam coal in Ukraine /50/.
- Investment costs are additionally confirmed by the project construction design where they were estimated by the developer /23/. The estimated investment costs are 60 150 kUAH while investment analysis in PDD uses 61 151 kUAH which is slightly larger in order to account for development period and contingencies during construction.
- The price for fuel is a conservative estimate as the actual prices have risen significantly above the estimated level /33/ Prices for the period of September 2008 – January 2009 have been between 6,25 and 5,75 UAH/l
- Operational cost also reflect conservative estimate for projects of this kind /51/. Calculation of total operational costs per tonne of coal for this project produces a result of 176.85 UAH/t (Assumptions for the year of 2011 based on 2010 constants).

The proposed method of sensitivity analysis combines sets of assumptions on variations of key inputs in the investment analysis into the several scenarios and uses the NPV for the financial evaluation. As a matter of fact, these scenarios take into account reasonable variations of the investment costs. According to the “Tool for the demonstration and assessment of additionality” (Version 05.2) Annex: Guidance on the Assessment of Investment Analysis: (Version 02) Paragraph 17“ these variations cover the range of +10% and –10%. There were no reasons to expect different variation at the time of the analysis. The

provided range reasonably covers possible inflation expectations that on average has been 8,4% in Ukraine during 2002-2007

The sensitivity analyses took into account the following 3 scenarios

- Scenario 1 - Investment cost +10%, fuel price +10%, operational expenses +10%, coal price -10% - NPV = -89 666. Taking into account that increase of all 3 values is real because of the current prices development, this scenario shows the worst possible case for the investor because the project cash flow will be the most negative.
- Scenario 2 - Investment cost -10%, fuel price -10%, operational expenses -10%, coal price +10% - NPV = -2 659. All these 3 assumptions represents the best variation for the project, nevertheless they seem to be not real because of the general increase of material, fuels prices. This scenario represents the best case for investor because of the highest NPV resulting to the most acceptable value of cash flow, nevertheless still negative.
- Scenario 3 - Investment cost -10%, fuel price +10%, operational expenses +10%, coal price +20% - NPV = -14 829. This scenario represents a more realistic set of assumptions, nevertheless the NPV as well as the project cash flow is lower then in scenario 2.

Because the project does not reach positive NPV in any scenario it can be assumed that project activity is unlikely to be financially/economically attractive.

Step 3: Barrier analysis.
In line with the Additionality Tool /7/ the barrier analysis is assessed as follows:

- **Technological barrier has been found for the following scenarios**
  - Direct energy production from the heat energy of burning waste heap
    For this case the highly experimental technology has not been yet implemented even a pilot project is assumed and up to now the viability of it has not been proved, it does not allow the control and management of the emitted gases and utilization of the heat pump utilizing the heat of the of the waste heap mass is very problematic/37/. Moreover on-site generation of electricity is connected with other engineering activities. So this barrier is real.

  - Production of construction materials from waste heap matter
    For this case the corresponding technology is known nevertheless it is depended on the content of toxic components and other technical and economic aspects. Moreover this technology is not available in Ukraine /39/.

    PDD mentions pilot projects at two instances – first at the consideration of possible baseline scenario #2 - Direct energy production from the heat energy of burning waste heap – where it stated that pilot projects have not been realized and that the whole idea of such technology is only a theoretical and highly debatable concept at this stage. References to relevant evidences and literature are provided as /37//38/.
    Second instance of mentioning pilot projects is the consideration of possible baseline scenario #3 Production of construction materials from waste heap matter. Here it has been mentioned that pilot projects have been realized with the support of public

financing but not in Ukraine. Evidence of such pilot project have been provided in /53/ which is the link to the article in „Vestnik“ magazine (“One of the first such activities has been started in Rostov region of Russia with the support of governmental financing. Such activity will also use fuel to process the waste heap mater by sintering”).
So this barrier is real, too.

- **Investment barriers**
  - Direct energy production from the heat energy of burning waste heap
    Investment into unproven technology carries a high risk /38/ taking into account economic situation in Ukraine /39/. The AMB Country Risk Report indicates the Ukraine financial sector as high-risk. Taking into account mentioned reference and the situation in Ukraine this barrier is real and such investments are not interesting for the investors.

  - Coal extraction from waste heaps without JI incentives
    This case is not financially attractive because all the scenarios indicate the negative NPV. So without JI revenues this option is not possible to realise and the barrier is real.

  - Systematic monitoring of waste heaps condition and regular fire prevention and extinguishing measures
    This scenario asks for additional expenses for waste heaps owners connected with safety aspects and high fire risk elimination as well as with sustainable development problems /40//41/. Moreover no revenues are supposed for such as activities. So for this option the investment barrier is real.

Step 4: Common practice analysis
The employed technology (Dense Medium Cyclone) is state of the art technology and will result in better performance than commonly used accumulation of un-sorted mining waste that is currently the host country prevailing practice. I.e. this project the technology is unique and firstly used in Ukraine /47/.
The commonly used accumulation of unsorted mining waste has been considered as a possible baseline scenario in the PDD (see Section B.1. Scenario 1. - Continuation of existing situation). So, both existing and commonly used accumulation of the mining waste and employed technology are discussed in the PDD. These waste heaps have been accumulated some time before the start of the project activity from the mining waste of underground mines”.

There are no similar activities to the proposed project activity in Ukraine except for those that are implemented with the support of JI mechanism /46/ /13/. Because the similar activities cannot be widely observed this specific technology evidently is not in common practice in the Ukraine. From the above additionality analysis the proposed project activity is deemed additional by DNV.

The projects at reference /47/ represent worldwide applications of the technologies from Parnaby Cyclones. These are not JI projects and are not presented as such. In Ukraine there

are only two applications of such technology – one being Monolith-Ukraine Ltd. which uses coal washing process for processing matter of the waste heaps. The other project is not applied to waste heaps but is a closed circuit effluent plant used for dewatering of fine coal slurry. Information about project technology and its' applications as well as peculiarities of its' application in Ukraine has been provided in the PDD in accordance with the Guidelines for users of the JI PDD form (version 04).

4.6 Monitoring

Project and baseline emissions are determined in accordance with appendix B of the JI Guidelines reflecting good practice through a structured and complete Monitoring plan (manual) /18/ taking into account all important factors and variables contributing to the baseline and the project emissions as well as setup of measurement installation, archiving, data storage and record handling procedure, training of monitoring personnel, procedures identified for corrective actions in order to provide for more accurate future monitoring and emergency preparedness for cases where emergencies can cause unintended emissions.

Director of the company is responsible for all the monitoring activities including certification and maintenance/18/ .The responsibilities of individual procedures have been covered by the monitoring activities flowchart, covering the following responsibilities.

- Chief energy officer – electricity consumption
- Production Manager – coal production and delivery
- Procurement Manager – diesel fuel consumption

The Monitoring Manual has been provided to the Determination Team /18/. Documents and reports on the data that are monitored will be archived and stored by the project participants. The following documents will be stored: primary documents for the accounting of monitored parameters in paper form; intermediate reports, orders and other monitoring documents in paper and electronic form; documents on measurement devices in paper and electronic form. These documents and other data monitored and required for determination and verification, as well as any other data that are relevant to the operation of the project will be kept for at least two years after the last transfer of ERUs /18//29/. It is DNV's opinion, that the project participant is able to implement the monitoring plan.

4.6.1 Parameters determined ex-ante

The parameters determined ex-ante are:

- Net calorific values,
- Carbon oxidation factors and
- Carbon contents for individual fuels, i.e. diesel fuel and coal.

These parameters are sourced from National Inventory Report of Ukraine 1990 – 2008 /13/ except the carbon oxidation factor of diesel fuel, which is sourced from Revised 1996 IPCC Guidelines and not from National Inventory Report (NIR) because the NIR is prepared on the basis of Revised 1996 IPCC Guidelines /16/ and country-specific oxidation factors are available only for coal in the NIR.

Further parameters are GWP and density of methane and emission factors for CO_2 for consumed electricity, fugitive methane emissions from coal mining and correction factor for the uncertainty of the waste heap burning process. These parameters are based on standards or studies (IPCC Second Assessment report for GWP /14/, National Inventory for $EF_{CH4, CM}$ /13/ or scientific study Analysis on the fire risk of Luhansk Region's waste heaps /15/ and Standardized emission factor for the Ukrainian electricity grid /17/).

The parameters are summarized below:

Data and Parameters	***Unit***	***Value***	***Source of data used***
Global Warming Potential of Methane		21	IPCC Second Assessment report /14/
Methane density	t/m^3	0.00067	Standard value at 20°C and 1 ATM
Net Calorific Value of coal	TJ/kt	21.59	National Inventory Report of Ukraine /13/
Net Calorific Value of diesel fuel	TJ/kt	42.17	
Carbon Oxidation factor of coal	ratio	0.98	
Carbon Oxidation factor of diesel fuel	ratio	0.99	IPCC Guidelines /16/
Carbon content of coal	tC/TJ	26.8	National Inventory Report of Ukraine /13/
Carbon content of diesel fuel	tC/TJ	20.2	
CO_2 emission factor for Ukrainian grid	tCO_2/MWh	0.896	Standardized emission factor for the Ukrainian electricity grid /17/
Emission factor for fugitive methane emissions from coal mining	m^3/t	25.67	National Inventory Report of Ukraine /13/
Correction factor for the uncertainty of the waste heaps burning process	ratio	0.69	Analysis of the risk of Luhansk Region's waste heaps /15/

4.6.2 Parameters to be monitored ex-post

The monitored parameters are

- Additional electricity consumed in year y as a result of the implementation of the project activity($EC_{PJ,y}$)
- Amount of diesel fuel that has been used for the project activity in the year y ($FC_{PJ,Diesel,y}$) and
- Amount of coal that has been extracted from the waste heaps and combusted for energy use in the project activity in the relevant period which is equal to the amount of coal that has been mined in the baseline scenario and combusted for energy use' – is equal to the actual amount of coal extracted from the waste heaps and is monitored

directly. Please refer to Section D.1.1.3. of the PDD ver. 03. Description of this value is in line with the JI Specific Approach used to establish the baseline and monitoring plan for the project. This JI Specific Approach is based on and improves the JI Specific Approach applied in the project JI0214 Waste heaps dismantling with the aim of decreasing the greenhouse gases emissions into the atmosphere for which determination has been deemed final by the JISC. ($FC_{BE,Coal,y}$).

Further the fugitive emissions of methane in the mining activities are calculated from mined coal amount (taken into account as leakage).

