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

# VERIFICATION REPORT

## Verification of the Joint Implementation Large-scale Project

RECULTIVATION OF WASTE HEAPS IN DONETSK REGION IN ORDER TO REDUCE GREENHOUSE GAS EMISSIONS INTO THE ATMOSPHERE

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

Report No. 01 998 9105071974 –VR1
Revision No.02

**Customer: "RS-ARPI" LLC**

# VERIFICATION REPORT

| | |
|---|---|
| Date of first issue:<br>03.12.2012 | Project No:<br>01 998 9105071974 |
| Executor:<br>TÜV Rheinland (China) Ltd. (TÜV Rheinland) | Organizational unit:<br>TÜV Rheinland Ukraine Ltd.<br>Technical Competence Center |
| Customer:<br>"RS-ARPI" LLC | Client ref.:<br>Zhdanov Serhiy Petrovych |

Summary:

TÜV Rheinland (China) Ltd. (TÜV Rheinland) has performed the initial and first periodic verification of emission reductions generated by the JI project "Recultivation of waste heaps in Donetsk region in order to reduce greenhouse gas emissions into the atmosphere" for the period from 01/01/2008 till 30/09/2012.

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

In our opinion, the emission reductions reported through the monitoring report, version 2.0 dated 14/12/2012 are fairly stated and are accurate and free of material errors, omissions, or misstatements.

During the monitoring period the project has been implemented in accordance with the project design document version 2.0 dated 03/10/2012.

The emission reductions were calculated correctly on the basis of the approved monitoring plan contained in the project design document version 2.0 dated 03/10/2012.

TÜV Rheinland (China) Ltd. (TÜV Rheinland) is able to verify that the emission reductions generated by the JI project "Recultivation of waste heaps in Donetsk region in order to reduce greenhouse gas emissions into the atmosphere" during the period from 01/01/2008 till 30/09/2012 amount to 4 837 114 tonnes of $CO_2$ equivalent.

| | |
|---|---|
| Report No.:<br>01 998 9105071974 – VR1 | Subject Group:<br>JI |
| Project title:<br>Recultivation of waste heaps in Donetsk region in order to reduce greenhouse gas emissions into the atmosphere | |
| Work carried out by:<br>Dr. Valery Yakubovsky – Team Leader,<br>Technical Competence Center Director<br>Yuriy Kononov – Technical expert;<br>Ganna Zadnipryana – Auditor;<br>Dmytry Rakovich – Trainee. | ☒ No distribution without permission from the Client or responsible organizational unit |
| Work verified by:<br>Dr. Lixin Li – Technical Reviewer<br>TÜV Rheinland (China) Ltd. (TÜV Rheinland) | ☐ Limited distribution |
| Verification Report approved by:<br>Dr. Manfred Brinkmann –<br>Accredited Independent Entity Operational Manager | ☐ Unrestricted distribution |

| Date of this revision: | Revision No.: | Number of pages: |
|---|---|---|
| 24/12/2012 | 02 | **32** |

## Abbreviations

| | |
|---|---|
| $CO_2$ | Carbon Dioxide |
| AIE | Accredited Independent Entity |
| ANE | Authorized national entity |
| BE | Baseline Emission |
| CAR | Corrective Action Request |
| CL | Clarification Request |
| DR | Document Review |
| EIA | Environmental Impact Assessment |
| ERU | Emission Reduction Unit |
| FAR | Forward Action Request |
| GHG | Greenhouse Gas |
| I | Interview |
| ITL | International Transaction Log |
| JI | Joint Implementation |
| JISC | Joint Implementation Supervisory Committee |
| LoA | Letter of Approval |
| MoV | Means of Verification |
| MP | Monitoring Plan |
| OSV | On Site Visit |
| PDD | Project Design Document |
| PE | Project Emissions |
| t | tonne |
| SS | Stakeholders survey |
| UNFCCC | United Nations Framework Convention on Climate Change |

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# 1 VERIFICATION OPINION

TÜV Rheinland (China) Ltd. (China) Ltd. (TÜV Rheinland) has performed the initial and first periodic verification of the emission reductions generated by the JI project "Recultivation of waste heaps in Donetsk region in order to reduce greenhouse gas emissions into the atmosphere" for the period from 01/01/2008 till 30/09/2012.

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

It is responsibility of TÜV Rheinland (China) Ltd. (TÜV Rheinland) to express an independent verification opinion - conclusion on the verified amount of emission reductions generated by the project and reported by the project participants through the monitoring report, version 2.0 dated 14/12/2012.

TÜV Rheinland (China) Ltd. (TÜV Rheinland) has assessed the monitoring report on the basis of the monitoring plan contained in the registered project design document version 2.0 dated 03/10/2012 and the monitoring report version 2.0 dated 14/12/2012.

