



**BUREAU  
VERITAS**

# VERIFICATION REPORT “SKHIDENERGO” LTD

## VERIFICATION OF THE “RECONSTRUCTION OF THE UNITS AT THE STRUCTURE UNIT “LUHANSKAYA TPP” OF THE “SKHIDENERGO” LTD.”

(SECOND PERIODIC VERIFICATION 01/01/2010-31/03/2011)

REPORT No. UKRAINE-VER/0252/2011

REVISION No. 02

BUREAU VERITAS CERTIFICATION



## VERIFICATION REPORT RECONSTRUCTION OF THE UNITS AT THE STRUCTURE

## UNIT "LUHANSKAYA TPP" OF THE "SKHIDENERGO" LTD.

Date of first issue: 18/04/2011	Organizational unit: Bureau Veritas Certification Holding SAS
Client: "Skhidenergo" Ltd	Client ref.: Oleksii Mikhailov

## Summary:

Bureau Veritas Certification has made the 2<sup>nd</sup> periodic verification of the "Reconstruction of the units at the Structure Unit "Luhanskaya TPP" of the "Skhidenergo" Ltd.", JI Registration Reference Number UA 1000206, project of "Skhidenergo" Ltd located in Schastye town, Luhansk Region, Ukraine and applying the JI specific approach, on the basis of UNFCCC criteria for the JI, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 6 of the Kyoto Protocol, the JI rules and modalities and the subsequent decisions by the JI Supervisory Committee, as well as the host country criteria.

The verification scope is defined as a periodic independent review and ex post determination by the Accredited Entity of the monitored reductions in GHG emissions during defined verification period, and consisted of the following three phases: i) desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification report and opinion. The overall verification, from Contract Review to Verification Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

The first output of the verification process is a list of Clarification, Corrective Actions Requests, Forward Actions Requests (CR, CAR and FAR), presented in Appendix A.

In summary, Bureau Veritas Certification confirms that the project is implemented as planned and described in approved project design documents. Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately. The monitoring system is in place and the project is generating GHG emission reductions. The GHG emission reduction is calculated accurately and without material errors, omissions, or misstatements, and the ERUs issued totalize 273322 tons of CO<sub>2</sub>eq for the monitoring period from 01/01/10 to 31/03/2011.

Our opinion relates to the project's GHG emissions and resulting GHG emission reductions reported and related to the approved project baseline and monitoring, and its associated documents.

Report No.: UKRAINE-ver/0252/2011	Subject Group: JI
Project title: Reconstruction of the units at the Structure Unit "Luhanskaya TPP" of the "Skhidenergo" Ltd.	
Work carried out by: Oleg Skoblyk – Team Leader, Lead Verifier Vyacheslav Yeriomin – Team Member, Verifier Trainee	
Work reviewed by: Ivan Sokolov - Internal Technical Reviewer	
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Work approved by: Flavio Gomes - Operational Manager	
Date of this revision: 25/05/2011	Rev. No.: 02
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UNIT "LUHANSKAYA TPP" OF THE "SKHIDENERGO" LTD.

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## 1 INTRODUCTION

"Skhidenergo" Ltd has commissioned Bureau Veritas Certification to verify the emissions reductions of its JI project "Reconstruction of the units at the Structure Unit "Luhanskaya TPP" of the "Skhidenergo" Ltd." (hereafter called "the project") at Schastye town, Luhansk Region, Ukraine.

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

### 1.1 Objective

Verification is the periodic independent review and ex post determination by the Accredited Independent Entity of the monitored reductions in GHG emissions during defined verification period.

The objective of verification can be divided in Initial Verification and Periodic Verification.

UNFCCC criteria refer to Article 6 of the Kyoto Protocol, the JI rules and modalities and the subsequent decisions by the JI Supervisory Committee, as well as the host country criteria.

### 1.2 Scope

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

The verification is not meant to provide any consulting towards the Client. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project monitoring towards reductions in the GHG emissions.

### 1.3 Verification Team

The verification team consists of the following personnel:

Oleg Skoblyk

Bureau Veritas Certification Team Leader, Climate Change Verifier

Vyacheslav Yeriomin

Bureau Veritas Certification Team member, Climate Change Verifier Trainee

This verification report was reviewed by:



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VERIFICATION REPORT RECONSTRUCTION OF THE UNITS AT THE STRUCTURE  
UNIT "LUHANSKAYA TPP" OF THE "SKHIDENERGO" LTD.