The measurement method selected for the project is based on measuring of some monitored parameters – coal produced and electricity consumed – and relying on accounting documents and reports for other parameters (fuel used). The measurement setup will be based on the following meters:

- electricity consumed - the "EPQS" electronic multifunction meter produced by Elgama-Elektronika with the following accuracy class: of 0.5s /12//31/. Calibration is required every 6 years in Ukraine /12/.
- coal produced – electronic automobile scales DVA-80 produced by "Diskret" with the "average" accuracy class (± 20 – 40 kg depending on the load) /32/. Calibration required every year in Ukraine

4.7 Estimate of GHG Emissions

The emission reductions are real, measurable and give long-term benefits related to the mitigation of climate change. The implemented monitoring methodology and measurement system allow for calculation of real project specific emissions reduction.

Emissions from the project activity are calculated as follows:

$PE_y = PE_{EL,y} + PE_{Diesel,y}$, where:

PE_y , - Project Emissions due to project activity in the year *y* (tCO_2e),

$PE_{EL,y}$ - Project Emissions due to consumption of electricity from the grid by the project activity in the year *y* (tCO_2e),

$PE_{Diesel,y}$ - Project Emissions due to consumption of diesel fuel by the project activity in the year *y* (tCO_2e).

These, in turn, are calculated as:

$PE_{EL,y} = EC_{PJ,y} \cdot EF_{CO2,EL,y}$,

where:

$EC_{PJ,y}$ - Additional electricity consumed in year *y* as a result of the implementation of the project activity (MWh),

$EF_{CO2,EL,y}$ - CO_2 emission factor for electricity consumed by the project activity in year *y* equal to emission factor of Ukrainian grid for reducing projects (tCO_2/MWh). The

emission factor has been selected from the study "Standardized emission factors for the Ukrainian electricity grid" version 5.2. The emission factor for the reducing projects includes grid losses into the estimation and, therefore, is higher than the emission factor for projects producing electricity. In this project additional electricity consumption is a part of the project scenario. Calculation of the project scenario emissions due to additional electricity consumption must take grid losses and associated emissions into account. The selected emission factor is conservative.

$$PE_{Diesel,y} = \frac{FC_{PJ,Diesel,y}}{1000} \cdot NCV_{Diesel} \cdot OXID_{Diesel} \cdot k^{C}_{Diesel} \cdot 44/12,$$

where:

$FC_{PJ,Diesel,y}$ - Amount of diesel fuel that has been used for the project activity in the year *y*, t.

Emissions in the baseline scenario are calculated as follows:

$$BE_{y} = BE_{WHB,y},$$

where:

BE_{y}, - Baseline Emissions in the year *y* (tCO_2e),

$BE_{WHB,y}$ - Baseline Emissions due to burning of the waste heaps in the year *y* (tCO_2e).

These, in turn, are calculated as:

$$BE_{WHB} = \frac{FC_{BE,Coal,y}}{1000} \cdot p_{WHB} \cdot NCV_{Coal} \cdot OXID_{Coal} \cdot k^{C}_{Coal} \cdot 44/12$$

where:

$FC_{BE,Coal,y}$ - Amount of coal that has been mined in the baseline scenario and combusted for energy use, equivalent to the amount of coal extracted from the waste heaps in the project activity in the year y, t.

p_{WHB} - Correction factor for the uncertainty of the waste heaps burning process. This factor is defined on the basis of the survey of all the waste heaps in the area that provides a ratio of waste heaps that are or have been burning at any point in time to all existing waste heaps. This number is taken from the study /26/ of waste heaps in Luhansk region and is defined as the ratio of waste heaps that are or have been on fire historically to all existing waste heaps of Luhansk region. This ratio is equal to 0.69 according to this study. Coal heaps can self ignite if they are not turned over regularly. Once ignited, they burn or smoulder until the carbon content is fully converted. They will essentially burn "forever" 69% is a an reasonable and appropriate estimate. Some coal heaps will not burn or the environmental conditions will change and the coal heap will stop burning (rain, snow, very cold air)

Leakages in the year y are calculated as follows:

$$LE_{y} = -LE_{CH_4,y}$$

Leakages due to fugitive emissions of methane in the mining activities in the year *y* (tCO_2e).

$$LE_{CH_4,y} = FC_{BE,Coal,y} \cdot EF_{CH_4,CM} \cdot \rho_{CH_4} \cdot GWP_{CH_4},$$

Where
ρ_{CH4} (t/m^3) Methane density Standard (at room temperature 20˚C and 1 atm = 0.00067)

DNV was able to clarify taking into account the below mentioned documents and the evidences provided by PP as well as the CAR2, CL10, CL16, CL17 and teleconference discussion that leakages associated with the fugitive methane emissions are considered measureable and directly attributable to the project activity. These leakages are measurable under the procedure as used in 2006 IPCC Guidelines /16/ (See Volume 2, Chapter 4, Page 4. This guideline calculates with raw amount of coal that is being mined in moreover PDD takes into account the high quality coal concentrate extracted from the waste heaps) as well as the approved consolidated methodology ACM0009 “Consolidated baseline and monitoring methodology for fuel switching from coal or petroleum fuel to natural gas” Version 3.2 /57/ (Page 8) is including a leakage calculation applying the same principles and it is found acceptable to apply this in the context of the proposed project as there is a net export of coal from Ukraine and this indicates that the coal supply to the national market is sufficient and that no national increase in consumption can be expected because of the additional coal provided from the project activity.

Under the corresponding calculation the amount of coal extracted from the waste heap is multiplied by the emission factor /13/ and any conversion coefficients.

Coal produced by the project activity is not mined but extracted from the waste heap through the advanced beneficiation process. So it is considered that the coal produced by the project activity substitutes the coal that would have been otherwise mined in the baseline. Coal that is mined in the baseline has fugitive methane emissions associated with it and the coal produced by the project activity does not have such emissions associated with it. This has been clarified through PP input. 25.67 m^3 CH_4 / tonne coal is taken from national inventory and correctly applied in the calculations for leakage.

By the DNV assessment the above mentioned methodological approach has been commonly used and is generally applied in renewable energy projects using substitution of grid electricity with renewable-source electricity as well as in cement sector /55/ and in metallurgy sector /56/.

The annual emission reductions are calculated as follows:

$$ER_y = BE_y - LE_y - PE_y$$

where:
ER_y - Emissions reductions of the JI project in year y (tCO_2e)
LE_y – Leakages in the year y (tCO_2e);
BE_y - Baseline Emission in year y (tCO_2e);
PE_y - Project Emission in year y (tCO_2e);

Emissions during crediting period 2010 - 2012 (As of 15th of January 2009)

1	Total project emissions during the crediting period	tCO_2	16 592
2	Total leakages during the crediting period	tCO_2	-121 440
3	**Summary of total project emissions and leakage during the crediting period (the sum.1. and2)**	**tCO_2**	**-104 848**
4	Baseline emissions during the crediting period	tCO2	482 363
5	**Summary of total emission reductions during the crediting period (difference between 4 and 3)**	**tCO_2**	**587 211**

4.8 Environmental Impacts

The EIA was has been developed by PJSC "LUHANSKGIPROSHAKHT" in 2008 /5/ and approved by the State Department of Environmental Protection of Ukraine in the Luhansk Region dated 11 August 2008 /19/. The result of assessment covers major impact of the project on air due to dust emission from erosion, loading and offloading of material and transport. Further significant impact is noise but this impact is limited and will be in compliance of local standards. Impacts to water and flora and fauna are small because project will use closed cycle without discharge of waste water and it is located in industrial locality of mine, which should be re-cultivate after finish of activities.

Transboundary effects are not found. The impact on land is positive because project activity decrease amount landed waste heaps.

EIA_was approved by the State Department of Environmental Protection of Ukraine in the Luhansk Region on11 August 2008 /19/.

4.9 Comments by Local Stakeholders

No stakeholders' consultation process for the JI projects is required by Ukraine. But this process was a part of the EIA process which is mentioned in the PDD /1/.

Stakeholders were informed through the mass media about the proposed project as suggested by the State Construction Standard DBN A.2.2.-1-2 /20/.

Information about this project was made public through the local newspaper "VPERED-Rovenky" on the 21 January 2008 /21/. No comments were received.

4.10 Global stakeholders consultation

The PDD, version 1.1 of 28 November 2010 was made publicly available on JI website and Parties, stakeholders and observers were through the JI website

http://ji.unfccc.int/JI_Projects/DB/IPT7L3CLGIZTGGX27T2101W7XCUCWW/PublicPDD/7Z9FSMMY4DIFLHB7TGFLQ0B5YF3987/view.html

invited to provide comments during a 30 days period from 23 February 2011 to 24 March 2011.

No comments were received.

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APPENDIX A

JI DETERMINATION PROTOCOL

Table 1 Mandatory requirements for Joint Implementation (JI) project activities

Requirement	Reference	Conclusion
1. The project shall have the approval of the Parties involved	Kyoto Protocol Article 6.1 (a)	~~CAR1~~ OK
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
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
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
5. Parties participating in JI shall designate national focal points for approving JI projects and have in place national guidelines and procedures for the approval of JI projects	Marrakech Accords, JI Modalities, §20	OK
6. The host Party shall be a Party to the Kyoto Protocol	Marrakech Accords, JI Modalities, §21(a)/24	OK
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 Accords, JI Modalities, §21(b)/24	OK
8. The host Party shall have in place a national registry in accordance with Article 7, paragraph 4	Marrakech Accords, JI Modalities, §21(d)/24	OK
9. Project participants shall submit to the independent entity a project design document that contains all information needed for the determination	Marrakech Accords, JI Modalities, §31	OK
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 Accords, JI Modalities, §32	OK
11. Documentation on the analysis of the environmental impacts of the project activity, including transboundary impacts, in accordance with procedures as determined by the 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	Marrakech Accords, JI Modalities, §33(d)	~~CL13~~ OK

Requirement	Reference	Conclusion
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 Accords, JI Modalities, Appendix B	~~CAR2~~ OK
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 Accords, JI Modalities, Appendix B	~~CAR2~~ OK
14. The baseline methodology shall exclude to earn emission reductions for decreases in activity levels outside the project activity or due to force majeure	Marrakech Accords, JI Modalities, Appendix B	~~CAR2~~ OK
15. The project shall have an appropriate monitoring plan	Marrakech Accords, JI Modalities, §33(c)	~~CL12~~ OK