The verification included the assessment of:

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

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

In TÜV Rheinland's (China) Ltd. (TÜV Rheinland) opinion the emission reductions generated by the JI project "Recultivation of waste heaps in Donetsk region in order to reduce greenhouse gas emissions into the atmosphere" for the period from 01/01/2008 till 30/09/2012 are fairly stated, accurate

and free of material errors, omissions, or misstatements in the monitoring report, version 1.0 dated 09/10/2012.

The GHG emission reductions were calculated correctly on the basis of the registered project design document version 2.0 dated 03/10/2012.

TÜV Rheinland (China) Ltd. (TÜV Rheinland) is able to verify that the emission reductions generated by the JI project "Recultivation of waste heaps in Donetsk region in order to reduce greenhouse gas emissions into the atmosphere" for the period from 01/01/2008 till 30/09/2012 amount 4 837 114 tonnes of $CO_2$ equivalent.

# 2 INTRODUCTION

Company "RS-ARPI" LLC has commissioned TÜV Rheinland (China) (TÜV Rheinland) to carry out the verification of the JI project "Recultivation of waste heaps in Donetsk region in order to reduce greenhouse gas emissions into the atmosphere" (hereinafter "project") for the period from 01/01/2008 till 30/09/2012. This report contains the findings from the verification and conclusion on the verified amount of emission reductions.

## 2.1 Objective

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

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

The objective of this verification was to verify emission reductions generated by the JI project "Recultivation of waste heaps in Donetsk region in order to reduce greenhouse gas emissions into the atmosphere" for the period from 01/01/2008 till 30/09/2012.

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

## 2.2 Scope

The scope of this verification is the assessment of:

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

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

## 2.3 JI Project Description

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

**Table 1 – JI project brief information**

| | |
|---|---|
| **Project Parties involved:** | 1. Ukraine (Host party).<br>2. Estonia |
| **Title of the project:** | "Recultivation of waste heaps in Donetsk region in order to reduce greenhouse gas emissions into the atmosphere" |
| **Type of JI activity:** | Large-scale |
| **Baseline and monitoring methodology:** | JI specific approach |
| **Project entity participant:** | "RS-ARPI" LLC |
| **Other project participants:** | ProEffect OÜ |
| **Location of the project:** | Vuhlehirsk, Donetsk region, Ukraine. |
| **Crediting period of the project:** | 01/01/2008 – 31/12/2012 |
| **Period verified in this report:** | 01/01/2008 – 30/09/2012 |
| **Period verified in previous verification report:** | Not applicable |

The proposed project is aimed at recultivation of the waste heaps by extracting ROM coal from rock mass and its subsequent use in the energy industry sector. The purpose of this project is to reduce greenhouse gases in the atmosphere due to extraction of black coal from the waste heaps. Preventing self-heating and spontaneous combustion of the waste heaps will reduce negative impact on the environment. Baseline scenario assumes that the problem of waste heaps combustion will not be effectively resolved, rock mass of waste heaps will undergo self-ignition until all volume of coal contained in it does not burn. Continuation of existing situation will lead to large emissions of greenhouse gases in the atmosphere and to the general pollution of the ecosystem of the region. In addition, the coal production in the coal mines will lead to fugitive methane emissions.

The project "Recultivation of waste heaps in Donetsk region in order to reduce greenhouse gas emissions into the atmosphere" involves the introduction of complex of measures aimed at waste heaps dismantling with the aim of black coal extraction, which will partially replace coal that would otherwise be extracted by mining method, which would in turn lead to fugitive emissions of methane and carbon dioxide by electricity consumption. The project is implemented in Vuhlehirsk, Donetsk region, Ukraine.

The main factor that influenced the decision making on the implementation of this project was the incentive from Joint Implementation mechanism under the Kyoto Protocol. The decision on the implementation of this project was taken on December 14, 2006. During 2007 agreement with company-contractor, who will provide transportation services, was signed, and lease agreement of concentrating mill and contract on recultivation of the waste heaps were concluded. Starting date of the project is January 1, 2008, when operation of beneficiation installation began.

The project has been registered under national procedure as Track 1 JI project with the PDD version 2.0 dated 03/10/2012. The documentation on the project including the PDD, approval by the host Party, Determination report is available at:

http://ji.unfccc.int/JIITLProject/DB/4RQNH5ZIXERT7ZK6PW1JTR3XIIZ0YY/details

# 3 METHODOLOGY

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

The verification consists of the following three phases:

I) a desk review of the monitoring report including analysis of the compliance of the monitoring plan with the monitoring methodology;

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

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

The following subsections outline each step in more detail.