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Ivan Sokolov  
Bureau Veritas Certification, Internal Technical Reviewer

## **2 METHODOLOGY**

The overall verification, from Contract Review to Verification Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

In order to ensure transparency, a verification protocol was customized for the project, according to the version 01 of the Joint Implementation Determination and Verification Manual, issued by the Joint Implementation Supervisory Committee at its 19 meeting on 04/12/2009. The protocol shows, in a transparent manner, criteria (requirements), means of verification and the results from verifying the identified criteria. The verification protocol serves the following purposes:

- It organizes, details and clarifies the requirements a JI project is expected to meet;
- It ensures a transparent verification process where the verifier will document how a particular requirement has been verified and the result of the verification.

The completed verification protocol is enclosed in Appendix A to this report.

### **2.1 Review of Documents**

The Monitoring Report (MR) submitted by JSC "ELTA" and additional background documents related to the project design and baseline, i.e. country Law, Project Design Document (PDD), Approved CDM methodology (if applicable) and/or Guidance on criteria for baseline setting and monitoring, Host party criteria, Kyoto Protocol, Clarifications on Verification Requirements to be Checked by an Accredited Independent Entity were reviewed.

The verification findings presented in this report relate to the Monitoring Report versions 1.0, 1.1, 1.2 and project as described in the determined PDD version 2.2 dated 18.01.2010.

### **2.2 Follow-up Interviews**

On 26/04/2011 Bureau Veritas Certification performed on-site interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of "Skhidenergo" Ltd were interviewed (see References). The main topics of the interviews are summarized in Table 1.

**Table 1 Interview topics**

Interviewed organization	Interview topics
"Skhidenergo" Ltd	Organizational structure Responsibilities and authorities Roles and responsibilities for data collection and processing Installation of equipment Data logging, archiving and reporting Metering equipment control Metering record keeping system, database Training of personnel Quality management procedures and technology Internal audits and check-ups
JSC "ELTA"	Monitoring plan Monitoring report Deviations from PDD ERUs calculation model

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

The objective of this phase of the verification is to raise the requests for corrective actions and clarification and any other outstanding issues that needed to be clarified for Bureau Veritas Certification positive conclusion on the GHG emission reduction calculation.

If the Verification Team, 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:

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





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To guarantee the transparency of the verification process, the concerns raised are documented in more detail in the verification protocol in Appendix A.

### **3 VERIFICATION CONCLUSIONS**

In the following sections, the conclusions of the verification are stated.

The findings from the desk review of the original monitoring documents and the findings from interviews during the follow up visit are described in the Verification Protocol in Appendix A.

The Clarification, Corrective and Forward Action Requests are stated, where applicable, in the following sections and are further documented in the Verification Protocol in Appendix A. The verification of the Project resulted in 7 Corrective Action Requests.

The number between brackets at the end of each section corresponds to the DVM paragraph.

Two FARs were remaining from previous verification and they were closed during this verification.

FAR1: Please photograph every stages of unit reconstruction.

Response: Commissioning acts were presented see references /157/-/165/ of category 2 documents.

Decision: Evidences were sufficient and FAR1 was closed.

FAR2: Please make sure that all journals and logbooks of fuel consumption and power generation will be archived and saved during Project period.

Response: Order on the data archiving for the period of two years after the last emission reduction transfer was presented, see reference /155/ of category 2 documents.

Decision: Evidence was sufficient and FAR2 was closed.

#### **3.1 Project approval by Parties involved (90-91)**

Written project approval by the Host Party has been issued by the National Environmental Investment Agency of Ukraine (#752/23/07 dated 09.06.2010). Letter of Approval by the UK Department of Energy and Climate Change #CFCarbonII/01/2010 dated 03.12.2010.

The abovementioned written approvals are unconditional.

#### **3.2 Project implementation (92-93)**



## VERIFICATION REPORT RECONSTRUCTION OF THE UNITS AT THE STRUCTURE

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Luhanskaya TPP exploited by energy generating company Skhidenergo ltd. Installed power capacity of the Luhanskaya TPP is 1400 MW. All energy equipment was installed in the 1960's. The list of installed equipment:

- boilers TP-100 (Ep-140-640G) (units ## 9-13); boilers TP-100A (units ##14-15), produced by the Taganrog boiler factory;
- turbines K-210-130-1, produced by the "Leningrad metal works";
- power generators TGV-200, produced by the "Kharkov SPC Electrotyazhmash" (units ## 9-13);
- power generators TGV-200M, produced by the "Kharkov SPC Electrotyazhmash" (units ##14-15).

Main, (reserve) fuel - coal, (heavy fuel oil / natural gas).

The Unit #8 is written-off.

