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

# VERIFICATION REPORT

## Verification of the Joint Implementation Large-scale Project

Implementation of complex of measures on waste heaps processing with the aim to reduce GHG emissions in the atmosphere

Initial and first periodic verification:
01/03/2009 – 31/10/2012

Report No. 01 998 9105072334–VR1
Revision No. 02

**Customer: "REMSTROYPROEKT 2002" LLC**

# VERIFICATION REPORT

| | |
|---|---|
| Date of first issue:<br>09.11.2012 | Project No:<br>01 998 9105072334 |
| Executor:<br>TÜV Rheinland (China) Ltd. (TÜV Rheinland) | Organizational unit:<br>TÜV Rheinland Ukraine Ltd.<br>Technical Competence Center |
| Customer:<br>"REMSTROYPROEKT 2002" 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 "Implementation of complex of measures on waste heaps processing with the aim to reduce GHG emissions in the atmosphere" for the period from 01/03/2009 till 31/10/2012.

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 12/11/2012 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 16/10/2012.

The emission reductions were calculated correctly on the basis of the approved monitoring plan contained in the project design document version 2.0 dated 16/10/2012.

TÜV Rheinland (China) Ltd. (TÜV Rheinland) is able to verify that the emission reductions generated by the JI project Implementation of complex of measures on waste heaps processing with the aim to reduce GHG emissions in the atmosphere for the period from 01/03/2009 till 31/10/2012 amount to 1 900 402 tonnes of $CO_2$ equivalent.

| | |
|---|---|
| Report No.:<br>01 998 9105072334–VR1 | Subject Group:<br>JI |
| Project title:<br>Implementation of complex of measures on waste heaps processing with the aim to reduce GHG emissions in 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>Dmitry Rakovich – Trainee. | |
| Work verified by:<br>Dr. Lixin Li – Technical Reviewer<br>TÜV Rheinland (China) Ltd. (TÜV Rheinland) | |
| Verification Report approved by:<br>Dr. Manfred Brinkmann –<br>Accredited Independent Entity Operational Manager | |

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| Date of this revision: | Revision No.: | Number of pages: |
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## 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) has performed the initial and first periodic verification of the emission reductions generated by the JI project "Implementation of complex of measures on waste heaps processing with the aim to reduce GHG emissions in the atmosphere" for the period from 01/03/2009 till 31/10/2012.

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 12/11/2012.

TÜV Rheinland (China) Ltd. (TÜV Rheinland) has assessed the monitoring report on the basis of the monitoring plan contained in the registered project design document version 2.0 dated 16/10/2012 and the monitoring report version 2.0 dated 12/11/2012.

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) TÜV Rheinland Japan 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 Japan Ltd. (TÜV Rheinland) planned and performed the verification by obtaining evidence information and explanations that TÜV Rheinland Japan 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 Implementation of complex of measures on waste heaps processing with the aim to reduce GHG emissions in the atmosphere for the period from 01/03/2009 till

31/10/2012 are fairly stated, accurate and free of material errors, omissions, or misstatements in the monitoring report, version 2.0 dated 12/11/2012.
The GHG emission reductions were calculated correctly on the basis of the registered project design document version 2.0 dated 16/10/2012.

TÜV Rheinland (China) (TÜV Rheinland) is able to verify that the emission reductions generated by the JI project "Implementation of complex of measures on waste heaps processing with the aim to reduce GHG emissions in the atmosphere" for the period from 01/03/2009 till 31/10/2012 amount to 1 900 402 tonnes of $CO_2$ equivalent.

# 2 INTRODUCTION

Company "REMSTROYPROEKT 2002" LLC has commissioned TÜV Rheinland (China) Ltd. (TÜV Rheinland) to carry out the verification of the JI project "Implementation of complex of measures on waste heaps processing with the aim to reduce GHG emissions in the atmosphere" (hereinafter "project") for the period from 01/03/2009 till 31/10/2012. 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 "Implementation of complex of measures on waste heaps processing with the aim to reduce GHG emissions in the atmosphere" for the period from 01/03/2009 till 31/10/2012.