Table 2 Requirements checklist

Checklist Question		Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
A General description of project activity						
A.1 Project boundary *Project Boundaries are the limits and borders defining the GHG emission reduction project.*						
A.1.1	Are the project's spatial boundaries (geographical) clearly defined?	/1/	DR	Yes, the geographical boundaries are set as industrial site of the former Mine #6 "Daryevkaya" at Klenoviy village, Sverdlovsk district, Luhansk region on Ukraine. The coordinates are follow: 39°28'24.46'' E and 48°7'19.2'' N But different numbers are presented on the picture attached in this section and thus the coordinates should be clarified.	~~CL1~~	OK
A.1.2	Are the project's system boundaries (components and facilities used to mitigate GHGs) clearly defined?	/1/	DR	The project's system boundaries are limited to the waste heaps in legal use of Monolith-Ukraine Ltd. And carbon CO_2 emissions due to consumption of power from Ukrainian electricity grid and as CO_2 emissions due to consumption of fossil fuels in the project scenario.		OK
A.2 Participation Requirements *Referring to Part A and Annex 1 of the PDD as well as the JI glossary with respect to the terms Party, Letter of Approval, Authorization and Project Participant.*						
A.2.1	Which Parties and project participants are participating in the project?	/1/	DR	As host party is presented Ukraine and Monolith-Ukraine Ltd. The second involved party id Netherlands represented by Global Carbon BV.		OK

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Checklist Question		Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
A.2.2	Have all involved Parties provided a valid and complete letter of approval and have all private/public project participants been authorized by an involved Party?	/1/		No, the LoAs were not provided yet. According to the procedures of Joint Implementation project approval in Ukraine, namely the Decree #206 of the Cabinet of Ministers of Ukraine http://zakon1.rada.gov.ua/cgi-bin/laws/main.cgi?nreg=206-2006-%EF, LoA can only be obtained after the PDD and Determination Report have been submitted to the Ukrainian authorities.	~~CAR1~~	OK
A.3 Technology to be employed *Determination of project technology focuses on the project engineering, choice of technology and competence/ maintenance needs. The AIE should ensure that environmentally safe and sound technology and know-how is used.*						
A.3.1	Does the project design engineering reflect current good practices?	/1/	DR	The adopted technology is to be considered good current practice. This method is generally known; nevertheless for the purpose of this project the technology is unique and firstly used in Ukraine. This fact should be evidenced.	~~CL2~~	OK
A.3.2	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?	/1/	DR CC	The employed technology, namely Dense Medium Cyclone, is current and will result in better performance than commonly used accumulation of un-sorted mining waste that is currently the host country prevailing practice. I.e. this project the technology is unique and firstly used in Ukraine. Necessary to be evidenced.	~~CL2~~	OK
A.3.3	Does the project make provisions for meeting training and maintenance needs?	/1/	DR	The project does not require extensive training, only basic industrial profession training, which will be provided locally. All employees in work position of project should have professional education certificates and pass periodical safety		OK

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Checklist Question		Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
				trainings.		
B Project Baseline *The determination of the project baseline establishes whether the selected baseline methodology is appropriate and whether the selected baseline represents a likely baseline scenario.*						
B.1.1	Does the project apply an approved CDM methodology and the correct version thereof? If yes, please proceed to section B.3. If a JI specific approach is applied, please complete section B.2.	/1/	DR	No, the specific JI approach was used.		OK
B.2	**Baseline methodology (JI specific approach)**					
B.2.1	Are the proposed applicability conditions appropriate and adequate?	/1/	DR	Yes, the PDD describe steps requested in the Guidelines for users of JI PDD Form, version 4 and identified the most plausible baseline scenario including assessing of impacts as legal requirements, sectoral policies, economic situation and socio-demographic factors as well as local availability of technologies, skills, kow-how and BATs, prices etc.		OK
B.2.2	Is the methodological basis for determining the baseline scenario described?	/1/	DR	Yes, the project assesses plausible scenarios for future and used barrier analysis for identification.		OK
B.2.3	Is the methodological basis for determining the baseline scenario, and whether the basis is appropriate and adequate?	/1/	DR I	Yes, the methodological basis is adequate. Under the statement of PP this project using described technology is the first in Ukraine – first application. Nevertheless no evidence was provided and in the PDD should be justified if it is first of kind or one of first application.	~~CL2~~	OK
B.2.4	Does the application of the methodology result in a baseline	/1/	DR	Yes, the result of application is baseline as		

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	Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
	scenario that reasonably represents the anthropogenic emissions by sources of greenhouse gases that would occur in the absence of the proposed project activity?			continuation of current situation.		
B.2.5	Can it through the use of the methodology be demonstrated that a project activity is additional and, therefore, not the baseline scenario?	/1/	DR	Yes, after demonstration of evidences, that the statement for individual scenarios is valid and based on scientist and realistic premises.		OK
B.2.6	Is the methodology to calculate the baseline emissions and is the basis for calculating baseline emissions appropriate and adequate?	/1/	DR	Yes, the baseline emissions are calculated base on values from national inventory reports and constants and amount of coal has been mined and combusted for energy use. The amount is equivalent of coal extracted from the waste heaps in the project activity in the year		OK
B.2.7	Is the methodology to calculate project emissions appropriate and adequate?	/1/	DR	Project emissions are calculated as emissions from consumption of electricity from the grid by the project activity and emissions from consumption of diesel fuel by the project activity		OK
B.2.8	Is there any potential leakage due to the project activity?	/1/	DR	Yes, leakages of the project are due to fugitive emissions of methane in the mining activities		OK
B.2.9	Is it for all key data and parameters indicated which data sources or default values are used and how the data or the measurements are obtained (e.g. official statistics, expert judgment)?	/1/ /16/	DR CC	The parameters are mainly sourced from National Inventory report of Ukraine or from basic standard. But the National Inventory report mentioned in the PDD is not available on the provided link. It does not work. It should be clarified only, why is the carbon oxidation factor of diesel sourced from revised 1996 IPCC Guidelines and not from National inventory of 2006 version of IPCC	~~CL3~~	OK
B.2.10	Are the data sources and measurement procedures (if any) used adequate, consistent, accurate and reliable?	/1/ /16/	DR CC	Yes, the sources are commented above (and except CL3 are consistent) and the measuring procedures are consistent, accurate and reliable.	~~CL3~~	OK

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Checklist Question		Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
B.2.11	Is the monitoring frequency for the data and parameters appropriate?	/1/	DR I	Yes, it is continual measurement for electricity and accounting data and invoices for fuel consumption and mined coal.		OK
B.2.12	Has the methodology been described in an adequate and transparent manner?	/1/	DR	Yes, the methodology is described adequate and transparent in the PDD.		OK
B.3	**Applicability of methodology** *To be completed in case an approved CDM methodology is applied. Insert a row for each applicability criteria of the applied methodology (and tools)*					
B.3.1	How was it validated that project complies with the following applicability criteria: insert applicability criteria 1?	/1/	DR	NA		
B.3.2	How was it validated that project complies with the following applicability criteria: insert applicability criteria 2?	/1/	DR	NA		
B.3.3	How was it validated that project complies with the following applicability criteria: insert applicability criteria 3?	/1/	DR	NA		
B.3.4	How was it validated that project complies with the following applicability criteria: insert applicability criteria 4?	/1/	DR	NA		
B.3.5	Is the selected baseline on of the baseline(s) described in the methodology and this hence confirms the applicability of the methodology?	/1/	DR	NA		
B.4	**Project boundary**					
B.4.1	What are the project's system boundaries (components and facilities used to mitigate GHGs)? Are they clearly defined and in accordance with the methodology?	/1/	DR	The boundaries are clearly defined as project location by geographical coordinates and the emission resources, i.e.CO_2 emissions from consumed electricity of Ukrainian grid, emissions from diesel fuel used by project activity and methane fugitive emissions from amount of coal mined in the baseline scenario.		OK
B.4.2	Which GHG sources are identified for the project? Does the	/1/ /13/	DR	It is CO_2 emissions from waste heat burning as	~~CAR2~~	OK

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	Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
	identified boundary cover all possible sources linked to the project activity? Give reference to documents considered to arrive at this conclusion.		CC	main emission source for baseline and CO_2 emissions from used electricity and from fossil fuel used for the coal extraction process as project emissions. As leakage is include fugitive CH_4 emissions from mining activities, which should be included in the baseline emissions The description of project boundaries table should be justified once more and updated		
B.4.3	Does the project involve other emissions sources not foreseen by the methodologies that may question the applicability of the methodology? Do these sources contribute with more than 1% of the estimated emission reductions of the project?	/1/ /13/	DR CC	The project excluded CO_2 emissions from coal consumption displaced by project activity The condition: "the emission factor and NCV of the coal coming from proposed project be confirmed to be in the range of the one mined (baseline)" should be confirmed. By the PP information coal coming from proposed project is better quality then average. Certificates will be provided by the PP. But the NCV and EF are sourced from National inventories.	~~CL4~~	OK
B.5	**Baseline scenario determination**					
B.5.1	Which baseline scenarios have been identified? Is the list of baseline scenarios complete?	/1/	DR	The scenarios are follow: 1. Continuation of existing situation – the waste heaps are not utilized, which is without barriers 2. Direct energy production from the heat energy of burning waste heap – but the link provided in the PDD doesn't work and the evidence that is advanced technology without industrial realization is requested 3. Production of construction materials from waste heap matter – it was fond technological	~~CL5~~	OK

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Checklist Question		Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
				barrier but evidences are requested 4. Coal extraction from waste heaps without JI incentives – it has investment barriers 5. Systematic monitoring of waste heaps condition and regular fire prevention and extinguishing measures – it has investment barriers		
B.5.2	How have the other baseline scenarios been eliminated in order to determine the baseline?	/1/	DR,	The barrier analysis is used but individual scenarios barriers should be represent by evidences.	~~CL5~~	OK
B.5.3	What is the baseline scenario?	/1/	DR	The baseline scenario is continuation current situation because it is not faced any barriers nor legal requirements are established for this situation.		OK
B.5.4	Is the determination of the baseline scenario in accordance with the guidance in the methodology?	/1/ /4/	DR	Yes, the baseline determination is in accordance with the JI Guidelines .		OK
B.5.5	Has the baseline scenario been determined using conservative assumptions where possible?	/1/ /26/ /27/	DR	Yes, it has used conservative assumptions. But the baseline emissions of CO_2 rest on a survey (0.69 factor). It is not clear if this factor represents the sum of all “heaps that are or have been on fire historically” or is the average fraction of heaps on fire in a given year.	~~CL6~~	OK
B.5.6	Does the baseline scenario sufficiently take into account relevant national and/or sectoral policies, macro-economic trends and political aspirations?	/1/	DR, CC	The laws and regulations are discussed in the PDD but the arguments related to obligatory are relative old (2007). The evidence that the situation is continuation is requested.	~~CL7~~	OK
B.5.7	Is the baseline scenario determination compatible with the available data and are all literature and sources clearly referenced?	/1/	DR, CC	Except several links, which are not work, the sources and literature is clearly referenced.	~~CL5~~	OK
B.5.8	Is the baseline determination adequately documented in the	/1/	DR,	● Yes, all assumptions and data used by the	~~CL5~~	OK