Project foresees modernization of the main and the auxiliary equipment of the all power generating units of the TPP according to the attached schedule.

During the monitoring period 01.01.2010-31.03.2011 next measures were completed:

**Generating Unit № 9:**

- 1) Capital repairs of the mill Sh-50 at the Unit #9.
- 2) The replacement of the outlet stair "ducks" at the 2-nd steam heater (Sh1;4).
- 3) The replacement of the fittings, heavy fuel oil safety valves, continuous boiler blowing control unit, 100-E valves and the circuit drainage water economizer;
- 4) The repairs of the Raw Coal Bunker with the blinker replacement;
- 5) The repairs of the right horizontal gas path with compensators. Repairs of the gas-air discharges and the boxes with the replacement of the defective parts;
- 6) The replacement of the screen overheater;
- 7) Repairs of the scrubbers' lining (cylindrical surface);
- 8) USI for the mikrodefects of the high- and mid- pressure cylinders' tubes;
- 9) The replacement of the high- and low- pressure tubes at the turbine department;
- 10) The factory repair of the 9A Electric Feed Pump;
- 11) The replacement of the heating section #5 ISV-350;
- 12) The repairs of the 9U Electric Feed Pump with the inner casing replacement;
- 13) The replacement of the oil pump of the Electric Feed Pump.
- 14) The replacement of the circulating water tubes of the turbine;
- 15) The replacement of the HPC electric motor;
- 16) The replacement of the electric motor of the servomotor;
- 17) The replacement of the freezer;



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- 18) The replacement of the electric motor of the Dust Exhauster oil station;
- 19) The repairs of the main burners at the 1 – 4 shafts with the primary and tertiary air tubes replacement;
- 20) The VVN-220 KV contacts replacement;
- 21) Construction and replacement of the right horizontal gas-flow with the compensators;
- 22) The repairs of the Cold-Convactor steam Superheater packages with the shell restoration;

**Generating Unit № 10:**

- 1) The hot overheating pipelines turns examination – 10 units; the examination of the High-Pressure Cylinder and the Mid-Pressure Cylinder tubes;
- 2) The production of the ## 1-5 scrubbers' housings and the metal frameworks;
- 3) The replacement of the circulating water pipelines (21,5 tons.);
- 4) The repairs of the High-Pressure Heater (3 units);
- 5) The steam pipelines cleaning 6020 dm<sup>2</sup>.

**Generating Unit № 11:**

- 1) The major overhaul of the flow part of the Low-Pressure Cylinder at the DO-200-130 "LMZ" turbine with the replacement of the end and diaphragm seals and the Low-Pressure Rotor placement;
- 2) The major overhaul of the Sh-50 mill;
- 3) The inspection of the steam pipelines: live steam – 3 units; hot overheat – 8 units; flow pipelines of the High-Pressure Cylinder and the Mid-Pressure Cylinder – 4 units. Disassembling and the recovery of the thermal insulation;
- 4) The micro damages' inspection of the screen-type steam overheater flow tube turns. Disassembling and the recovery of the thermal insulation;
- 5) The trimming of the control groups of the turns at the non-heated zone. The trimming of the flow pipelines of the exhaust collector to the steam-taking camera. The trimming of the live steam and the hot overheating steam pipelines. Disassembling and the recovery of the thermal insulation;
- 6) The repairs of the Dust Exhauster #A,B outputs of the gas-air pipelines and boxes, high-pressure gas pipelines with the replacement of the defective parts. Disassembling and the recovery of the thermal insulation;
- 7) The replacement of the fittings, oil safety valves continuous boiler blowing control unit, 100-E valves and the circuit drainage water economizer;
- 8) The repairs of the scrubbers' lining (cylindrical surface);
- 9) The factory repairs of the Vertical Condenser Pump;
- 10) The replacement of the generator water sealing;
- 11) The replacement of the turbogenerator bearing shells #4,5;

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- 12) The replacement of the circulating water pipelines at the turbine;
- 13) The replacement of the electric motor VPV11A.
- 14) The repairs of the Dust Exhauster rotors;
- 15) The replacement of the MNU oil pump;
- 16) The replacement of the driving gear and the Ball Drum Mill;
- 17) The replacement of the boiler control valve;
- 18) The replacement of the Dust Exhausters outputs;
- 19) Disassembling and the recovery of the thermal insulation of the boiler equipment;
- 20) The replacement of the rotor parts;