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:** | "Implementation of complex of measures on waste heaps processing with the aim to reduce GHG emissions in the atmosphere" |
| **Type of JI activity:** | Large-scale |
| **Baseline and monitoring methodology:** | JI specific approach |
| **Project entity participant:** | "REMSTROYPROEKT 2002" LLC |
| **Other project participants:** | ProEffect OÜ |
| **Location of the project:** | urban-type settlement Talove, Lugansk region, Ukraine |
| **Crediting period of the project:** | 01/03/2009 – 31/12/2012 |
| **Period verified in this report:** | 01/03/2009 – 31/10/2012 |
| **Period verified in previous verification report:** | Not applicable |

Purpose of the proposed Joint Implementation project is the reduction of greenhouse gas emissions from spontaneous combustion of waste heaps of coal mines by dismantling rock, extracting from it coal part and forming beneficiation wastes, which do not have tendency to self-ignition. Implementation of set of measures aimed at processing rock mass will reduce negative impact not only on air, but also on depths of surrounding areas.

Baseline scenario assumes that the problem of burning of waste heaps will not be solved effectively, rock mass of waste heaps will ignite spontaneously until all amount of coal contained therein will not be burned. Continuation of existing situation will lead to large greenhouse

gas emissions into the atmosphere and to the general pollution of the surrounding ecosystem of the region. Herewith, coal is extracted using mining method, polluting the atmosphere by fugitive methane emissions.

The project "Implementation of complex of measures on waste heaps processing with the aim to reduce GHG emissions in the atmosphere" is an ecological project, which is aimed at reducing carbon dioxide emissions by dismantling and further processing the rock mass of the waste heap, extracting secondary coal from it. The project will be implemented in the urban-type settlement Talove, Lugansk region, Ukraine. Processing the rock mass of the waste heap provides its beneficiation in pneumatic separator, and all the technology used under the project refers to the dry method of beneficiation.

Decision on implementation of project, which involves processing rock mass of waste heap with the aim to reduce GHG emissions, was taken in late 2008. "REMSTROYPROEKT 2002" LLC, basing on the concluded contract with the customer No. 12/02-2009 dated 12/02/2009, commits itself to perform works on technical mining recultivation of the waste heap # 12, located on the territory of urban-type settlement Talove, of Myrnenska Village Council of Luhansk region. "REMSTROYPROEKT 2002" LLC rents enrichment complex that belongs to "AUTO-GAS-SERVIS 2007" LLC. For performing works on dismantling the waste heap and transportation of rock mass to enrichment complex JI project owner entered into agreement with the company-contractor of SE "STROIMEHANIZATSIYA", which will implement these works.

The project has been registered under national procedure as Track 1 JI project with the PDD version 2.0 dated 16/10/2012. The documentation on the project including the PDD, approval by the host Party, Determination report is available at:

*http://ji.unfccc.int/JIITLProject/DB/SOACN4XN7BZC33DOD4EQC0DHOD5O6S/details*

# 3 METHODOLOGY

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

The verification consists of the following three phases:

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

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

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

The following subsections outline each step in more detail.

## 3.1 Desk review

Project participants provided TÜV Rheinland (China) Ltd. (TÜV Rheinland) all the necessary documents for document review. The monitoring report version 1.0 dated 29/10/2012 was assessed as part of the verification. In addition, the project's Project Design Document version 2.0 dated 16/10/2012 and project's Determination Report No. 01 998 9105072334 – DR dated 26/10/2012 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 12/11/2012.

The verification findings presented in this report relate to the monitoring report version 2.0 dated 12/11/2012 and project as described in the PDD version 2.0 dated 16/10/2012.