## 3.1 Desk review

Project participants provided TÜV Rheinland (China) Ltd. (TÜV Rheinland) all the necessary documents for document review. The monitoring report version 2.0 dated 14/12/2012 was assessed as part of the verification. In addition, the project's Project Design Document version 2.0 dated 03/10/2012 and project's Determination Report No. 01 998 9105071974 – DR dated 26/09/2012 were also reviewed. Supporting documents, such as, acceptance certificates of coal products, electricity, work completion certificate, environmental impact assessments and expert opinions, etc. were available during on site visit.

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

To address TÜV Rheinland (China) Ltd. (TÜV Rheinland) corrective action and clarification requests, project participants revised the monitoring report and resubmitted it as version 2.0 dated 14/12/2012.

The verification findings presented in this report relate to the monitoring report version 2.0 dated 14/12/2012 and project as described in the PDD version 2.0 dated 03/10/2012.

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

**Table 2 – Category 1 Documents**

| No. | Title of the document |
|---|---|
| /1/ | PDD "Recultivation of waste heaps in Donetsk region in order to reduce greenhouse gas emissions into the atmosphere" version 2.0 dated 03/10/2012 in Ukrainian. |
| /2/ | PDD "Recultivation of waste heaps in Donetsk region in order to reduce greenhouse gas emissions into the atmosphere" version 2.0 dated 03/10/2012 in English. |
| /3/ | Determination Report No. 01 998 9105071974 – DR dated 26/09/2012 |
| /4/ | Monitoring Report, version 1.0 dated 09/10/2012 |
| /5/ | Monitoring Report, version 2.0 dated 14/12/2012 |
| /6/ | GHG emission reduction calculation spreadsheet in Excel. |
| /7/ | "Joint implementation determination and verification manual", version 01, JISC. |
| /8/ | "Guidance on criteria for baseline setting and monitoring", version 03, JISC. |
| /9/ | Letter of Approval for JI project "Recultivation of waste heaps in Donetsk region in order to reduce greenhouse gas emissions into the atmosphere" #3770/23/7 dated 07/12/2012. |
| /10/ | Written project approval by a Party involved (Estonia) #12-1/8575-2 dated 24/10/2012 |

**Table 3 – Category 2 Documents**

| No. | Title of the document |
|---|---|
| /1/ | Acceptance certificates of carbonaceous rock mass for January - March 2008. |
| /2/ | Acceptance certificates of carbonaceous rock mass for June - August 2009. |
| /3/ | Acceptance certificates of carbonaceous rock mass for September – November 2010. |
| /4/ | Acceptance certificates of carbonaceous rock mass for April – June 2011. |
| /5/ | Acceptance certificates of carbonaceous rock mass for March – May 2012. |
| /6/ | Acceptance certificates of coal production for September - November 2008 |
| /7/ | Acceptance certificates of coal production for June – August 2009 |
| /8/ | Acceptance certificates of coal production for January – March 2010 |
| /9/ | Acceptance certificates of coal production for October – December |

| No. | Title of the document |
|---|---|
| | 2011 |
| /10/ | Acceptance certificates of coal production for March – July 2012 |
| /11/ | Acceptance certificates of consumed electricity energy in the result of project activity for 2010 |
| /12/ | Acceptance certificates of consumed electricity energy in the result of project activity for 2011 |
| /13/ | Order of Director of "RS-ARPI" LLC No.32 dated 14/12/2006 on considering the possibility of implementation of the proposed project with the assistance of the Kyoto Protocol |
| /14/ | Acceptance certificates for work performed on the amount of consumed diesel fuel for January - March 2008 |
| /15/ | Acceptance certificates for work performed on the amount of consumed diesel fuel for July - September 2009 |
| /16/ | Acceptance certificates for work performed on the amount of consumed diesel fuel for October - December 2010 |
| /17/ | Acceptance certificates for work performed on the amount of consumed diesel fuel for May - July 2011 |
| /18/ | Acceptance certificates for work performed on the amount of consumed diesel fuel for July - September 2012 |
| /19/ | Contract of work and labour No. 246/12 dated December 12, 2007 on conducting works on mine technical recultivation of waste heaps of CCM "Vuhlehirska" |
| /20/ | Passport of waste heap #2/9 |
| /21/ | Passport of waste heap #1/8 |
| /22/ | Contract №12/02-2007 dated February 2, 2007 on enriching rock mass of waste heaps concluded between PSSC CCM "Vuhlehirska" and "RS-ARPI" LLC |
| /23/ | Contract №22/12-2007 dated December 12, 2007 between "RS-ARPI" LLC and "VICTORY TOUR" LLC on providing transportation services for waste heaps dismantling |
| /24/ | The results of the analysis of coal for September - October 2008 |
| /25/ | The results of the analysis of coal for April - May 2009 |
| /26/ | The results of the analysis of coal for June - July 2010 |
| /27/ | The results of the analysis of coal for January - February 2011 |
| /28/ | The results of the analysis of coal for May - June 2012 |
| /29/ | Explanatory note to the technical project of concentrating mill "Vuhlehirska" after conducted modernization |
| /30/ | Comprehensive environmental impact assessment. EIA. 2007 PE PB "Ekoservice" |
| /31/ | Technical passport of meter LZQM 321.02.534 № 430454 |