**Generating Unit № 13:**

- 1) The major overhaul of the Sh-50 mill;
- 2) The replacement of the exhauster electric motors;
- 3) The micro damages' inspection of the screen-type steam overheater flow tube turns. Disassembling and the recovery of the thermal insulation;
- 4) The trimming of the control groups of the turns at the non-heated zone;
- 5) The replacement of the turns at the non-heated zone D108x11. Disassembling and the recovery of the thermal insulation;
- 6) The replacement of the fittings, heavy fuel oil safety valves, continuous boiler blowing control unit, 100-E valves and the circuit drainage water economizer;
- 7) Technical diagnostic of the high-pressure heater 5,6,7 – cases and the pipeline part;
- 8) The repairs of the turbogenerator sealing scheme with the mounting of the three-way valve; pipelines' and stop valves replacement;
- 9) The replacement of the catch, accept High-Pressure heater Du -250;
- 10) The replacement of the turbine circulating water pipelines;
- 11) The replacement of the Raw Coal Bunker electric motor 1B,2B.
- 12) The replacement of the outlet stair "ducks" at the 2-nd steamheater of the shafts №1,2,3 of the TP-100 boiler;
- 13) The replacement of the 100-E catch;
- 14) The replacement of the Dust exhauster armour;
- 15) The repairs of the Clinker Removal System;
- 16) The replacement of the turbogenerator axial-flow fan blades (50 units);
- 17) The replacement of 2 electric motors on the regenerative air cooler A;
- 18) The replacement of the under-binding isolation at the turbogenerator rotor;
- 19) The replacement of the insulator at the connector of the block jack;

**Generating Unit № 14:**

- 1) The major overhaul of the Sh-50 mill;
- 2) The replacement of the fittings, heavy fuel oil safety valves, continuous boiler blowing control unit, 100-E valves and the circuit drainage water economizer;

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- 3) Technical diagnostic of the A and B deaerators;
- 4) The replacement of the High-Pressure Heater feed water drainages;
- 5) The repairs of the PN-100 heating section with the tubes replacement;
- 6) The replacement of the in/out fittings' electric drives, accept High-Pressure Heater 5,6,7.
- 7) The replacement of the GPZ №1,2 electric drives;
- 8) The replacement of the turbogenerator drainages;
- 9) The replacement of the catch at the High-Pressure Heater -5 and High-Pressure Heater -4 Du-150;
- 10) The repairs of the 14A Electric Feed Pump;
- 11) The replacement of the bearing shells №1,2 with the recharge;
- 12) The replacement of the circulating water pipelines at the turbine;
- 13) The replacement of the 14TSN fan;
- 14) The replacement of the 14T fan;
- 15) The replacement of the turbine oil cooler (parts 63-90);
- 16) The replacement of the active energy meters;

**Generating Unit № 15:**

- 1) The major overhaul of the Sh-50 mill;
- 2) The replacement of the overhead steam overheater above the Sh№1-4 furnace;
- 3) The repairs of the cyclones and separators; The replacement of the live steam turns 325x38 (from the Unit №12) – 4 units;
- 4) The replacement of the fittings, heavy fuel oil safety valves, continuous boiler blowing control unit, 100-E valves and the circuit drainage water economizer;
- 5) The replacement of the high- and low- pressure fittings at the turbine equipment;
- 6) The repairs of the Low-Pressure Cylinder with the low-pressure rotor inspection and repairs;
- 7) The replacement of the ISV №6 heating section;
- 8) The replacement of the bearing shells №3,5,6 with the recharge;
- 9) The repairs of the Low-Pressure Cylinder end seals with the ring segments replacement;
- 10) The replacement of the straight parts of the circulating water pipelines of the turbine;
- 11) The repairs of the DV rotor;
- 12) The replacement of the generator bushing;
- 13) The repairs of the thermal-mechanical equipment of the electric filters;
- 14) The replacement of the oil sealing at the flow part of the turbine;
- 15) The replacement of the VPV electric motor;
- 16) The replacement ROU-2 catch;
- 17) The replacement of the 4,984 tons of the screens;
- 18) The replacement of the end input of the generator;
- 19) The repairs of the cyclones and the dust separators;



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As the result of the foregoing measures, the average Specific Fuel Rate of the energy supplied by the TPP lowered from 0.4379 tef/MWh (12.8305 GJ/MWh) in the Baseline Scenario to 0.4262 tef/MWh (12.4877 GJ/MWh) in 2010.

### **3.3 Compliance of the monitoring plan with the monitoring methodology (94-98)**

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.

For calculating the emission reductions or enhancements of net removals, key factors, 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 were taken into account, as appropriate.

Data sources used for calculating emission reductions or enhancements of net removals are clearly identified, reliable and transparent.

Emission factors, including default emission factors, are selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice.