The following tables outline the documentation reviewed during the verification. Documents provided by "REMSTROYPROEKT 2002" 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 "Implementation of complex of measures on waste heaps processing with the aim to reduce GHG emissions in the atmosphere" version 2.0 dated 16/10/2012 in Ukrainian. |
| /2/ | Monitoring Report, version 1.0 dated 29/10/2012 |
| /3/ | Monitoring Report, version 2.0 dated 12/11/2012 |
| /4/ | GHG emission reduction calculation spreadsheet in Excel. |
| /5/ | "Joint implementation determination and verification manual", version 01, JISC. |
| /6/ | "Guidance on criteria for baseline setting and monitoring", version 03, JISC. |
| /7/ | Letter of Approval for JI project "Implementation of complex of measures on waste heaps processing with the aim to reduce GHG emissions in the atmosphere" from Ukraine #3628/23/7 dated 26/11/2012 |
| /8/ | Letter of Approval for JI project "Implementation of complex of measures on waste heaps processing with the aim to reduce GHG emissions in the atmosphere" from Estonia #12-1/9264-2 dated 16/11/2012 |

**Table 3 – Category 2 Documents**

| No. | Title of the document |
|---|---|
| /1/ | Acceptance certificate of coal products for April 2009 dated 05/05/2009. |
| /2/ | Acceptance certificate of coal products for June 2009 dated 02/07/2009. |
| /3/ | Acceptance certificate of coal products for January 2010 dated 03/02/2010. |
| /4/ | Acceptance certificate of coal products for March 2010 dated 02/04/2010. |
| /5/ | Acceptance certificate of coal products for September 2010 dated 06/10/2010. |
| /6/ | Acceptance certificate of coal products for January 2011 dated 01/02/2011. |
| /7/ | Acceptance certificate of coal products for February 2011 dated 04/03/2011. |
| /8/ | Acceptance certificate of coal products for August 2011 dated 03/09/2011. |
| /9/ | Acceptance certificate of coal products for October 2011 dated |

| No. | Title of the document |
|---|---|
| | 02/11/2011. |
| /10/ | Acceptance certificate of coal products for April 2012 dated 10/05/2012. |
| /11/ | Acceptance certificate of coal products for May 2012 dated 01/06/2012. |
| /12/ | Acceptance certificate of coal products for August 2012 dated 09/09/2012. |
| /13/ | Acceptance certificates of consumed electricity for 2009 |
| /14/ | Acceptance certificates of consumed electricity for 2012 |
| /15/ | Order of Director of "REMSTROYPROEKT 2002" LLC No.46/7 dated 10/07/2008 on consideration of the possibility of the proposed JI project implementation involving mechanisms of the Kyoto Protocol |
| /16/ | Acceptance certificate of work completion on the number of transported carbonaceous rock and consumed diesel fuel for August 2009 |
| /17/ | Acceptance certificate of work completion on the number of transported carbonaceous rock and consumed diesel fuel for September 2009 |
| /18/ | Acceptance certificate of work completion on the number of transported carbonaceous rock and consumed diesel fuel for March 2009 |
| /19/ | Acceptance certificate of work completion on the number of transported carbonaceous rock and consumed diesel fuel for July 2009 |
| /20/ | Acceptance certificate of work completion on the number of transported carbonaceous rock and consumed diesel fuel for December 2009 |
| /21/ | Acceptance certificate of work completion on the number of transported carbonaceous rock and consumed diesel fuel for February 2010 |
| /22/ | Acceptance certificate of work completion on the number of transported carbonaceous rock and consumed diesel fuel for June 2010 |
| /23/ | Acceptance certificate of work completion on the number of transported carbonaceous rock and consumed diesel fuel for May 2010 |
| /24/ | Acceptance certificate of work completion on the number of transported carbonaceous rock and consumed diesel fuel for August 2010 |
| /25/ | Acceptance certificate of work completion on the number of transported carbonaceous rock and consumed diesel fuel for November 2010 |
| /26/ | Acceptance certificate of work completion on the number of transported carbonaceous rock and consumed diesel fuel for March 2011 |
| /27/ | Acceptance certificate of work completion on the number of |