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
PDD? • All assumptions and data used by the project participants are listed in the PDD and related document to be submitted for registration. The data are properly referenced. • All documentation is relevant as well as correctly quoted and interpreted. • Assumptions and data can be deemed reasonable • Relevant national and/or sectoral policies and circumstances are considered and listed in the PDD. • The methodology has been correctly applied to identify what would occurred in the absence of the proposed JI project activity		CC	project participants are listed in the PDD and related document to be submitted for registration. The data are properly referenced. • Yes, all documentation is relevant as well as correctly quoted and interpreted. • Assumptions and data can be deemed reasonable, except requested CLs above • Relevant national and/or sectoral policies and circumstances are considered and listed in the PDD but the data are from 2007 year, which is relative old information. • The methodology has been correctly applied to identify what would occurred in the absence of the proposed JI project activity except requested CLs	~~CL7~~	
B.6 Additionality Determination *The assessment of additionality will be validated with focus on whether the project itself is not a likely baseline scenario..*					
B.6.1 What is the methodology selected to demonstrate additionality?	/1/ /7/	DR	The Tool for the demonstration and assessment of additionality, version 5.2 was used.		OK
B.6.2 Is the project additionality assessed according to the methodology?	/1/ /7/	DR	Yes, the additionality is assessed in accordance with the Tool by 4-step elimination procedure.		OK
B.6.3 Are all assumptions stated in a transparent and conservative manner?	/1/	DR, CC	The legal consistency is assessed based on information from 2007 year. As the assessing and determination is provided in 2011, the confirmation of mentioned situation is requested. The reference of the legislation is requested.	~~CL7~~	OK
B.6.4 Is sufficient evidence provided to support the relevance of the arguments made?	/1/ /23/	DR, CC	Information / sources presented in the investment analysis spreadsheet are mostly addressed as from Monolith-Ukraine. Original evidences and	~~CL8~~	OK

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Checklist Question		Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
				sources for data are requested (fuel price, investment data, operational data..) Clarification, how is possible the same investment costs for all scenarios is requested.		
C Duration of the Project/ Crediting Period *It is assessed whether the temporary boundaries of the project are clearly defined.*						
C.1.1	Are the project's starting date and operational lifetime clearly defined and evidenced?	/1/ /28/	DR, CC	The starting date of the project was chosen as 1 January 2010 but it is not clear why and which evidence confirms this status. Because in section A.2 of the PDD is written that construction works started on 15 January 2009. The life time is estimated to last until the end of 2024, i.e.15 years	~~CAR3~~	OK
C.1.2	Is the start of the crediting period clearly defined and reasonable?	/1/ /36/	DR	The crediting period is starting 1 January 2010, which is reasonable, if the start of the operation was realized. The evidence is requested.	~~CL9~~	OK
D Monitoring Methodology *It is assessed whether the project applies an appropriate baseline methodology.*						
D.1.1	Is the monitoring plan documented according to the chosen methodology and in a complete and transparent manner?	/1/	DR	The project owner chose JI specific approach for monitoring plan setting with complete and transparent manner.		OK
D.1.2	Will all monitored data required for verification and issuance be kept for two years after the last issuance of ERUs for this project activity?	/1/ /29/ /18/	DR	The archiving period is not mentioned in the PDD.	~~CAR4~~	OK

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Checklist Question		Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
D.2 Monitoring of Project Emissions *It is established whether the monitoring plan provides for reliable and complete project emission data over time.*						
D.2.1	Does the monitoring plan provide for the collection and archiving of all relevant data necessary for estimation or measuring the greenhouse gas emissions within the project boundary during the crediting period?	/1/ /18/	DR, CC	The monitoring plan does not cover procedures related to archiving data. The responsibility for individual parameters monitoring are established.	~~CAR4~~	OK
D.2.2	Are the choices of project GHG indicators reasonable and conservative?	/1/ /24/ /25/	DR, CC	Yes, CO_2 is GHG indicator for the project emission. All data for this indicator are on a project specific basis. But it should be confirm that the coal derived from project has same identical characteristics (EF and NCV) of coal mined, otherwise we need to consider a marginal increase in emissions as project emission	~~CL10~~	OK
D.2.3	Is the measurement method clearly stated for each GHG value to be monitored and deemed appropriate?	/1/	DR	Yes. The measurement method stated clearly in the PDD and they are appropriate.		OK
D.2.4	Is the measurement equipment described and deemed appropriate?	/1/ /18/ /30/ /31/ /32/ /33/	DR CC	Yes, they are used only two type of measurement equipment – electricity meter and metering of diesel fuel depends to commercial documents (type of measurement) provided by suppliers. But more details about the equipment should be included in the PDD (type, accuracy etc.) The confirmation that no contracted equipment employed for moving of heaps is involved is necessary.	~~CAR5~~ ~~CL11~~	OK
D.2.5	Is the measurement accuracy addressed and deemed appropriate? Are procedures in place on how to deal with erroneous measurements?	/1/ /18/ /31/ /32/	DR CC	The accuracy is not deemed directly but all measurement devices are part of commercial activities and the measurement devices as well as their calibration is in guidance of the Host Party.	~~CAR5~~	OK

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Checklist Question		Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
		/33/		More details about the equipment should be included in the PDD (type, accuracy etc.) On Site was confirmed: • El. Meters have accuracy 0.5s, calibration certificates are valid 6 years • scales accuracy class – medium -+20, -+ 40 depending on weight – see certificate (valid 1 year) and passport. • Weighing is on the daily base – daily summary of all cars weighing during the day. Signed by the scales operator and the to operation director for next utilization • Daily evidence of separated coal on the yard Fuel (gasoline) is evidenced by invoices in the headquarters, on site only very roughly tank level identification by stick, every car has its car book		
D.2.6	Is the measurement interval identified and deemed appropriate?	/1/	DR	Yes, it is continuously measurement for electricity and delivery amount for diesel fuel		OK
D.2.7	Is the registration, monitoring, measurement and reporting procedure defined?	/1/ /18/ /30/ /31/ /32/ /33/	DR	These procedures should be included in the Monitoring Manual. The Manual should be provided to DNV.	~~CL12~~	OK
D.2.8	Are procedures identified for maintenance of monitoring equipment and installations? Are the calibration intervals being observed?	/1/ /18/ /30/ /31/ /32/ /33/	DR	No, information about maintenance and installation is not included in the PDD but it should be included in the Monitoring Manual. The information about calibration intervals is included.	~~CL12~~	OK

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Checklist Question		Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
D.2.9	Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	/1/ /18/	DR	The same as previous procedures, it should be in the Monitoring Manual.	~~CL12~~	OK
D.3	**Monitoring of Baseline Emissions** *It is established whether the monitoring plan provides for reliable and complete baseline emission data over time.*					
D.3.1	Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining baseline emissions during the crediting period?	/1/ /18/	DR	The monitoring plan does not cover procedures related to archiving data. The responsibility for individual parameters monitoring are established.	~~CAR4~~	OK
D.3.2	Are the choices of baseline GHG indicators reasonable and conservative?	/1/ /13/ /24/ /25/	DR, CC	CO_2 is GHG indicator for the project emission. All data for this indicator are on a project specific basis. But emission from mining should be included. It should be confirm that the coal derived from project has same identical characteristics (EF and NCV) of coal mined, otherwise we need to consider a marginal increase in emissions as project emission	~~CAR2~~ ~~CL10~~	OK
D.3.3	Is the measurement method clearly stated for each baseline indicator to be monitored and also deemed appropriate?	/1/ /13/	DR	The measurement method stated clearly in the PDD and they are appropriate. But emission from mining should be included.	~~CAR2~~	OK
D.3.4	Is the measurement equipment described and deemed appropriate?	/1/	DR	They are used one type of measurement equipment only – the automobile scales. But emission from mining should be included.	~~CAR2~~	OK
D.3.5	Is the measurement accuracy addressed and deemed appropriate? Are procedures in place on how to deal with erroneous measurements?	/1/ /18/ /31/ /32/ /33/	DR	The accuracy is not deemed directly but all measurement devices are part of commercial activities and the measurement devices as well as their calibration is in guidance of the Host Party. More details about the equipment should be	~~CAR5~~	OK

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				included in the PDD (type, accuracy etc.) On Site was confirmed: • scales accuracy class – medium -+20, -+ 40 depending on weight – see certificate (valid 1 year) and passport. • Weighing is on the daily base – daily summary of all cars weighing during the day. Sined by the scales operator and the to operation director for next utilization		
D.3.6	Is the measurement interval for baseline data identified and deemed appropriate?	/1/	DR	Yes, it is delivery amount of mined coal.		OK
D.3.7	Is the registration, monitoring, measurement and reporting procedure defined?	/1/ /18/	DR	These procedures should be included in the Monitoring Manual. The Manual should be provided to DNV.	~~CL12~~	OK
D.3.8	Are procedures identified for maintenance of monitoring equipment and installations? Are the calibration intervals being observed?	/1/ /18/ /30/ /31/ /32/ /33/	DR	No, information about maintenance and installation is not included in the PDD but it should be included in the Monitoring Manual. The information about calibration intervals is included. Calbtation intervals. Emeters 6 yrs, scales 1 year	~~CL12~~	OK
D.3.9	Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	/1/ /18/	DR	The same as previous procedures, it should be in the Monitoring Manual.	~~CL12~~	OK
D.4	**Monitoring of Leakage** *It is assessed whether the monitoring plan provides for reliable and complete leakage data over time.*					
D.4.1	Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining	/1/ /18/	DR	The monitoring plan does not cover procedures related to archiving data. The responsibility for	~~CAR4~~	OK