The calculation of emission reductions or enhancements of net removals is based on conservative assumptions and the most plausible scenarios in a transparent manner.

### **3.4 Revision of monitoring plan (99-100)**

"Not applicable"

### **3.5 Data management (101)**

The data and their sources, provided in monitoring report, are clearly identified, reliable and transparent.

The implementation of data collection procedures is in accordance with the monitoring plan, including the quality control and quality assurance procedures.

The function of the monitoring equipment, including its calibration status, is in order. The monitoring equipment is within its calibration interval.

Calibration of majority part main electric meters carried out by State Enterprise "Luhanskderzhstandartmetrologiia". Some electric meters were calibrated by SE "Donetskderzhstandartmetrologiia".

Duplicate electric meters were calibrated by producing companies "Elstermetronica" or "Telekartpribor".

Coal conveyor scales were calibrated by State Enterprise "Luhanskderzhstandartmetrologiia".



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The heavy fuel oil consumption per period is defined by the stationary measuring instrument (log scale), which is mounted on the each heavy fuel oil tank in accordance with the project. According to the calibration table of the each tank, the heavy fuel oil level, measured with the log scale, is evaluated into the heavy fuel oil level in tons. The difference between the levels, measured at the beginning and the end of the period, shows the heavy fuel oil consumption in the period.

The natural gas consumption is measured by the meter, which is mounted at the AGDS owned by the "Luhanskgas" Company and fixed by signing by the Luhanskaya TPP, "Luhanskgas" Company a monthly act

The evidence and records used for the monitoring are maintained in a traceable manner.

The main parameters of the Station are measured by the meters and shown in graphs in a real time. The data of the fuel consumption is measured and collected for the whole TPP and the energy produced is measured per each unit separately. This allows to measure the average emission for all the TPP and to see the influence of the Project activity while some of the units are out of operation.

All the starts and stops of each Unit are monitored and also shown in the technical documentation alongside with the working time hours for each Unit of the TPP.

That means, that even when some unit is out of the operation, all the measures continue to be collected and the overall project emission is still being calculated. All the calibrations and checks of the equipment are also documented

The electricity supply is being monitored by the Electricity Department of the TPP at the central electric panel of the TPP.

The coal consumption is being monitored daily by the Fuel-Transport Department.

The heavy fuel oil consumption is being monitored daily by the Boiler-Turbine Department of the TPP.

The natural gas consumption is being monitored by the Gas Distribution System.

The data of the Net Caloric Value of the fuel is being provided by the certified laboratory of the TPP daily.

The Technical Production Department collects all the data and calculate the Specific Fuel Rate daily. After that, the data is being summarized in the monthly reports and in the annual report called "3-tech" Form.

All the measures are being sent to the project manager of the "ELTA" company, who collects the data, calculates the emission, emission reductions and creates a monitoring report.

All the data shall be stored in the paper and electronic form at the TPP and in the data base of the "ELTA" company during two years after the end of crediting period.



## VERIFICATION REPORT RECONSTRUCTION OF THE UNITS AT THE STRUCTURE

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The data collection and management system for the project is in accordance with the monitoring plan.

Mr. Oleksii Mikhailov, senior specialist of Generating Department "Skhidenergo" Ltd, is responsible for the implementation and management of the monitoring process at the structure units in "Skhidenergo" Ltd.

Mr. Oleksandr Maslov, Head of Luhanskaya TPP Producing-Technical Department is responsible for project data collection.

Mr. Maksim Rohovoi, vice-director of "ELTA" JSC, is responsible for JI-project specific baseline and monitoring methodology development.

### **3.6 Verification regarding programmes of activities (102-110)**

"Not applicable"

## **4 VERIFICATION OPINION**

Bureau Veritas Certification has performed the 3<sup>rd</sup> periodic verification of the "Reconstruction of the units at the Structure Unit "Luhanskaya TPP" of the "Skhidenergo" Ltd." Project in Ukraine which applies the JI specific approach. The verification was performed on the basis of UNFCCC criteria and host country criteria and also on the criteria given to provide for consistent project operations, monitoring and reporting.

The verification consisted of the following three phases: i) desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification report and opinion.

The management of "Skhidenergo" Ltd is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions of the project on the basis set out within the project Monitoring and Verification Plan indicated in the final PDD version 2.2. The development and maintenance of records and reporting procedures in accordance with that plan, including the calculation and determination of GHG emission reductions from the project, is the responsibility of the management of the project.

Bureau Veritas Certification verified the Project Monitoring Report version 1.1 for the reporting period as indicated below. Bureau Veritas Certification confirms that the project is implemented as planned and described in approved project design documents. Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately. The monitoring system is in place and the project is generating GHG emission reductions.