| No. | Title of the document |
|---|---|
| | transported carbonaceous rock and consumed diesel fuel for October 2011 |
| /28/ | Acceptance certificate of work completion on the number of transported carbonaceous rock and consumed diesel fuel for November 2011 |
| /29/ | Acceptance certificate of work completion on the number of transported carbonaceous rock and consumed diesel fuel for January 2011 |
| /30/ | Acceptance certificate of work completion on the number of transported carbonaceous rock and consumed diesel fuel for October 2012 |
| /31/ | Acceptance certificate of work completion on the number of transported carbonaceous rock and consumed diesel fuel for July 2012 |
| /32/ | Acceptance certificate of work completion on the number of transported carbonaceous rock and consumed diesel fuel for September 2012 |
| /33/ | Acceptance certificate of work completion on the number of transported carbonaceous rock and consumed diesel fuel for June 2012 |
| /34/ | Act of compliance of Coal Chemistry Laboratory "MCM "Bilorichenska" JSC to certification criteria, established on conducting measurements in the field of state metrological control distribution |
| /35/ | Results of the analysis of coal products, which are performed by "MCM "Bilorichenska" JSC, for October 2009 |
| /36/ | Results of the analysis of coal products, which are performed by "MCM "Bilorichenska" JSC, for September 2009 |
| /37/ | Results of the analysis of coal products, which are performed by "MCM "Bilorichenska" JSC, for March 2010 |
| /38/ | Results of the analysis of coal products, which are performed by "MCM "Bilorichenska" JSC, for April 2010 |
| /39/ | Results of the analysis of coal products, which are performed by "MCM "Bilorichenska" JSC, for July 2011 |
| /40/ | Results of the analysis of coal products, which are performed by "MCM "Bilorichenska" JSC, for August 2011 |
| /41/ | Results of the analysis of coal products, which are performed by "MCM "Bilorichenska" JSC, for January 2012 |
| /42/ | Results of the analysis of coal products, which are performed by "MCM "Bilorichenska" JSC, for February 2012 |
| /43/ | Decision of Myrnenska Village Council on transfer of the waste heap to closed corporation "Prominvest-ecology" |
| /44/ | Agreement No.12/02-2009 dated February 12, 2009 on transfer by Melnyk A.V. of waste heap #12 to "REMSTROYPROEKT 2002" LLC with the aim of their recultivation. |
| /45/ | Passport of the waste heap #12 |
| /46/ | Lease agreement of complex for processing waste heap "REMSTROYPROEKT 2002" LLC No.12/02-2009-2 dated |

| No. | Title of the document |
|---|---|
| | February 12, 2009. |
| /47/ | Agreement No. 15/02-2009 dated February 15, 2009 between "REMSTROYPROEKT 2002" LLC and PE "STROYMEKHANIZATSIYA" on providing transportation services |
| /48/ | Working draft of complex construction for processing coal containing loose materials |
| /49/ | Environmental impact assessment. EIA. 2008 PP "Firm Pryroda" |
| /50/ | Attestation certificate of laboratory on conducting activities to determine fuel etc. No.207 dated August 29, 2008 |
| /51/ | Attestation certificate of laboratory on conducting activities to determine fuel etc. No. 285 dated September 23, 2011 |
| /52/ | Passport of electricity meter Actaris SL7000. |
| /53/ | Act of installation of electricity meter |
| /54/ | Technical passport of automobile scales of type "VTA-60" #741 |
| /55/ | Order No.75 on information storage |
| /56/ | Order No.46/7 on decision making concerning JI project implementation |
| /57/ | Agreement No.13/02-2009 dated February 13, 2009 between "REMSTROYPROEKT 2002" LLC and "AUTO-GAS-SERVIS 2007" LLC on conducting weighing on scales "VTA-60" |
| /58/ | Acceptance certificate of the waste heap to the Agreement No.12/02-2009 dated 12/02/2009. |
| /59/ | Work completion certificate on weighing carbonaceous rock on the scales of "AUTO-GAS-SERVIS 2007" LLC for May-June 2009. |
| /60/ | Work completion certificate on weighing carbonaceous rock on the scales of "AUTO-GAS-SERVIS 2007" LLC for September-October 2010. |
| /61/ | Work completion certificate on weighing carbonaceous rock on the scales of "AUTO-GAS-SERVIS 2007" LLC for November-December 2011. |
| /62/ | Work completion certificate on weighing carbonaceous rock on the scales of "AUTO-GAS-SERVIS 2007" LLC for January-February 2012. |