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	Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
	leakage?			individual parameters monitoring are established.		
D.4.2	Are the choices of project leakage indicators reasonable and conservative?	/1/ /13/	DR	The indicators are fugitive CH_4 emissions due to mining activities, which should be included in the baseline emissions. National inventory record will be provided	~~CAR2~~ ~~CL3~~	
D.4.3	Is the measurement method clearly stated for each leakage value to be monitored and deemed appropriate?	/1/	DR	Yes it is amount of mined coal, which is extracted from the waste heaps in the project activity, which is used for calculation of the emissions of fugitive CH_4		OK
D.5	**Project Management Planning** *It is checked that project implementation is properly prepared for and that critical arrangements are addressed.*					
D.5.1	Is the authority and responsibility of overall project management clearly described?	/1/ /18/	DR CC	The brief responsibility for collecting and cross-checking of the data is set in the PDD. The details should be included in the Monitoring manual.	~~CL12~~	OK
D.5.2	Are procedures identified for training of monitoring personnel?	/1/ /18/	DR	No, it is not included in the PDD.	~~CAR6~~	OK
D.5.3	Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?	/1/ /18/	DR CC	No, it is not included in the PDD.	~~CAR6~~	OK
D.5.4	Are procedures identified for review of reported results/data?	/1/	DR CC	Yes, the data will be crosschecked with commercial records and invoices.		OK
D.5.5	Are procedures identified for corrective actions in order to provide for more accurate future monitoring and reporting?	/1/ /18/	DR	No, it is not included in the PDD.	~~CAR6~~	OK

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Checklist Question		Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
E Calculation of GHG Emissions by Source *It is assessed whether all material GHG emission sources are addressed and how sensitivities and data uncertainties have been addressed to arrive at conservative estimates of projected emission reductions.*						
E.1 Calculation of GHG Emission Reductions – Project emissions *It is assessed whether the project emissions are stated according to the methodology and whether the argumentation for the choice of default factors and values – where applicable – is justified.*						
E.1.1	Are the calculations documented according to the chosen methodology and in a complete and transparent manner?	/1/	DR	The specific JI approach was used for the calculation. The formulae described in the D.1.1.2. of the PDD are reasonable and fulfil requirements of this approach.		OK
E.1.2	Have conservative assumptions been used when calculating the project emissions?	/1/ /13/ /24/ /25/	DR, CC	It is in line with the JI specific approach but some issue has to be justified.	~~CAR2~~ ~~CL6~~ ~~CL10~~	OK
E.1.3	Are uncertainties in the project emission estimates properly addressed?	/1/ /18/ /31/ /32/ /33/	DR CC	The accuracy of the measurement devices is not directly stated in the PDD but they are established as basis for commercial purposes, which seem as sufficient.	~~CAR5~~	OK

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
E.2 Calculation of GHG Emission Reductions – Baseline emissions *It is assessed whether the baseline emissions are stated according to the methodology and whether the argumentation for the choice of default factors and values – where applicable – is justified.*					
E.2.1 Are the calculations documented according to the chosen methodology and in a complete and transparent manner?	/1/	DR	The specific JI approach was used for the calculation. The formulae described in the D.1.1.4. of the PDD are reasonable and fulfil requirements of this approach.		OK
E.2.2 Have conservative assumptions been used when calculating the baseline emissions?	/1/ /13/ /24/ /25/	DR, CC	It is in line with the JI specific approach but some issue has to be justified	~~CAR2~~ ~~CL6~~ ~~CL10~~	OK
E.2.3 Are uncertainties in the baseline emission estimates properly addressed?	/1/ /18/ /31/ /32/ /33/	DR CC	The accuracy of the measurement device is not directly stated in the PDD but it is established as basis for commercial purposes, which seem as sufficient.	~~CAR5~~	OK
E.3 Calculation of GHG Emission Reductions – Leakage *It is assessed whether leakage emissions are stated according to the methodology and whether the argumentation for the choice of default factors and values – where applicable – is justified.*					
E.3.1 Are the leakage calculations documented according to the chosen methodology and in a complete and transparent manner?	/1/	DR	The specific JI approach was used for the calculation. The formulae described in the D.1.3.2. of the PDD are reasonable and fulfil requirements of this approach.		OK
E.3.2 Have conservative assumptions been used when calculating the leakage emissions?	/1/ /13/ /24/	DR CC	It is in line with the JI specific approach but some issue has to be justified.	~~CAR2~~ ~~CL6~~ ~~CL10~~	OK

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
	/25/				
E.3.3 Are uncertainties in the leakage emission estimates properly addressed?	/1/ /18/ /31/ /32/ /33/	DR	Yes. The accuracy of the measurement device is not directly stated in the PDD but it is established as basis for commercial purposes, which seem as sufficient.	~~CAR5~~	OK
E.4 Emission Reductions *The emission reductions shall be real, measurable and give long-term benefits related to the mitigation of climate change.*					
E.4.1 Are the emission reductions real, measurable and give long-term benefits related to the mitigation of climate change.	/1/	DR	The emission reductions are real, measurable and give long-term benefits related to the mitigation of climate change. The implemented monitoring methodology and measurement system allow for calculation of real project specific emissions reduction.		OK
F Environmental Impacts *Documentation on the analysis of the environmental impacts will be assessed, and if deemed significant, an EIA should be provided to the AIE.*					
F.1.1 Has an analysis of the environmental impacts of the project activity been sufficiently described?	/1/ /5/	DR	The EIA was provided by PJSC "LUHANSKGIPROSHAKHT" in 2008.		OK
F.1.2 Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?	/1/ /5/ /19/	DR CC	Yes. EIA is requested in accordance with Ukrainian legislation. It stated in the PDD that the EIA was reviewed by competent authority of Ukraine but it was not provided any evidence for it.	~~CL13~~	OK
F.1.3 Will the project create any adverse environmental effects?	/1/ /5/ /19/	DR	Yes, as main environmental impact is dust impact to air in terms of the project activity (handling with and transport of waste heaps) but this impact		OK

MoV = Means of Verification, DR= Document Review, I= Interview, CC= Cross-Checking

Checklist Question		Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
				is limited. The next limited impact is noise, but the project is located outside from the residential area and the transport activity will be in compliance with local legislation. Minor impact of the project is on water, where is used closed cycle for water treatment. The positive impact will on land using because the project utilizes the waste heaps, which are demanding on storage area.		
F.1.4	Are transboundary environmental impacts considered in the analysis?	/1/ /5/ /19/	DR CC	No transboundary effects were observed.		OK
F.1.5	Have identified environmental impacts been addressed in the project design?	/1/ /5/ /19/ /34/ /35/	DR CC	The evidence is requested.	~~CL14~~	OK
F.1.6	Does the project comply with environmental legislation in the host country?	/1/ /5/ /19/ /34/ /35/	DR CC	It depends on evidencing	~~CL13~~ ~~CL14~~	OK
G Stakeholder Comments *If required by the host country, the AIE should ensure that stakeholder comments have been invited with appropriate media and that due account has been taken of any comments received.*						
G.1.1	Have relevant stakeholders been consulted?	/1/ /21/	DR CC	Evidence will be sent, No comments	~~CL15~~	OK
G.1.2	Have appropriate media been used to invite comments by	/1/	DR	Evidence will be sent, No comments	~~CL15~~	OK

MoV = Means of Verification, DR= Document Review, I= Interview, CC= Cross-Checking

	Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
	local stakeholders?	/21/	CC			
G.1.3	If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	/1/	DR	As part of the EIA the stakeholders should be informed through the mass media about the proposed project as	~~CL15~~	OK
G.1.4	Is a summary of the stakeholder comments received provided?	/1/	DR	Evidence will be sent, No comments	~~CL15~~	OK
G.1.5	Has due account been taken of any stakeholder comments received?	/1/	DR	Evidence will be sent, No comments	~~CL15~~	OK

Table 3 Resolution of Corrective Action and Clarification Requests

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Determination conclusion
CAR1 The LoAs were not provided yet.	A.2.2	According to the procedures of Joint Implementation project approval in Ukraine, namely the Decree #206 of the Cabinet of Ministers of Ukraine http://zakon1.rada.gov.ua/cgi-bin/laws/main.cgi?nreg=206-2006-%EF, LoA can only be obtained after the PDD and Determination Report have been submitted to the Ukrainian authorities. PoA participants will apply for the LoA after the Determination Report will be issued. National Environmental Investments Agency of Ukraine has issued a Letter of Endorsement for the project #2151/23/7 dated 14/12/2010 that is attached here as supporting document SD17_LoE_Monolith.	LoA can only be obtained after the PDD and Determination Report have been submitted to the Ukrainian authorities. PoA participants will apply for the LoA after the Determination Report will be issued. Letter of Endorsement for this project was issued by National Environmental Investments Agency of Ukraine, dated 14 December2010 /22/ --- The DNAs of both countries issued a Letter of Approval (LoA) authorising MONOLITH-UKRAINE LTD and Global Carbon BV as project participants. The DNA of Ukraine issued the LoA on 26 August 2011 under the No: 2276/23/7/ /59/. The DNA of the Netherlands issued the LoA on 4 July 2011 under the No: 2011JI24 /60/. Both LoAs were provided to DNV. They were checked by DNV and found appropriate. **CAR1 has been closed**
CAR2 As leakage is include fugitive CH_4 emissions from mining activities, which should be included in the baseline emissions (The value of 25.67 is really in the high end and should be confirmed) The description of project boundaries table should	B.4.2 D.3.2 D.3.3 D.3.4 D.4.2	According to the Para 17 of the "Guidance on Criteria for Baseline Setting and Monitoring" Version 02 leakage is the net change is the net change of anthropogenic emissions by sources and/or removals by sinks of GHGs which occurs outside the	Fugitive CH_4 emissions from mining activities have been explained, evidenced and confirmed by PP. See the left column. For the value of Emission factor for fugitive methane emissions from coal mining (25,67 m^3/t) the data provided in the National

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Determination conclusion
be justified once more and updated	E.1.2 E.2.2 E.3.2	project boundary, and that can be measured and is directly attributable to the JI project. First of all we would like to re-iterate our reference to the approved consolidated methodology ACM0009 "Consolidated baseline and monitoring methodology for fuel switching from coal or petroleum fuel to natural gas" Version 3.2. In this methodology leakages associated with the fugitive methane emissions are considered measureable and directly attributable to the project activity. This leakage is measurable through the same procedure as used in 2006 IPCC Guidelines (See Volume 2, Chapter 4, Page 4-11) and also used in ACM009 (Page 8). Activity data (in our case amount of coal extracted from the waste heap which is monitored directly) is multiplied by the emission factor (which is sourced from the relevant national study – National Inventory Report of Ukraine under the Kyoto Protocol) and any conversion coefficients. It is important to mention that IPCC and relevant National Inventories take into account raw amount of coal that is being mined in these calculations whereas in the PDD coal extracted from the waste heaps is high quality coal concentrate. Therefore, approach taken in the PDD is conservative as in coal mining more raw coal should be mined causing more fugitive methane emissions to produce equivalent amount of high quality coal concentrate.	Inventory Report of Ukraine 1990-2008, p.74 are used /13/. This document is the official GHG Inventory prepared by the Host Country as part of the reporting requirements of the Kyoto Protocol and is available on the UNFCCC pages. Customer discussed this problem with the Focal Point. He has used its approach used in the PDD. **CAR2 has been closed**