Bureau Veritas Certification can confirm that the GHG emission reduction is accurately calculated and is free of material errors, omissions, or





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misstatements. Our opinion relates to the project's GHG emissions and resulting GHG emissions reductions reported and related to the approved project baseline and monitoring, and its associated documents. Based on the information we have seen and evaluated, we confirm, with a reasonable level of assurance, the following statement:

Reporting period: From 01/01/2010 to 31/03/2011

Baseline emissions	: 8396394	t CO <sub>2</sub> equivalents.
Project emissions	: 8123072	t CO <sub>2</sub> equivalents.
Emission Reductions	: 273322	t CO <sub>2</sub> equivalents.



## 5 REFERENCES

### Category 1 Documents:

Documents provided by "Skhidenergo" Ltd that relate directly to the GHG components of the project.

- /1/ Project Design Document "Reconstruction of the units at the Structure Unit "Luhanskaya TPP" of the "Skhidenergo" ltd." version 2.2 dated 18/01/2010
- /2/ Monitoring Report "Reconstruction of the units at the Structure Unit "Luhanskaya TPP" of the "Skhidenergo" ltd." version 1.0 dated 01/04/2011
- /3/ Monitoring Report "Reconstruction of the units at the Structure Unit "Luhanskaya TPP" of the "Skhidenergo" ltd." version 1.1 dated 28/04/2011
- /4/ Monitoring Report "Reconstruction of the units at the Structure Unit "Luhanskaya TPP" of the "Skhidenergo" ltd." version 1.2 dated 06/05/2011
- /5/ Determination and verification manual, version 1.0
- /6/ Letter of Approval issued by the National Environmental Investment Agency of Ukraine # 752/23/07 dated 09/06/2010
- /7/ Letter of Approval issued by the UK Department of Energy and Climate Change #CFCarbonII/01/2010 dated 3/12/2010
- /8/ ERUs calculation model Exel file "monitoring Lu Ver 1.2"

### Category 2 Documents:

Background documents related to the design and/or methodologies employed in the design or other reference documents.

- /1/ Form 3тex on equipment operation technical and economic parameters at Luhanska Thermal Power Plant for January-February 2011
- /2/ Form 3тex on equipment operation technical and economic parameters at Luhanska Thermal Power Plant for January-December 2010
- /3/ Form 3тex on equipment operation technical and economic parameters at Luhanska Thermal Power Plant for January 2011
- /4/ Form 3тex on equipment operation technical and economic parameters at Luhanska Thermal Power Plant for February 2011
- /5/ Form 3тex on equipment operation technical and economic parameters at Luhanska Thermal Power Plant for March 2011
- /6/ Photo: Power meter Elster-Metronica type 05RL-C-3, serial #01 147 055
- /7/ Photo: Power meter Elster-Metronica type EA02RAL-P4C-W4, №01 198 743
- /8/ Photo: Power meters Elster-Metronica type EA02RAL-P4C-W4, №01 198 727 and type EA02RAL-C-4, №011 470 78
- /9/ Photo: Power meters Elster-Metronica type EA02RAL-P4C-W4, №01 198 738 and type EA02RAL-C-4, №011 470 61
- /10/ Photo: Power meters Elster-Metronica type EA02RAL-P4C-W4, №01 198 741
- /11/ Photo: Power meters Elster-Metronica type EA02RAL-C-4, №01 147 031
- /12/ Photo: Power meters Elster-Metronica type EA02RAL-C-4, №01 147 056
- /13/ Photo: Power meter Elster-Metronica type EA02RAL-P4C-W4, №01 198 740
- /14/ Photo: Power meter Elster-Metronica type EA02RAL-P4C-W4, №01 198 745
- /15/ Photo: Power meter Elster-Metronica type EA02RAL-C-4, №011 470 63 and