| No. | Title of the document |
|---|---|
| /32/ | Technical passport of meter LZQM 321.02.534 № 430455 |
| /33/ | Act of replacement of electricity meter B071 dated 01/12/2007 |
| /34/ | Act of replacement of electricity meter SL B071 dated 01/12/2007 |
| /35/ | Technical passport of automobile scales of type "VET-60A-18" |
| /36/ | Order № 17 on information storage |
| /37/ | Order № 35 on on the establishment of the working group |
| /38/ | Report on the fire risk of Donetsk Region's waste heaps, Scientific Research Institute "Respirator", Donetsk, 2012 |
| /39/ | Monitoring instruction, acting at "RS-ARPI" LLC |
| /40/ | Certificate of attestation of laboratory № 196 dated February 25, 2008 |
| /41/ | Certificate of attestation of laboratory № 270 dated February 28, 2008 |

### 3.2 Interviews with project stakeholders

TÜV Rheinland (China) Ltd. (TÜV Rheinland) performed interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Interviewed representatives of "RS-ARPI" LLC are summarized in Table 4. The main topics of the interviews are summarized in Table 5.

**Table 4 – Persons interviewed**

| No. | Name | Organization | Position |
|---|---|---|---|
| /1/ | Shulzhenko Oleksandr Ivanovych | "RS-ARPI" LLC | Chief Engineer |
| /2/ | Bakatura Igor Vasylyovych | "RS-ARPI" LLC | Chief Technologist |
| /3/ | Chonka Viktor Ivanovych | "RS-ARPI" LLC | Chief Power Engineer and Metrologist |
| /4/ | Shkuray Nadia Yuriyivna | "RS-ARPI" LLC | Chief Accountant |

**Table 5 – Interview topics**

| No. | Date | Interviewed organization | Interview topics |
|---|---|---|---|
| /1/ | 19/11/2012 | "RS-ARPI" LLC | ➢ QA/QC of the project, Project management<br>➢ Reporting and calculation of emission reductions, |

| | | | |
|---|---|---|---|
| | | | data sources<br>➢ Project management, site visit<br>➢ QA/QC of the project, Project management, Project implementation,<br>➢ Operational reporting, logs, plant visit, monitoring equipment<br>➢ Environmental licenses, project implementation<br>➢ Data processing, reporting<br>➢ Monitoring equipment<br>➢ Operational reporting<br>➢ Monitoring activity, Personnel training |

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

Where TÜV Rheinland (China) Ltd. (TÜV Rheinland), in assessing the monitoring report and supporting documents, identifies issues that need to be corrected, clarified or improved with regard to the monitoring requirements, it should raise these issues and inform the project participants of these issues in the form of:

- Corrective action request (CAR), requesting the project participants to correct a mistake that is not in accordance with the monitoring plan;
- Clarification request (CL), requesting the project participants to provide additional information for the AIE to assess compliance with the monitoring plan;
- Forward action request (FAR), informing the project participants of an issue, relating to the monitoring that needs to be reviewed during the next verification period.

The verification of the project resulted in 15 Corrective action requests and 03 Clarification requests.

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

### 3.4 Internal Technical Review

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

### 3.5 Verification team

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

**Table 6 – Verification team**

| Name | Role |
|---|---|
| Dr. Manfred Brinkmann | Accredited Independent Entity Operational Manager |
| Dr. Lixin Li | Technical Reviewer |
| Dr. Valery Yakubovsky | Team Leader |
| Yuriy Kononov | Technical Expert |
| Ganna Zadnipryana | Auditor |
| Dmytry Rakovich | Trainee |

# 4 VERIFICATION FINDINGS

This section summarizes the findings from the verification of the emission reductions generated by the JI project "Recultivation of waste heaps in Donetsk region in order to reduce greenhouse gas emissions into the atmosphere" for the period from 01/01/2008 till 30/09/2012.

## 4.1 Project approval by Parties involved

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

A written project approval by Ukraine (host Party) is available:
#3770/23/7 dated 07/12/2012.

Written project approval by a Party involved in JI SSC project, other than the host Party was obtained:
#12-1/8575-2 dated 24/10/2012.

Written project approvals are available at:
http://ji.unfccc.int/JIITLProject/DB/4RQNH5ZIXERT7ZK6PW1JTR3XIIZ0YY/details

The written project approvals mentioned above are unconditional.