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Determination conclusion
		This leakage is directly attributable to the JI project activity according to the following assumption: the coal produced by the project activity from the waste heap will substitute the coal produced by underground mines of the region in the baseline scenario. This assumption is explained by the following logic: Energy coal market is demand driven as it is not feasible to produce coal without demand for it. Coal is a commodity that can be freely transported to the source of demand and coal of identical quality can substitute some other coal easily. The project activity cannot influence demand for coal on the market and supplies coal extracted from the waste heaps. In the baseline scenario demand for coal will stay the same and will be met by the traditional source – underground mines of the region. Therefore, the coal supplied by the project in the project scenario will have to substitute the coal mined in the baseline scenario. It is also important to mention that Ukraine is a net exporter of energy coal so the coal produced by the project activity will substitute domestically mined coal (in 2010 energy coal production was 40.3 Mt, import was 3 Mt and export was 6.1 Mt - http://www.uaenergy.com.ua/c225758200614cc9/0/d465824d78686a04c225787000542600). According to this approach equivalent product supplied by the project	

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Determination conclusion
		activity (with lower associated specific green-house gas emissions) will substitute the baseline product (with higher associated specific green-house gas emissions). This methodological approach is very common and is applied in all renewable energy projects (substitution of grid electricity with renewable-source electricity), projects in cement sector (e.g. JI0144 Slag usage and switch from wet to semi-dry process at Volyn-Cement, Ukraine), projects in metallurgy sector (e.g. UA1000181 Implementation of Arc Furnace Steelmaking Plant "Electrostal" at Kurakhovo, Donetsk Region) and others. The criteria for definition of the project boundary is provided in the Para 14 of the same document. In the case of a JI project aimed at reducing emissions, the project boundary shall: (a) Encompass all anthropogenic emissions by sources of GHGs which are: (i) Under the control of the project participants; (ii) Reasonably attributable to the project. Therefore, fugitive CH_4 emissions from mining activities cannot be included into the project boundary as they are not “Under the control of the project participants”. PDD correctly lists Monolith-Ukraine Ltd. as a project participant hosting this project activity. Monolith-Ukraine Ltd. is performing the dismantling of the waste heaps, processing waste heap matter with	

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Determination conclusion
		the dense medium cyclone technology. Monolith-Ukraine Ltd. does not operate or own any coal mines, therefore, any changes in fugitive methane emissions from mining are not under the direct control of project participants. For this reason those leakages were included into the 'leakages' category and not considered the baseline emissions. Also, for example, approved CDM methodology ACM0009 "Consolidated baseline and monitoring methodology for fuel switching from coal or petroleum fuel to natural gas" Version 3.2 treats the same emission source as leakage – Fugitive methane emissions on Page 8 out of 16. It is also worth mentioning that leakage by definition is a "net change of anthropogenic emissions" and can be negative or positive depending on the nature of such change. It is also important to mention that including this particular source into baseline emissions or into leakages does not impact estimated emission reductions. For the value of Emission factor for fugitive methane emissions from coal mining (25,67 m^3/t) the data provided in the *National Inventory Report of Ukraine 1990-2008*, p.74 are used. This document is the official GHG Inventory prepared by the Host Country as part of the reporting requirements of the Kyoto Protocol. It is available at	

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Determination conclusion
		http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/5270.php. The description of this particular emission factor states that it is the weighted average emission factor for the methane emissions from coal mining sourced from the study - Triplett J., Filippov A., Paisarenko A. Inventory of methane emissions from coal mines in Ukraine: 1990-2001. Partnership for Energy and Environmental Reform, 2002. This study is available at: www.epa.gov/cmop/docs/inventory2002.pdf 09/06/2011: As stated in the previous response, 2006 IPCC Guidelines method is only used for measurement of the identified source of leakage. Please, refer to the Volume 2, Chapter 4, Page 4-11 of the 2006 IPCC Guidelines for the description of the calculation formula used to quantify leakage in the project. The method described there is the multiplication of emission factor for fugitive methane emissions due to coal mining with activity data of raw amount of coal that is mined. The same approach is used in the project. As for the analogy with the electricity from the grid versus renewable electricity: the source of the leakage here are the fugitive methane emissions due to coal mining.	

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Determination conclusion
		These emissions are specific to the coal that is being mined. Coal produced by the project activity is not mined but extracted from the waste heap through the advanced beneficiation process. Therefore, coal produced by the project activity substitutes the coal would have been otherwise mined in the baseline. Coal that is mined in the baseline has fugitive methane emissions associated with it and the coal produced by the project activity does not have such emissions associated with it. The explanation above has been added to the PDD version 2.3. Section B.1. for transparency.	
CAR3 The starting date of the project was chosen as 1 January 2010 but it is not clear why and which evidence confirms this status. Because in section A.2 of the PDD is written that construction works started on 15 January 2009.	C.1.1	According to the "Glossary of Joint Implementation Terms" Version 02 the starting date of the project is date on which the implementation or construction or real action of the project begins. The starting date of the project therefore has been changed to the 15th of January 2009 in the PDD ver.2.1. This is confirmed by the supporting document which is the Building permit #18/2009 issued by the State Architectural and Construction Control of the Luhansk Region and is attached here as SD8_StartDateConstruction. The crediting period starting date is 1st of January 2010 and corresponds with the start of operation. This is confirmed by the supporting document which is the Permission to Conduct Operations #4018.09.30-10.10.1	The starting date of the project is date on which the implementation or construction or real action of the project begins. The starting date of the project therefore has been changed to the 15th of January 2009 in the PDD ver.2.1. This is confirmed by the supporting document which is the Building permit #18/2009 issued by the State Architectural and Construction Control of the Luhansk Region /28/. The crediting period starting date is 1s January 2010 and corresponds with the start of operation. This is confirmed with Permission to Conduct Operations #4018.09.30-10.10.1 issued by Derzhgirpromnaglyad (State Industrial Mining Supervision Committee) /36/

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Determination conclusion
		issued by Derzhgirpromnaglyad (State Industrial Mining Supervision Committee) and is attached here as SD9_StartDateOperation.	**CAR3 has been closed**
CAR4 The archiving period is not mentioned in the PDD.	D.1.2 D.2.1 D.3.1 D.4.1	The following information has been added to the Section D.1. of the PDD ver.2.1: "**Archiving, data storage and record handling procedure** Documents and reports on the data that are monitored will be archived and stored by the project participants. The following documents will be stored: primary documents for the accounting of monitored parameters in paper form; intermediate reports, orders and other monitoring documents in paper and electronic form; documents on measurement devices in paper and electronic form. These documents and other data monitored and required for determination and verification, as well as any other data that are relevant to the operation of the project will be kept for at least two years after the last transfer of ERUs." These statements are also evidenced by the supporting document SD11_MonitoringManual which is the manual for monitoring procedure of the project. Archiving procedure is described in the chapter "VII" of the document. Also, the supporting document SD10_ArchivingOrder states the archiving period for monitoring data.	Archiving period, data storage and record handling procedures have been added into the PDD ver.2.1, Section D.1. Data will be kept for at least two years after the last transfer of ERUs /29//18/. **CAR4 has been closed**

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Determination conclusion
CAR5 More details about the equipment should be included in the PDD (type, accuracy etc., for electricity: type and class of meter - it is already installed; for the fuel: crosscheck with monthly mileage records for mobile equipment)	D.2.4 D.2.5 D.3.5 E.1.3 E.2.3	The following information has been added to the Section D.1. of the PDD ver.2.1 : "**Setup of measurement installation** The measurement method selected for the project is based on measuring some monitored parameters – coal produced and electricity consumed – and relying on accounting documents and reports for other parameters (fuel used). The measurement setup will be based on the following meters: for electricity consumed - the "EPQS" electronic meter produced by Elgama-Elektronika which is a multifunction device for measurement of electric energy; for coal produced – electronic automobile scales DVA-80 produced by "Diskret" "EPQS" electricity meter has the following accuracy class: 0.5s This type of meter requires calibration every 6 years in Ukraine. Automobile scales have the "average" accuracy class. This type of scales requires calibration every year in Ukraine. For the measurement of fuel consumption information from accounting department will be used: receipts for the fuel purchased; reports on the fuel used (with crosschecks for mileage of equipment) and accounting documents for fuel usage." These statements are evidenced by the supporting documents such as passport and certificate for the electricity meter – SD13_ElectricityMeter; passport for the automobile scales –	More details concerning the measurement equipment as well as measurement methods have been included in the PDD ver. 02 for details see the left column and /12//31//32//33/ **CAR5 has been closed**

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Determination conclusion
		SD14_AutomobileScales and sample of documents used for accounting of fuel usage – SD15_FuelUsage.	
CAR6 The following procedures should be identified: • for training of monitoring personnel • for emergency preparedness for cases where emergencies can cause unintended emissions • for corrective actions in order to provide for more accurate future monitoring and reporting	D.5.2 D.5.3 D.5.5	The following information has been added to the Section D.1. of the PDD ver.2.1 : "**Training of monitoring personnel** The project will utilize technology that requires skills and knowledge in heavy machinery operation, coal washing technology operation, electric equipment operation etc. This kind of skills and knowledge is available locally through the system of vocational training and education. This system is state-supervised in Ukraine. Professionals who graduate from vocational schools receive a standard certificate in the field of their professional study. Only workers with proper training can be allowed to operate industrial equipment like. Management of the project host will ensure that personnel of the project have received proper training and are eligible to work with the prescribed equipment. Training on safety issues is mandatory and must be provided to all personnel of the project as required by local regulations. Procedure for safety trainings includes the scope of the trainings, training intervals, forms of training, knowledge checks etc. The project host management will maintain records for such trainings and periodic knowledge check-ups.	All the required procedures have been identified in the Monitoring manual /18/ and added into the PDD, vers. 02, Section D.1. For details see the left column. **CAR6 has been closed**