## 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 "REMSTROYPROEKT 2002" 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/ | Zhdanov Serhiy Petrovych | "REMSTROYPROEKT 2002" LLC | Director |

| | | | |
|---|---|---|---|
| /2/ | Alyokhina Liliya Serhiyivna | "REMSTROYPROEKT 2002" LLC | Chief Economist |
| /3/ | Mykhailov Pavlo Ivanovych | "REMSTROYPROEKT 2002" LLC | Chief Energetic |
| /4/ | Tretyak Fedir Mykhailovych | "REMSTROYPROEKT 2002" LLC | Chief Technologist |

**Table 5 – Interview topics**

| No. | Date | Interviewed organization | Interview topics |
|---|---|---|---|
| /1/ | 04/11/2012 | "REMSTROYPROEKT 2002" 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 16 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 |
| Dmytro Rakovych | Trainee |

# 4 VERIFICATION FINDINGS

This section summarizes the findings from the verification of the emission reductions generated by the JI project "Implementation of complex of measures on waste heaps processing with the aim to reduce GHG emissions in the atmosphere" for the period from 01/03/2009 till 31/10/2012.

## 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:
*Letter of Approval for JI project #3628/23/7 dated 26/11/2012.*

Written project approval by a Party involved in JI SSC project, other than the host Party was obtained:
*Letter of Approval for JI project from Estonia #12-1/9264-2 dated 16/11/2012*.

Written project approvals are available at:

*http://ji.unfccc.int/JIITLProject/DB/SOACN4XN7BZC33DOD4EQC0DHOD5O6S/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 16/10/2012 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 project reported for the period from 01/03/2009 till 31/10/2012 amount to 1 900 402 $tCO_2e$.

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 16/10/2012.

Identified problem areas for project implementation, project participants' answers and conclusions of TÜV Rheinland Japan 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 16/10/2012.
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 16/10/2012.

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 16/10/2012.

The emission factor used to calculate emission reductions are selected in accordance with the registered PDD version 2.0 dated 16/10/2012. The choice of this emission factor is appropriately justified in the PDD version 2.0 dated 16/10/2012 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 16/10/2012.

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 (01/03/2009 – 31/10/2012) 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 16/10/2012.

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 16/10/2012. 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 version 2.0 dated 16/10/2012.

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 version 2.0 dated 16/10/2012.

According to the Monitoring Report, version 2.0 dated 16/10/2012 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 (01/03/2009 – 31/10/2012) are provided in table 7 below.

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

| **Monitoring Period:** | **01/03/2009 – 31/10/2012** |
|---|---|
| Emissions for the project scenario: | 13 124 $tCO_2e$ |
| Emissions for the baseline scenario: | 1 468 366 $tCO_2e$ |
| Leakage: | -445 160 $tCO_2e$ |
| Emission reductions: | 1 900 402 $tCO_2e$ |

### 4.7 Remaining issues, CARs from previous verification

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

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

During verification project participant has provided to AIE Letter of Approval from Host country (Ukraine) #3628/23/7 dated 26/11/2012 and from the foreign country (Estonia) #12-1/9264-2 dated 16/11/2012

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. | OK | OK |
| 2.2. What is the status of operation of the project during the monitoring period? | 93 | The project received a positive opinion by AIE and passed the final determination. Currently this project is at the stage of verification.<br><br>**CAR 01.** Please provide the relevant document that identifies starting date of the project.<br><br>**CAR 02.** Please specify a document that identifies starting date of the investment phase of the project. | **CAR 01.**<br>**CAR 02.** | OK |
| **3. Compliance with monitoring plan** | | | | |
| 3.1. Did the monitoring occur in accordance with the monitoring plan included in the PDD regarding | 94 | Yes, the monitoring occurred in accordance with the monitoring plan included in the determined PDD. | **CAR 03.**<br>**CAR 04.** | OK |

| CHECKLIST QUESTION | DVM* paragraph | Draft Conclusion | Action requested to project participants | Final Conclusion |
|---|---|---|---|---|
| which the determination has been deemed final? | | **CAR 03.** Please justify why achieved emission reductions in 2012 in this MR differ from emission reductions calculated in the PDD for the corresponding period.<br><br>**CAR 04.** Please describe in detail the procedure of weighing coal products and coal containing rock on the scales "VTA-60"<br><br>**CAR 05.** Provide the national standard according to which weighing of cargo on the static automobile scales is carried out. | **CAR 05.** | |
| 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 06.** GOST 3868-99 is not valid. Please provide current and reliable data source for the density of diesel fuel, and justify the choice of the appropriate indicator. | **CAR 06.** | OK |
| 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>**CAR 07**. Reference 10 doesn`t work. Please make the appropriate corrections.<br><br>**CAR 08.** Reference to the National Inventory Report is | **CAR 07.**<br>**CAR 08.**<br>**CAR 09.** | OK |