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

## 4.2 Project implementation

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

The project has been implemented in accordance with the PDD version 2.0 dated 03/10/2012 regarding which the determination has been deemed final. This JI project is registered as Track 1 project. The description of this project is available in section 2.3. of this Verification report.

The emission reductions generated by the JI SSC project reported for the period from 01/01/2008 till 30/09/2012 amount 4 837 114 $tCO_2e$.

The verification team of TÜV Rheinland (China) Ltd. (TÜV Rheinland) can confirm, through the on-site visit that all physical features of the proposed JI project activity including data collecting and storage systems have been implemented, the project is completely operational and has been implemented as described in the registered PDD version 2.0 dated 03/10/2012.

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

### 4.3 Compliance with monitoring plan

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

The monitoring of the JI project occurred in accordance with the monitoring plan contained in the registered PDD version 2.0 dated 03/10/2012.
For calculating the emission reductions key factors influencing the baseline emissions as well as risks associated with the project were taken into account, as appropriate. For more detailed information, please, refer to the determined and registered PDD, version 2.0 dated 03/10/2012.

All data sources used for calculating emission reductions are indicated in table B.2.1 and B.2.3 of the Monitoring Report, version 2.0 dated 14/12/2012.

The emission factor used to calculate emission reductions are selected in accordance with the registered PDD version 2.0 dated 03/10/2012. The choice of this emission factor is appropriately justified in the PDD version 2.0 dated 03/10/2012 and in general accuracy and reasonableness are carefully balanced.

The calculation of emission reductions is done based on conservative assumptions and the most plausible scenarios in a transparent manner. The calculation of the baseline emissions is based on the JI specific approach in accordance with the registered PDD version 2.0 dated 03/10/2012.

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

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

### 4.4 Revision of monitoring plan

If the project participants submitted to the AIE a revised monitoring plan, in accordance with paragraphs 99 - 100 of the DVM the assessment of this area focuses on whether the correct and complete justification for the proposed revision is provided, and whether the proposed revision improves the accuracy and/or applicability of information collected compared to the original monitoring plan without changing conformity with the relevant rules and regulations for the establishment of monitoring plans.

There was no revision to the monitoring plan. The monitoring of the JI project occurred in accordance with the monitoring plan contained in the registered PDD, version 2.0 dated 03/10/2012.

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

### 4.5 Data Management

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

Data collection procedure is carried out in accordance with the monitoring plan, including the quality control and quality assurance procedures and has been checked by the verification team on site visit. The monitoring plan is presented in section D of the registered PDD version 2.0 dated 03/10/2012. The data and their sources, provided in monitoring report, are clearly identified, reliable and transparent.

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

The data collection and management system for the project is in accordance with the monitoring plan as described in the registered PDD 2.0 dated 03/10/2012.

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

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

The verification team of TÜV Rheinland (China) Ltd. (TÜV Rheinland) verified that all parameters are used correctly in the calculations, all results are verifiable and transparent, all assumptions are described and based on verifiable evidence and calculations are done in accordance with the pre-defined formulae from registered PDD 2.0 dated 03/10/2012.

According to the Monitoring Report, version 2.0 dated 14/12/2012 and GHG emission reductions calculation spreadsheet in Excel format the emissions for the project scenario, emissions for the baseline scenario and emission reductions for chosen monitoring period (01/01/2012 – 30/09/2012) are provided in table 7 below.

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

| **Monitoring Period:** | **01/01/2008 – 30/09/2012** |
|---|---|
| Emissions for the project scenario: | 34 172 $tCO_2e$ |
| Emissions for the baseline scenario: | 3 790 273 $tCO_2e$ |
| Leakage: | -1 081 013 $tCO_2e$ |
| Emission reductions: | 4 837 114 $tCO_2e$ |

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

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

***FAR 01**. The Project hasn`t obtained Letters of Approval from the parties involved.*

During verification project participant has provided to AIE Letter of Approval from Host country (Ukraine) Approval #3770/23/7 dated 07/12/2012 and from the foreign country (Estonia) #12-1/8575-2 dated 24/10/2012.

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

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## ANNEX A – VERIFICATION PROTOCOL