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Determination conclusion
		Activities that are directly related to the monitoring do not require specific training other than provided by the professional education. However, monitoring personnel will receive training on monitoring procedures and requirements. Personnel of the project host management will receive necessary training and consultations on Kyoto Protocol, JI projects and monitoring from the project participant – Global Carbon BV. **Procedures identified for corrective actions in order to provide for more accurate future monitoring and reporting** In cases if any errors, fraud or inconsistencies will be identified during the monitoring process special commission will appointed by project host management that will conduct a review of such case and issue an order that must also include provisions for necessary corrective actions to be implemented that will ensure such situations are avoided in future. The project host management will also establish a communication channel that will make it possible to submit suggestions, improvement proposals and project ideas for more accurate future monitoring for every person involved in the monitoring activities. Such communications will be delivered to the project host management who is required to review these	

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Determination conclusion
		communications and in case it is found appropriate implement necessary corrective actions and improvements. Project participant – Global Carbon BV – will conduct periodic review of the monitoring plan and procedures and if necessary propose improvements to the project participants. **Emergency preparedness for cases where emergencies can cause unintended emissions** The project operation does not foresee any factors or emergencies that can cause unintended GHG emissions. Safe operation of equipment and personnel is ensured by systematic safety training. Procedures for dealing with general emergencies such as fire, major malfunction etc. are developed as part of the mandatory business regulations and are in accordance with local requirements." This is also evidenced by the supporting document SD11_MonitoringManual that describes procedures for training of monitoring personnel, procedures identified for corrective actions in order to provide for more accurate future monitoring and reporting, archiving and data handling procedures etc.	
CL1 The coordinates are follow: 39°28'24.46'' E and 48°7'19.2'' N but different numbers are presented on the picture attached in this section.	A.1.1	The picture has been changed in Section A.4.1.4. of the PDD ver.2.1	The picture has been revised in Section A.4.1.4. of the PDD ver.2.1 **CL1 has been closed**

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Determination conclusion
CL2 The evidence that the technology is first of kind is requested. It should be justified if it is first of kind or one of first application in the PDD. (PDD states that this project is first of its kind at page 13, but it also states at page 6 that this one of first application)	A.3.1 A.3.2 B.2.3	Inconsistency has been resolved in the PDD ver. 2.0. The project is one of the first applications of this technology in Ukraine as demonstrated by the map of installations http://www.parnaby.co.uk/worldwide-installations.html The projects at this link represent worldwide applications of the technologies from Parnaby Cyclones. These are not JI projects and are not presented as such. In Ukraine there are only two applications of such technology – one being Monolith-Ukraine Ltd. which uses coal washing process for processing matter of the waste heaps. The other project is not applied to waste heaps but is a closed circuit effluent plant used for dewatering of fine coal slurry. Information about project technology and its' applications as well as peculiarities of its' application in Ukraine has been provided in the PDD in accordance with the Guidelines for users of the JI PDD form (version 04).The following information has been added to the PDD ver. 2.2. for transparency: "The map of the worldwide installations of Parnaby Cyclones lists two projects in Ukraine – one being the Monolith-Ukraine Ltd. with dense medium cyclone plant with closed circuit effluent system developed as JI project. The other project from Ukraine being closed circuit effluent plant for fine coal slurry dewatering is not developed as JI project	The text of PDD has been revised and referenced. In Ukraine there is only one project similar project we are here assessing up against the project activity to the project activity described as. Closed Circuit Effluent Plant (Thickener, Buffer Tank and Belt Press Filter). Application: Dewatering Fine Coal Slurry. In comparison with the project activity (Monolith project) published as the Cyclone and Effluent Plant - Dense Medium Cyclone Plant with Closed Circuit Effluent System. Application: Washing Anthracite Colliery Waste The Monolith-Ukraine Ltd. with dense medium cyclone plant with closed circuit effluent system has been developed as JI project. The second similar project from Ukraine (not owned or developed by Monolith-Ukraine) being closed circuit effluent plant for fine coal slurry dewatering is not developed as JI project and the different technology has been applied for a different purpose." However, description of this second project clearly shows that this is a different technology applied for a different purpose.

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Determination conclusion
		and is a different technology.“ 09/06/2011: As stated in the PDD Section A.4.2 version 2.3. “The map of the worldwide installations of Parnaby Cyclones lists two projects in Ukraine – one being the Monolith-Ukraine Ltd. with dense medium cyclone plant with closed circuit effluent system developed as JI project. The other project from Ukraine (not owned or developed by Monolith-Ukraine) being closed circuit effluent plant for fine coal slurry dewatering is not developed as JI project and is a different technology applied for a different purpose.” Project participants are not affiliated with Parnaby Cyclones International and cannot provide information on who is the owner of the second installation in Ukraine that was mentioned in the PDD and presented at the Parnaby’s website. However, description of this second project clearly shows that this is a different technology applied for a different purpose.	**CL2 has been closed.**
CL3 But the National Inventory report mentioned in the PDD is not available on the provided link. It does not work. It should be clarified only, why is the carbon oxidation factor of diesel sourced from revised 1996 IPCC Guidelines and not from National inventory of 2006 version of IPCC.	B.2.9 B.2.10 D.4.2	The link to the mentioned National Inventory Report has been checked and confirmed to be valid and operational : http://unfccc.int/files/national_reports/annex_i_ghg_inventories/national_inventories_submissions/application/zip/ukr-2010-nir-22may.zip In any case, the link has been replaced in the PDD ver 2.0 with the	The links to the mentioned National Inventory Report have been referenced, checked and confirmed to be valid and operational. The carbon oxidation factor for diesel fuel is sourced from Revised 1996 IPCC Guidelines /16/and not from National Inventory Report (NIR) because the NIR is

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Determination conclusion
		following link: http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/5270.php. National Inventory Reports are available through the web interface of the UNFCCC. The carbon oxidation factor for diesel fuel is sourced from Revised 1996 IPCC Guidelines and not from National Inventory Report (NIR) because the NIR is prepared on the basis of Revised 1996 IPCC Guidelines and country-specific oxidation factors are available only for coal in the NIR. All other oxidation factors have to be taken from the Revised 1996 IPCC Guidelines according to the NIR (*National Inventory Report of Ukraine 1990-2008*, p. 265).	prepared on the basis of Revised 1996 IPCC Guidelines and country-specific oxidation factors are available only for coal in the NIR. **CL3 has been closed**
CL4 The condition: "the emission factor and NCV of the coal coming from proposed project be confirmed to be in the range of the one mined (baseline)" should be confirmed and evidenced.	B.4.3	The coal that is produced by the project activity has the same or better characteristics than the coal that is produced by the underground mines of the region. The quality of the coal that is produced by the project has been verified by the third party laboratories. Evidences of these tests are provided as supporting document SD6_CoalQuality. These test certificates clearly show that ash, sulphur and NCV of the produced coal is better than the typical characteristics of the mined coal of the region as presented in the supporting document SD7_TypicalCoalQuality. Also, according to the reference book - Steam	It was confirmed and evidenced that the coal produced by the project is on average better than the coal produced by underground mines of the region /24//25/ **CL4 has been closed**

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Determination conclusion
		Plant Operation (2005). 8th edition, Everett B. Woodruff, Herbert B. Lammers, Thomas F. Lammers (coauthors), McGraw-Hill Professional, ISBN 0-07-141846-6, Page 200, the coal produced by the project can be classified as Subanthracite or Anthracite. Therefore, coal produced by the project is on average better than the coal produced by underground mines of the region.	
CL5 Evidences for individual barriers for scenarios are requested. Link stated in the PDD in this section does not work.	B.5.1 B.5.2 B.5.7 B.5.8	The links provided in section B.1. have been updated, tested and found operational. Additional references have been provided in the Section B.1 . of the PDD ver. 2.0.	Links have been updated, additional references have been added into the PDD ver. 2.0, Section B.1. They have been under operation. /38//39//40//41/. These evidences were verified, they are suitable and relevant for this purpose and the links have been under operation. **CL5 has been closed**
CL6 The baseline emissions of CO_2 rest on a survey (0.69 factor). It is not clear if this factor represents the sum of all "heaps that are or have been on fire historically" or is the average fraction of heaps on fire in a given year. The evidence "Scientific Research Institute "Respirator": Analysis on the fire risk of Luhansk Region's waste heaps, 2010" should be provided.	B.5.5 E.1.2 E.2.2 E.3.2	The required study produced by the specialised research institute Respirator is provided as supporting document SD19_RespiratorStudy. This study presents survey of the waste heaps of the Luhansk region of Ukraine and provides an overview of the quantity of the waste heaps that are burning, have been burning and not subject to burning. Therefore, the mentioned factor of 69,99% in the study (reduced to 69% in the PDD for conservativeness) represents the ratio of waste heaps of the region that are capable of self-heating and burning. This factor is defined on the basis of the survey of all the waste heaps in the area that	Required study (issued by the specialised research institute Respirator) on the survey of the waste heaps of the Luhansk region of Ukraine has been provided by the PP and it confirmed this factor as the ratio of waste heaps of the region that are capable of self-heating and burning /26/. Results of this analysis show that these particular waste heaps are at risk of self-heating and burning. This is evidenced in the supporting document of Respirator institute on the self burning assessment /27/. **CL6 has been closed**

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Determination conclusion
		provides a ratio of waste heaps that are or have been burning at any point in time to all existing waste heaps. This number is taken from the study that has been delivered to the Determination Team as RespiratorStudy /15/. As stated in the supporting document once the waste heap has overheated and passed to the burning stage the process is usually continued until all the combustible matter has burned. It is important to mention that particular waste heaps processedd by Monolith-Ukraine have been analyzed by specialised research institute Respirator on the self-heating and burning risk. Results of this analysis show that these particular waste heaps are at risk of self-heating and burning. This is evidenced in the supporting document SD20_SelfBurningAssessment. Therefore for this particular waste heaps the amount of coal that will burn out can be taken as 100%. For conservative reasons this number has been reduced by the before-mentioned ratio of 0,69. By processing waste-heaps and removing the coal from the heap mass this GHG emission source is removed completely.	
CL7 The laws and regulations are discussed in the PDD but the arguments related to obligatory are relative old (2007). The evidence (reference) of the legislation is requested as well as confirmation	B.5.6 B.5.8 B.6.3	The references and evidences have been updated in the section B.2. of the PDD ver.2.1. Confirmation that the situation continues is provided as well as references to the relevant legislation. On legislation in	The references and evidences have been updated in the section B.2. of the PDD ver.2.1. Confirmation that the situation continues is provided as well as references to the relevant legislation. /42//43/.