## VERIFICATION REPORT RECONSTRUCTION OF THE UNITS AT THE STRUCTURE

## UNIT "LUHANSKAYA TPP" OF THE "SKHIDENERGO" LTD.

- type EA02RAL-C-4, №011 470 31
- /16/ Photo: Power meters Elster-Metronica type EA02RAL-P4C-W4, №01 198 718 and type EA02RAL-P4C-W4, №01 198 741
- /17/ Photo: Power meter Elster-Metronica type EA02RAL-C-4, №01 147 087
- /18/ Photo: Power meters Elster-Metronica type EA02RAL-C-4, №01 147 075, EA02RAL-C-4, №01 147 071, EA02RAL-C-4, №01 147 038
- /19/ Photo: Power meters Elster-Metronica type EA02RAL-P4C-W4 №01 198 739, EA02RAL-P4C-W4 №01 198 729, EA02RAL-P4C-W4 №01 198 744
- /20/ Photo: Power meters Elster-Metronica type EA02RAL-P4C-W4 №01 198 735, and type EA02RAL-C-4 №01 147 060
- /21/ Photo: Power meters Elster-Metronica type EA02RAL-P4C-W4 №01 198 721, and type EA02RAL-C-4 №01 147 059
- /22/ Photo: Power meters Elster-Metronica type EA02RAL-P4C-W4 №01 198 736, and type EA02RAL-C-4 №01 147 092
- /23/ Photo: Power meter Elster-Metronica type EA02RAL-P4C-W4 №01 198 737
- /24/ Photo: Power meter Elster-Metronica type EA02RAL-P4C-W4 №01 198 722
- /25/ Photo: Power meters Elster-Metronica type EA02RAL-P4C-W4 №01 198 728
- /26/ Photo: Power meter Elster-Metronica type EA02RAL-P4C-W4 №01 198 724
- /27/ Photo: Power meter Elster-Metronica type EA02RAL-P4C-W4 №01 198 732
- /28/ Photo: Power meter type SL 7000 № 36043254
- /29/ Photo: Power meter Elster-Metronica type EA02RAL-P4C-4W №01 198 726
- /30/ Photo: Power meter Elster-Metronica type EA02RAL-C-4, №01 147 057
- /31/ Photo: Power meter Elster-Metronica type EA02RAL-C-4, №01 147 050
- /32/ Photo: Power meter Elster-Metronica type EA02RAL-C-4, №01 147 030
- /33/ Photo: Power meter Elster-Metronica type EA02RAL-P4C-W4 №01 198 719
- /34/ Photo: Power meter Elster-Metronica type EA02RAL-P4C-W4 №01 198 720
- /35/ Photo: Power meters Elster-Metronica type EA02RAL-P4C-W4 №01 198 725
- /36/ Photo: Power meters Elster-Metronica type EA02RAL-P4C-W4 №01 198 725
- /37/ Photo: Power meters Elster-Metronica type EA02RAL-C-4, №01 147 086
- /38/ Photo: Power meters Elster-Metronica type EA02RAL-C-4, №01 147 073
- /39/ Photo: Power meter Elster-Metronica type EA02RAL-C-4, №01 147 066
- /40/ Photo: Power meter Elster-Metronica type EA02RAL-P4C-W4 №01 198 746
- /41/ Photo: Power meter Elster-Metronica type EA02RAL-P4C-W4 №01 198 748
- /42/ Photo: Power meter Elster-Metronica type EA02RAL-C-4, №01 147 091
- /43/ Photo: Power meter Elster-Metronica type EA02RAL-C-4, №01 147 049
- /44/ Photo: Power meter Elster-Metronica type EA02RAL-C-4, №01 147 034
- /45/ Photo: Power meter type SL 7000 № 36043255
- /46/ Photo: Power meter type SL 7000 № 36043252
- /47/ Photo: Power meters Elster-Metronica type EA02RAL-P4C-W4 №01 198 717, and type EA02RAL-C-4 №01 147 043
- /48/ Photo: Power meters Elster-Metronica type EA02RAL-P4C-W4 №01 198 730, and type EA02RAL-C-4 №01 147 043
- /49/ Photo: Conveyor belt scales Ramsey-14, line A
- /50/ Photo: Conveyor belt scales Ramsey-14, line B
- /51/ Photo: Micro-Tech 2000 remote digital detectors
- /52/ Photo: Micro-Tech 2000 remote digital detector