### Table 1 – Requirements Checklist

| CHECKLIST QUESTION | DVM* paragraph | Draft Conclusion | Action requested to project participants | Final Conclusion |
|---|---|---|---|---|
| **1. Project approvals by Parties Involved** | | | | |
| 1. 1. Has the DFPs of at least one Party involved, other than the host Party, issued a written project approval when submitting the first verification report to the secretariat for publication in accordance with paragraph 38 of the JI guidelines, at the latest? | 90 | Yes, both written approvals are presented in the Monitoring Report | OK | OK |
| 1. 2. Are all the written project approvals by Parties involved unconditional? | 91 | Yes, all the written project approvals by Parties involved are unconditional. | OK | OK |
| **2. Project implementation** | | | | |
| 2.1. Has the project been implemented in accordance with the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website? | 92 | Yes, the project has been implemented in accordance with the determined PDD.<br><br>**CAR 01.** Please specify a document based on which specific approach to JI projects is used.<br><br>**CAR 02.** Section A.5.1. contains information on the results of the study of fire hazard of waste heaps in Lugansk region. Please provide relevant information for the Donetsk region. | **CAR 01.**<br>**CAR 02.** | OK |
| 2.2. What is the status of operation of the project during the monitoring period? | 93 | The project received a positive opinion by AIE and passed the | **CAR 03.** | OK |

| CHECKLIST QUESTION | DVM* paragraph | Draft Conclusion | Action requested to project participants | Final Conclusion |
|---|---|---|---|---|
| | | final determination. Currently this project is at the stage of verification.<br><br>**CAR 03.** Please indicate relevant documents that confirm the beginning of the investment phase of the project. | | |
| **3. Compliance with monitoring plan** | | | | |
| 3.1. Did the monitoring occur in accordance with the monitoring plan included in the PDD regarding which the determination has been deemed final? | 94 | Yes, the monitoring occurred in accordance with the monitoring plan included in the determined PDD. | OK | OK |
| 3.2. For calculating the emission reductions or enhancements of net removals, were key factors, e.g. those listed in 23 (b) (i)-(vii) of DVM*, influencing the baseline emissions or net removals and the activity level of the project and the emissions or removals as well as risks associated with the project taken into account, as appropriate? | 95 (a) | Yes, all the key factors were taken into account for calculating the emission reductions or enhancements of net removals.<br><br>**CAR 04.** Section B.2.1 has information on the periodicity of publication of SEIA orders, and also it is mistakenly stated that the expected indicators are chosen "in this project development document". Please make reference to the monitoring report.<br><br>**CAR 05**. Section B of the | **CAR 04.**<br>**CAR 05.**<br>**CAR 06.**<br>**CAR 07.** | OK |

| CHECKLIST QUESTION | DVM* paragraph | Draft Conclusion | Action requested to project participants | Final Conclusion |
|---|---|---|---|---|
| | | monitoring report states that for converting measurement units of diesel fuel it is used density according to invalid GOST 3868-99. Please provide another link.<br><br>**CAR 06.** Please provide appropriate justification that coal concentrate, which is stored in the warehouse of finished goods, does not lead to GHG emissions into the atmosphere. | | |
| 3.3. Are data sources used for calculating emission reductions or enhancements of net removals clearly identified, reliable and transparent? | 95 (b) | Yes, all the data sources used for calculating emission reductions or enhancements of net removals are clearly identified, reliable and transparent.<br><br>**CL 01.** Please describe in detail how the weighing of coal production and its transfer to the consumer are performed.<br>**CAR 07.** In Table 5 it is mistakenly states that physical conditions t=293.15 K; p=101.2325 kPa are normal. Please make the appropriate corrections. | **CL 01.**<br>**CAR 07.**<br>**CAR 08.**<br>**CAR 09.**<br>**CAR 10.** | OK |

| CHECKLIST QUESTION | DVM* paragraph | Draft Conclusion | Action requested to project participants | Final Conclusion |
|---|---|---|---|---|
| | | **CAR 08.** Please provide more precise reference to the average electricity consumption per ton of extracted coal in Ukraine.<br>**CAR 09.** Please provide more clear reference to the National Inventory Report of Ukraine in 1990-2010 for the parameters of Table 5.<br>**CAR 10.** Please provide more transparent information on the orders of the National Environmental Investment Agency on Specific indirect carbon dioxide emissions from electricity consumption. | | |
| 3.4. Are emission factors, including default emission factors, if used for calculating the emission reductions or enhancements of net removals, selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice? | 95 (c) | Emission factors, including default emission factors, used for calculating the emission reductions or enhancements of net removals, are selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice<br>**CL 02.** Please provide an explanation on how on the use of fugitive methane emission factor during extraction of coal | **CL 02.** | OK |