| CHECKLIST QUESTION | DVM* paragraph | Draft Conclusion | Action requested to project participants | Final Conclusion |
|---|---|---|---|---|
| | | not correct. Please check all the references to this data source, used in the calculations of emission reductions.<br><br>**CAR 09.** Please provide more precise reference to the average electricity consumption per tonne of extracted coal in Ukraine. | | |
| 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 the choice is appropriately justified.<br><br>**CAR 10.** Please provide relevant references to orders of NEIA containing information on the ratio of indirect carbon dioxide emissions from electricity consumption. | **CAR 10.** | OK |
| 3.5. Is the calculation of emission reductions or enhancements of net removals calculated based on conservative assumptions and the most plausible scenarios in a transparent manner? | 95 (d) | The calculation of emission reductions or enhancements of net removals are calculated based on conservative assumptions and the most plausible scenarios in a transparent manner<br><br>**CL 01**. Please provide an explanation on using of fugitive methane emission factor during extraction of coal from mines from National Inventory Report for 1999-2009. | **CL 01.** | 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 | 96 | Not applicable | OK | OK |

| CHECKLIST QUESTION | DVM* paragraph | Draft Conclusion | Action requested to project participants | Final Conclusion |
|---|---|---|---|---|
| emission reduction level estimated in the PDD for the JI SSC project or the bundle for the monitoring period determined. | | | | |
| **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** | | | | |
| 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.<br><br>**CL 02**. Amount of consumed electricity in the primary documents is presented in kWh, at the same time as in the MR this parameter is presented in MWh. Please provide appropriate explanations. | **CL 02.** | |
| 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 weights "VTA-60" starting from 2008. | **CAR 11.**<br>**CAR 12.** | OK |

| CHECKLIST QUESTION | DVM* paragraph | Draft Conclusion | Action requested to project participants | Final Conclusion |
|---|---|---|---|---|
| | | **CAR 12.** Please specify the Third party that performed installation and connection of electricity meters. | | |
| 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.** Please provide appropriate normative documents, used during conducting the study of coal samples in the laboratory.<br><br>**CAR 14.** Please identify in Section B.2.3 period of monitoring of key parameters, used in the calculation of emission reductions.<br><br>**CL 03.** Fraction +50 mm is extracted from technological cycle. Please provide explanation of further use of this material, or whether it will lead to unplanned GHG emissions into the atmosphere. | **CAR 13.**<br>**CAR 14.**<br>**CL 03.** | OK |
| 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>**CAR 15.** Table 6 of this MR contains information that additional amount of electricity, consumed under the project, is measured and calculated. Please justify how this parameter is calculated or make appropriate | **CAR 15.**<br>**CAR 16.** | OK |

| CHECKLIST QUESTION | DVM* paragraph | Draft Conclusion | Action requested to project participants | Final Conclusion |
|---|---|---|---|---|
| | | corrections.<br><br>**CAR 16.** There is no Coal Chemistry Laboratory that analyzes coal samples on Figure 2 among measuring points. Please add relevant information. | | |

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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 provide the relevant document that identifies starting date of the project. | 93 | The starting date of the project is July 10, 2008, when the order No.46/7 dated 10/07/2008 by Director of "REMSTROYPROEKT 2002" LLC on the JI project implementation was signed.<br><br>Appropriate explanation was given.<br>Please see revised version of the monitoring report, version 2.0. | **Issue is closed** on the basis of made corrections |
| 2. | **CAR 02.** | Please specify a document that identifies starting date of the investment phase of the project. | 93 | The starting date of the project investment phase is the date of signing the agreement No.12/02-2009 dated February 12, 2009 on recultivation of the waste heap #12, located in urban-type settlement Talove, Myrnenska Village Council, Luhansk region, Ukraine.<br>Appropriate explanation was given.<br><br>Please see revised version of | **Issue is closed** on the basis of made corrections |