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Determination conclusion
that the situation continue is requested.		particular the following information has been provided: "In general burning waste heaps should be extinguished and measures must be taken to prevent fires in the future. This is regulated by the "Rules of Safety in Coal Mines" Enforcement of this document is quite weak and for the most part is regulated by the Code of Administrative Offences of Ukraine which foresees only a small fine for such offence (up to approximately 17 EUR)."	References have been checked, they are relevant. Links have been under operation **CL7 has been closed**
CL8 Information / sources presented in the investment analysis spreadsheet are mostly addressed as from Monolith-Ukraine. Original evidences and sources for data are requested (fuel price, investment data, operational data..) Clarification, how is possible the same investment costs for all scenarios is requested.	B.6.4	The investment analysis has been developed following the *Sub-step 2b: Option III. Apply benchmark analysis* of the Tool for the demonstration and assessment of additionality Version 05.2. The purpose of this approach is to show that the project activity not undertaken as a joint implementation project will not be financially attractive. Therefore, investment analysis has been performed for the project activity. The inputs for the analysis are obtained from both open publicly available data and Monolith-Ukraine estimations. Monolith-Ukraine has prepared a business-plan for the activities in 2009 and 2010. The document has been developed in late 2008 and assumptions in it are valid as of 15th of January 2009 when the official start of construction has commenced. Key assumptions such as the price for coal and investment costs are confirmed additionally by other sources.	Information sources were presented and referenced. The inputs and links for the analysis were verified. Original evidences and sources for data (fuel price /33/, coal price /49/, /50/, investment data /23/, operational data and electricity prices /48/.) have been provided – see the left column. **CL8 has been closed**

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Determination conclusion
		The analysis at the time of decision has been based on actual market data and information available to the decision makers. It was not necessarily a published source. The analysis presented in the PDD takes that information and presents it with references that back-up the analysis. Such references may be the documents that where published after the date of analysis but they do contain data from the period before the decision has been made and thus represent the market information which has been available to decision makers at the time the analysis has been performed. The price of coal has been sourced from the report http://www.ier.com.ua/files//Polise_papers/pp_2009/PP_09_2009_ukr.pdf . Investment costs are additionally confirmed by the project construction design where they were estimated by the developer. This is confirmed by the detailed cost estimated provided in the supporting document SD18_InvestmentCost. The estimated investment costs are 60 150 kUAH while investment analysis in PDD uses 61 151 kUAH which is slightly larger in order to account for development period and contingencies during construction. The price for fuel is a conservative estimate as the actual prices have risen significantly above the estimated level. See http://autoline.com.ua/prices_fuel.php?coun	

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Determination conclusion
		try=UA . Prices for the period of September 2008 – January 2009 have been between 6,25 and 5,75 UAH/l Operational cost also reflect conservative estimate for projects of this kind. For comparison see documentation for JI project #0214 http://ji.unfccc.int/JI_Projects/DB/VOZK3HERSNQGFLCY0YZ3AX5W676M5R/Determination/Bureau%20Veritas%20Certification1277814730.41/viewDeterminationReport.html determination for which has been deemed final by the JISC. Calculation of total operational costs per tonne of coal for this project produce a result of 176.85 UAH/t (Assumptions for the year of 2011 based on 2010 constants). Total operational cost for Monolith-Ukraine are between 191,73 UAH/t and 176,53 UAH/t. The scenarios presented in the investment analysis spreadsheet relate exclusively to the sensitivity analysis. The proposed method of sensitivity analysis combines sets of assumptions on variations of key inputs in the investment analysis into the several scenarios. Results of this simulation are presented in the Section B.2. of the PDD ver. 2.0 in Table 7. As a matter of fact, these scenarios take into account reasonable variations of the investment costs. These variations cover the range of +10% and –10%.	
CL9 The crediting period is starting 1 January 2010,	C.1.2	The crediting period starting date is 1st of January 2010 and corresponds with the start	The crediting period starting date is 1 January 2010.This is confirmed with

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Determination conclusion
which is reasonable, if the start of the operation was realized. The evidence is requested.		of operation. This is confirmed by the supporting document which is the Permission to Conduct Operations #4018.09.30-10.10.1 issued by Derzhgirpromnaglyad (State Industrial Mining Supervision Committee) and is attached here as SD9_StartDateOperation.	Permission to Conduct Operations #4018.09.30-10.10.1 issued by Derzhgirpromnaglyad (State Industrial Mining Supervision Committee) /28//36/ **CL9 has been closed**
CL10 It should be confirm that the coal derived from project has same identical characteristics (EF and NCV) of coal mined, otherwise we need to consider a marginal increase in emissions as project emission	D.2.2 D.3.2 E.1.2 E.2.2 E.3.2	The coal that is produced by the project activity has the same or better characteristics than the coal that is produced by the underground mines of the region. The quality of the coal that is produced by the project has been verified by the third party laboratories. Evidences of these tests are provided as supporting document SD6_CoalQuality. These test certificates clearly show that ash, sulphur and NCV of the produced coal is better than the typical characteristics of the mined coal of the region as presented in the supporting document SD7_TypicalCoalQuality. Also, according to the reference book - Steam Plant Operation (2005). 8th edition, Everett B. Woodruff, Herbert B. Lammers, Thomas F. Lammers (coauthors), McGraw-Hill Professional, ISBN 0-07-141846-6, Page 200, the coal produced by the project can be classified as Subanthracite or Anthracite. Therefore, coal produced by the project is on average better than the coal produced by underground mines of the region.	It was confirmed and evidenced that the coal produced by the project is on average better than the coal produced by underground mines of the region. The quality of the coal that is produced by the project has been verified by the third party laboratories. Evidences of these tests are provided /24//25/ **CL10 has been closed**
CL11	D.2.4	Monolith-Ukraine does not use any	Monolith-Ukraine does not use any

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Determination conclusion
The confirmation that no contracted equipment employed for moving of heaps is involved is necessary.		outsourced or subcontracted equipment for moving of heaps as confirmed by the written statement from the company management attached here as SD16_NoOutsourcedEquipment.	outsourced or subcontracted equipment for moving of heaps /30/ **CL11 has been closed**
CL12 The procedures related to registration, monitoring, measurement and reporting should be included in the Monitoring Manual. Information about maintenance and installation is not included in the PDD but it should be included in the Monitoring Manual. The same is about day-to-day data handling procedure. The Manual should be provided to DNV.	D.2.7 D.2.8 D.2.9 D.3.7 D.3.8 D.3.9 D.5.1	The supporting document SD11_MonitoringManual describes the following monitoring procedures: basic monitoring principles, monitored parameters, measurement, registration and data handling procedure, reporting procedure, review and control of data, measurement devices maintenance and handling procedure, emergency procedures, archiving procedure, personnel training procedure, procedures identified for corrective actions in order to provide for more accurate future monitoring and reporting.	PP has provided The Monitoring Manual /18/ including basic monitoring principles, monitored parameters, measurement, registration and data handling procedure, reporting procedure, review and control of data, measurement devices maintenance and handling procedure, emergency procedures, archiving procedure, personnel training procedure, procedures identified for corrective actions in order to provide for more accurate future monitoring and reporting. The monitoring manual will give opportunity for real measurements of achieved emission reductions and contains principles and concepts on which it is based, operational and monitoring obligations of the project, **CL12 has been closed**
CL13 It stated in the PDD that the EIA was reviewed by competent authority of Ukraine but it was not provided any evidence for it.	F.1.2	The EIA has been reviewed by the competent environmental authorities of the Luhansk region of Ukraine who have concluded that the project design can be approved as stated in the *Finding # 08-01-12-6504-275 of the State Environmental Expertise* issued by the State Department of Environmental Protection of Ukraine in the	EIA as well as its approval have been provided by the PP /5//19/. **CL13 has been closed**

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Determination conclusion
		Luhansk Region. The copy of this *Finding* is attached as supporting document SD2_EIA_Review_Conclusion. Relevant information has also been added to the Section E.2. of the PDD ver. 2.0.	
CL14 It is not clear, if identified environmental impacts have been addressed in the project design. The evidence is requested.	F.1.5	All identified environmental impacts as well as mitigation measures have been addressed in project design and implementation as stated by: 1) Finding of the Integrated State Expertise #25/2008 issued by "UKRDERZHBUDEPERTISA" in Luhansk Region stating that the project design has been adjusted in order to be in full compliance with mandatory requirements; 2) Certificate of Compliance №ЛГ000082 issued by the State Architectural and Construction Control of the Luhansk Region confirming that the implemented project is in full compliance to the project design and mandatory requirements. Copies of these documents are attached here as supporting documents SD3_IntegratedExpertise, SD4_ComplianceCertificate	All identified environmental impacts as well as mitigation measures have been addressed and implemented by Monolith-Ukraine. The evidences were provided and verified and the operational recommendations as well as full compliance with mandatory requirements have been included in mentioned documents /5//19//34//35/ **CL14 has been closed**
CL15 The stakeholders' comments are obviously requested as part of EIA. It should be evidenced, tat it is not requirement of Ukrainian legislation.	G	As part of the EIA the stakeholders should be informed through the mass media about the proposed project as suggested by the *State Construction Standard DBN A.2.2.-1-2003 :"Structure and Contents of the Environmental Impact Assessment Report (EIR) for Designing and Construction of*	Information concerning this project has been made public through the local newspaper "VPERED-Rovenky" on the 31st of January 2008. /21/. No comments were received **CL15 has been closed**

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Determination conclusion
		Production Facilities, Buildings and Structures" State Committee Of Ukraine On Construction And Architecture, 2004. Information in accordance with the before mentioned standard has been made public through the local newspaper "VPERED-Rovenky" on the 31st of January 2008. No comments were received. The copy of the newspaper is attached as supporting document SD5_Newspaper. Also, information has been added to the Section G.1. of the PDD ver. 2.0.	
CL16 Leakage It is claimed that the project reduces the amount of coal mined based on the assumption of a stable market demand. It is not documented that the marked will adjust to this additional supply automatically by reducing mining.		Sufficiently responded during the teleconference.	ACM0009 is including a leakage calculation applying the same principles and it is found acceptable to apply this in the context of the proposed project as there is a net export of coal from Ukraine and this indicates that the coal supply to the national market is sufficient and that no national increase in consumption can be expected because of the additional coal provided from the project activity. **The CL16 is closed.**
CL17 Fugitive emissions "due to mining" are claimed. There is no quantification of this, nor is there a description beyond general reference to mining as such.		Sufficiently responded during the teleconference.	This is clarified through PP input. 25.67 m^3 CH_4 / tonne coal is taken from national inventory and correctly applied in the calculations for leakage. **The CL17 is closed.**

Table 4 Forward action requests

Forward action request	Reference to Table 2	Response by project participants
no FAR has been issued		