| CHECKLIST QUESTION | DVM* paragraph | Draft Conclusion | Action requested to project participants | Final Conclusion |
|---|---|---|---|---|
| | | from mines from National Inventory Report for 1999-2009 | | |
| 3.5. Is the calculation of emission reductions or enhancements of net removals calculated based on conservative assumptions and the most plausible scenarios in a transparent manner? | 95 (d) | The calculation of emission reductions or enhancements of net removals are calculated based on conservative assumptions and the most plausible scenarios in a transparent manner | OK | OK |
| **4. Applicable to JI SSC projects only** | | | | |
| 4.1. Is the relevant threshold to be classified as JI SSC project not exceeded during the monitoring period on an annual average basis?<br>If the threshold is exceeded, is the maximum emission reduction level estimated in the PDD for the JI SSC project or the bundle for the monitoring period determined? | 96 | Not applicable | OK | OK |
| **5. Revision of monitoring plan**<br>***Applicable only if monitoring plan is revised by project participants*** | | | | |
| 5.1. Did the project participants provide an appropriate justification for the proposed revision? | 99 (a) | Not applicable | OK | OK |
| 5.2. Does the proposed revision improve the accuracy and/or applicability of information collected compared to the original monitoring plan without changing conformity with the relevant rules and regulations for the establishment of monitoring plans? | 99 (b) | Not applicable | OK | OK |
| **6. Data management** | | | | |

| CHECKLIST QUESTION | DVM* paragraph | Draft Conclusion | Action requested to project participants | Final Conclusion |
|---|---|---|---|---|
| 6.1. Is the implementation of data collection procedures in accordance with the monitoring plan, including the quality control and quality assurance procedures? | 101 (a) | The implementation of data collection procedures is in accordance with the monitoring plan, including the quality control and quality assurance procedures. | | |
| 6.2. Is the function of the monitoring equipment, including its calibration status, is in order? | 101 (b) | The monitoring equipment functions properly, including its calibration.<br><br>**CAR 11**. Please provide appropriate chronology of calibration of automobile scales "VET-60A-18", starting from 2008.<br><br>**CAR 12.** Please add information on the enterprise that performed the installation and connection of electric meters. | **CAR 11.**<br>**CAR 12.** | OK |
| 6.3. Are the evidence and records used for the monitoring maintained in a traceable manner? | 101 (c) | The evidence and records used for the monitoring are maintained in a traceable manner.<br><br>**CAR 13.** In Table 6 it is mistakenly defined calculation method for of consumed electric energy. Please make corrections. | **CAR 13.** | OK |

| CHECKLIST QUESTION | DVM* paragraph | Draft Conclusion | Action requested to project participants | Final Conclusion |
|---|---|---|---|---|
| 6.4. Is the data collection and management system for the project in accordance with the monitoring plan? | 101 (d) | Implemented data collection and management system is in accordance with the monitoring plan, as described in the PDD determination of which is considered to be final.<br><br>**CL 03.** Please clarify the form of ownership CCM "Vuhlehirska" in Section C.1.1 and through the whole monitoring report.<br><br>**CAR 14.** Numbering is broken of equations according to the determined PDD version 2.0 dated 03/10/2012. Please make the appropriate corrections.<br><br>**CAR 15.** Please add Coal Chemistry Laboratory to Figure 2: Location of measuring points and measuring devices. | **CL 03.**<br>**CAR 14.**<br>**CAR 09.** | OK |

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

| No. | Type of request | Observation | Ref. to checklist question in table 1 | Summary of project owner response | Verification team conclusion |
|---|---|---|---|---|---|
| 1. | **CAR 01.** | Please specify a document based on which specific approach to JI projects is used. | 92 | Relevant information is provided. Please see revised version of monitoring report, Section A.5. | Issue is closed |
| 2. | **CAR 02.** | Section A.5.1. contains information on the results of the study of fire hazard of waste heaps in Lugansk region. Please provide relevant information for the Donetsk region. | 92 | Relevant correction was made. Please see revised version of monitoring report, Section A.5.1. | Issue is closed |
| 3. | **CAR 03.** | Please indicate relevant documents that confirm the beginning of the investment phase of the project. | 93 | Relevant correction was made. Please see revised version of monitoring report, Section A.6. | Issue is closed |
| 4. | **CAR 04.** | Section B.2.1 has information on the periodicity of publication of SEIA orders, and also it is mistakenly stated that the expected indicators are chosen "in this project development document". Please make reference to the monitoring report | 95(a) | Relevant correction was made. Please see revised version of monitoring report, Section B.2.1. | Issue is closed |
| 5. | **CAR 05.** | Section B of the monitoring report states that for converting measurement units of diesel fuel it is used density according to invalid GOST 3868-99. | 95(a) | Relevant reference was provided. Please see revised version of monitoring report, Section B. | Issue is closed |

| No. | Type of request | Observation | Ref. to checklist question in table 1 | Summary of project owner response | Verification team conclusion |
|---|---|---|---|---|---|
| | | Please provide another link. | | | |
| 6. | **CAR 06.** | Please provide appropriate justification that coal concentrate, which is stored in the warehouse of finished goods, does not lead to GHG emissions into the atmosphere | 95(a) | The purpose of the project is processing waste heaps and extracting carbon from the waste mass. Sorted fraction of high carbon content is used for energy purposes in the national economy. Enrichment waste is inert rock mass, which has very low carbon content. Besides, waste heaps of flat form is formed from enrichment waste that does not cause erosion and allows effective monitoring condition of heap. Due to these factors, the possibility of forming emissions from burning heaps from enrichment waste is excluded. Emissions factors in the form of consumption of fuel and electricity for enrichment waste treatment (export, warehousing, etc.). are already included in the calculation of the project emissions, because the entire | Issue is closed |