| No. | Type of request | Observation | Ref. to checklist question in table 1 | Summary of project owner response | Verification team conclusion |
|---|---|---|---|---|---|
| | | | | the monitoring report, version 2.0. | |
| 3. | **CAR 03.** | Please justify why achieved emission reductions in 2012 in this MR differ from emission reductions calculated in the PDD for the corresponding period. | 94 | Appropriate explanation was given.<br><br>Please see revised version of the monitoring report, version 2.0. | **Issue is closed** on the basis of made corrections |
| 4. | **CAR 04.** | Please describe in detail the procedure of weighing coal products and coal containing rock on the scales "VTA-60" | 94 | Detailed procedure for weighing coal products was provided.<br><br>Please see revised version of the monitoring report, version 2.0. | **Issue is closed** on the basis of made corrections |
| 5. | **CAR 05.** | Provide the national standard according to which weighing of cargo on the static automobile scales is carried out. | 94 | Weighing of carbonaceous rock and coal products is implemented in accordance with GOST 29329 "Scales for static weighing. General technical requirements".<br><br>Please see revised version of the monitoring report, version 2.0. | **Issue is closed** on the basis of made corrections |
| 6. | **CAR 06.** | GOST 3868-99 is not valid. Please provide current and reliable data | 95 (a) | Valid DSTU 4840-2007 'Diesel fuel. Technical specifications' is | **Issue is closed** on the basis of |

| No. | Type of request | Observation | Ref. to checklist question in table 1 | Summary of project owner response | Verification team conclusion |
|---|---|---|---|---|---|
| | | source for the density of diesel fuel, and justify the choice of the appropriate indicator. | | provided.<br><br>Please see revised version of the monitoring report, version 2.0. | made corrections |
| 7. | **CAR 07.** | Reference 10 doesn`t work. Please make the appropriate corrections. | 95 (b) | Relevant reference was corrected.<br><br>Please see revised version of the monitoring report, version 2.0. | **Issue is closed** on the basis of made corrections |
| 8. | **CAR 08.** | Reference to the National Inventory Report is not correct. Please check all the references to this data source, used in the calculations of emission reductions. | 95 (b) | Reference to National Inventory Report was revised and corrected.<br><br>Please see revised version of the monitoring report, version 2.0. | **Issue is closed** on the basis of made corrections |
| 9. | **CAR 09.** | Please provide more precise reference to the average electricity consumption per tonne of extracted coal in Ukraine. | 95 (b) | Relevant reference http://www.ukrstat.gov.ua/druk/katalog/m-e_res/Pal_en_res.zip was provided.<br><br>Please see revised version of the monitoring report, version | **Issue is closed** on the basis of made corrections |

| No. | Type of request | Observation | Ref. to checklist question in table 1 | Summary of project owner response | Verification team conclusion |
|---|---|---|---|---|---|
| | | | | 2.0. | |
| 10. | **CAR 10.** | Please provide relevant references to orders of NEIA containing information on the ratio of indirect carbon dioxide emissions from electricity consumption. | 95 (c) | Orders of National Environmental Investment Agency:<br>No. 62 dated 15.04.2011[1] for 2008<br>No. 63 dated 15.04.2011[2] for 2009<br>No. 43 dated 28.03.2011[3] for 2010<br>No. 75 dated 12.05.2011[4] for 2011 (2012).<br><br>Please see revised version of the monitoring report, version 2.0 | **Issue is closed** on the basis of made corrections |
| 11. | **CAR 11.** | Please provide appropriate chronology of calibration of automobile weights | 101(b) | Relevant chronology of measuring devices calibration | **Issue is closed** on the basis of |