| No. | Type of request | Observation | Ref. to checklist question in table 1 | Summary of project owner response | Verification team conclusion |
|---|---|---|---|---|---|
| | | | | volume of fuel consumption by the enterprise is taken into consideration.<br>Methane emissions from enriched coal, which is stored at the site of project implementation is neglected because this coal is already degassed for initial extraction from the mine and subsequent storage in the heap. In any case, the volume of coal that would be mined in the baseline scenario would be subject to the same storage and transport leading to the same emissions. Therefore, this potential source of emissions is neglected and thus does not affect the calculation of emission reductions under the project. | |
| 7. | **CAR 07.** | In Table 5 it is mistakenly states that physical conditions t=293.15 K; p=101.2325 kPa are normal. Please make the appropriate corrections. | 95(b) | Relevant correction was made. Please see revised version of monitoring report, Section B.2.1. | Issue is closed |

| No. | Type of request | Observation | Ref. to checklist question in table 1 | Summary of project owner response | Verification team conclusion |
|---|---|---|---|---|---|
| 8. | **CAR 08.** | Please provide more precise reference to the average electricity consumption per ton of extracted coal in Ukraine. | 95(b) | Relevant reference was provided. Please see revised version of monitoring report, Section B.2.1. | Issue is closed |
| 9. | **CAR 09.** | Please provide more clear reference to the National Inventory Report of Ukraine in 1990-2010 for the parameters of Table 5. | 95(b) | Relevant reference was provided. Please see revised version of monitoring report, Section B.2.1. | Issue is closed |
| 10. | **CAR 10.** | Please provide more transparent information on the orders of the National Environmental Investment Agency on Specific indirect carbon dioxide emissions from electricity consumption. | 95(b) | Relevant references were provided. Please see revised version of monitoring report, Section B.2.1. | Issue is closed |
| 11. | **CAR 11.** | Please provide appropriate chronology of calibration of automobile scales "VET-60A-18", starting from 2008. | 101(b) | Relevant information was provided. Please see revised version of monitoring report, Section B.1.2. | Issue is closed |
| 12. | **CAR 12.** | Please add information on the enterprise that performed the installation and connection of electric meters. | 101(b) | Relevant information was provided. Please see revised version of monitoring report, Section B.1.4. | Issue is closed |

| No. | Type of request | Observation | Ref. to checklist question in table 1 | Summary of project owner response | Verification team conclusion |
|---|---|---|---|---|---|
| 13. | **CAR 13.** | In Table 6 it is mistakenly defined calculation method for of consumed electric energy. Please make corrections. | 101(c) | Relevant correction was made. Please see revised version of monitoring report, Section B.2.2. | Issue is closed |
| 14. | **CAR 14.** | Numbering is broken of equations according to the determined PDD version 2.0 dated 03/10/2012. Please make the appropriate corrections. | 101(d) | Relevant correction was made. Please see revised version of monitoring report, Section D.1. | Issue is closed |
| 15. | **CAR 15.** | Please add Coal Chemistry Laboratory to Figure 2: Location of measuring points and measuring devices. | 101(d) | Relevant correction was done. Please see revised version of monitoring report, Annex 2. | Issue is closed |
| 16. | **CL 01.** | Please describe in detail how the weighing of coal production and its transfer to the consumer are perfomed. | 95(b) | Relevant information was provided. Please see revised version of monitoring report, Section B. | Issue is closed |
| 17. | **CL 02.** | Please provide an explanation on how on the use of fugitive methane emission factor during extraction of coal from mines from National Inventory Report for 1999-2009 | 95(c) | National Inventory Report In Ukraine for 1990-2009 gives clear and transparent information on the value of fugitive methane emission factor during operation of mines. In the new edition of this source this factor has no numerical value, and | Issue is closed |

| No. | Type of request | Observation | Ref. to checklist question in table 1 | Summary of project owner response | Verification team conclusion |
|---|---|---|---|---|---|
| | | | | presented as a curve on the graph. This method of data demonstration does not allow accurate and transparent identifying appropriate factor value, but only shows the tendency of this indicator change by years. Application of this source provides availability of high level of uncertainty that puts into doubt overall results of calculations of emission reductions. | |
| 18. | **CL 03.** | Please clarify the form of ownership CCM "Vuhlehirska" in Section C.1.1 and through the whole monitoring report. | 95(d) | Relevant correction was done. Please see revised version of monitoring report. | Issue is closed |