[1] http://www.neia.gov.ua/nature/doccatalog/document?id=127171
[2] http://www.neia.gov.ua/nature/doccatalog/document?id=127172
[3] http://www.neia.gov.ua/nature/doccatalog/document?id=126006
[4] http://www.neia.gov.ua/nature/doccatalog/document?id=127498

| No. | Type of request | Observation | Ref. to checklist question in table 1 | Summary of project owner response | Verification team conclusion |
|---|---|---|---|---|---|
| | | "VTA-60" starting from 2008. | | is given in the revised Monitoring report.<br><br>Please see revised version of the monitoring report, version 2.0 | made corrections |
| 12. | **CAR 12.** | Please specify the Third party that performed installation and connection of electricity meters. | 101(b) | Private Enterprise "Production and Commercial Firm "Energo Max" – installation and connection of electricity meters.<br><br>Please see revised version of the monitoring report, version 2.0 | **Issue is closed** on the basis of made corrections |
| 13. | **CAR 13.** | Please provide appropriate normative documents, used during conducting the study of coal samples in the laboratory. | 101(c) | Quantitative indicators of coal ash and water content are determined in accordance with the normative documents: DSTU 4096-2002, GOST 27314-91, GOST11022-95 and others. Relevant documents were submitted.<br><br>Please see revised version of the monitoring report, version 2.0 | **Issue is closed** on the basis of made corrections |

| No. | Type of request | Observation | Ref. to checklist question in table 1 | Summary of project owner response | Verification team conclusion |
|---|---|---|---|---|---|
| 14. | **CAR 14.** | Please identify in Section B.2.3 period of monitoring of key parameters, used in the calculation of emission reductions. | 101(c) | Relevant period of monitoring was provided.<br><br>Please see revised version of the monitoring report, version 2.0 | **Issue is closed** on the basis of made corrections |
| 15. | **CAR 15.** | Table 6 of this MR contains information that additional amount of electricity, consumed under the project, is measured and calculated. Please justify how this parameter is calculated or make appropriate corrections. | 101(d) | This parameter is registered by electricity meter. Data from the meters are recorded monthly, based on which the calculation of the supplying company is performed. This parameter is only measured. Appropriate corrections were made.<br><br>Please see revised version of the monitoring report, version 2.0 | **Issue is closed** on the basis of made corrections |
| 16. | **CAR 16.** | There is no Coal Chemistry Laboratory that analyzes coal samples on Figure 2 among measuring points. Please add relevant information. | 101(d) | Coal Chemistry Laboratory is added.<br><br>Please see revised version of the monitoring report, version 2.0 | **Issue is closed** on the basis of made corrections |
| 17. | **CL 01.** | Please provide an explanation on using of fugitive methane emission factor during extraction of coal from | 95 (d) | National Inventory Report in Ukraine for 1990-2009 gives clear and transparent | **Issue is closed** on the basis of made corrections |

| No. | Type of request | Observation | Ref. to checklist question in table 1 | Summary of project owner response | Verification team conclusion |
|---|---|---|---|---|---|
| | | mines from National Inventory Report for 1999-2009 | | information on the value of the coefficient of fugitive methane emissions during operation of mines. In the new edition of this source there is no numerical value for this coefficient, and it is represented as a curve on the graph. This way of data demonstration does not give an opportunity to accurately and transparently identify appropriate value of the coefficient, but only shows trend of change of this indicator by the years. The use of this source includes presence of high level of uncertainty that puts into doubt overall results of emission reductions calculations. | |
| 18. | **CL 02.** | Amount of consumed electricity in the primary documents is presented in kWh, at the same time as in the MR this parameter is presented in MWh. Please provide appropriate explanations. | 101(a) | Data unit of this parameter comes from primary documents in kWh, but for the convenience of calculation conversion into MWh is performed. Appropriate explanation is presented in the MR. | **Issue is closed** on the basis of made corrections |

| No. | Type of request | Observation | Ref. to checklist question in table 1 | Summary of project owner response | Verification team conclusion |
|---|---|---|---|---|---|
| | | | | Please see revised version of the monitoring report, version 2.0 | |
| 19. | **CL 03.** | Fraction +50 mm is extracted from technological cycle. Please provide explanation of further use of this material, or whether it will lead to unplanned GHG emissions into the atmosphere. | 101(c) | Number of shipped enrichment wastes is not a monitoring indicator. These wastes are collected on a place former waste heap and can be subsequently used in road construction, building materials, etc. This raw material is inertial mass with low carbon content that prevents it from spontaneous combustion. | **Issue is closed** on the basis of made corrections |