## VERIFICATION REPORT RECONSTRUCTION OF THE UNITS AT THE STRUCTURE

## UNIT "LUHANSKAYA TPP" OF THE "SKHIDENERGO" LTD.

- /53/ Fuel consumption logbook
- /54/ Permit #4410161400 – 11a dated 07/10/2010 on alterations to the permit #4410161400 – 11 dated 16/12/2008 on stationary sources air pollution, issued by Donetsk Region Environmental State Office to to Shidenerho LLC Zuyevska Thermal Power Plant SU
- /55/ Permit #4410161400 – 11 dated 25/02/2009 on stationary sources air pollution, issued by Donetsk Region Environmental State Office to Shidenerho LLC Luhanska Thermal Power Plant SU
- /56/ Certificate dated 20/11/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-C-4, serial #01147043
- /57/ Certificate dated 20/11/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-C-4, serial #01147086
- /58/ Certificate dated 20/11/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-C-4, serial #01147080
- /59/ Certificate dated 20/11/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-C-4, serial #01147092
- /60/ Certificate dated 20/11/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-C-4, serial #01147030
- /61/ Certificate dated 20/11/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-C-4, serial #01147050
- /62/ Certificate dated 20/11/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-C-4, serial #01147078
- /63/ Certificate dated 20/11/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-C-4, serial #01147061
- /64/ Certificate dated 20/11/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-C-4, serial #01147073
- /65/ Certificate dated 20/11/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-C-4, serial #01147055
- /66/ Certificate dated 20/11/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-C-4, serial #01147057
- /67/ Certificate dated 20/11/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-C-4, serial #01147040
- /68/ Certificate dated 20/11/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-C-4, serial #01147066
- /69/ Certificate dated 20/11/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-C-4, serial #01147063
- /70/ Certificate dated 20/11/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-C-4, serial #01147056
- /71/ Certificate dated 20/11/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-C-4, serial #01147071
- /72/ Certificate dated 20/11/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-C-4, serial #01147038
- /73/ Certificate dated 20/11/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-C-4, serial #01147060
- /74/ Certificate dated 20/11/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-C-4, serial #01147075



## VERIFICATION REPORT RECONSTRUCTION OF THE UNITS AT THE STRUCTURE

## UNIT "LUHANSKAYA TPP" OF THE "SKHIDENERGO" LTD.

- /75/ Certificate dated 20/11/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-C-4, serial #01147031
- /76/ Certificate dated 20/11/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-C-4, serial #01147059
- /77/ Certificate dated 20/11/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-C-4, serial #01147087
- /78/ Certificate dated 20/11/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-C-4, serial #01147100
- /79/ Certificate dated 20/11/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-C-4, serial #01147107
- /80/ Certificate dated 20/11/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-C-4, serial #01147098
- /81/ Certificate dated 12/2006 on acceptance and calibration of power meter type Enerhia-9, serial #36093
- /82/ Certificate dated 12/2006 on acceptance and calibration of power meter type Enerhia-9, serial #36092
- /83/ Certificate dated 12/2006 on acceptance and calibration of power meter type Enerhia-9, serial #36094
- /84/ Certificate dated 12/2006 on acceptance and calibration of power meter type Enerhia-9, serial #36098
- /85/ Certificate dated 12/2006 on acceptance and calibration of power meter type Enerhia-9, serial #36044
- /86/ Certificate dated 12/2006 on acceptance and calibration of power meter type Enerhia-9, serial #36047
- /87/ Certificate dated 12/2006 on acceptance and calibration of power meter type Enerhia-9, serial #36045
- /88/ Certificate dated 12/2006 on acceptance and calibration of power meter type Enerhia-9, serial #36050
- /89/ Certificate dated 12/2006 on acceptance and calibration of power meter type Enerhia-9, serial #36049
- /90/ Certificate dated 12/2006 on acceptance and calibration of power meter type Enerhia-9, serial #36051
- /91/ Certificate dated 28/01/1998 on acceptance and calibration of power meter type A1R-3-OL-C4-T, serial #01013158
- /92/ Certificate dated 28/01/1998 on acceptance and calibration of power meter type A1R-3-OL-C4-T, serial #01013154
- /93/ Certificate dated 28/01/1998 on acceptance and calibration of power meter type A1R-3-OL-C4-T, serial #01015420
- /94/ Certificate dated 13/08/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-P4C-W4, serial #01198745
- /95/ Certificate dated 13/08/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-P4C-W4, serial #01198741
- /96/ Certificate dated 13/08/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-P4C-W4, serial #01198721
- /97/ Certificate dated 13/08/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-P4C-W4, serial #01198718





## VERIFICATION REPORT RECONSTRUCTION OF THE UNITS AT THE STRUCTURE

## UNIT "LUHANSKAYA TPP" OF THE "SKHIDENERGO" LTD.

- /98/ Certificate dated 13/08/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-P4C-W4, serial #01198744
- /99/ Certificate dated 13/08/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-P4C-W4, serial #01198735
- /100/ Certificate dated 13/08/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-P4C-W4, serial #01198739
- /101/ Certificate dated 13/08/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-P4C-W4, serial #01198729
- /102/ Certificate dated 13/08/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-P4C-W4, serial #01198740
- /103/ Certificate dated 13/08/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-P4C-W4, serial #01198748
- /104/ Certificate dated 13/08/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-P4C-W4, serial #01198730
- /105/ Certificate dated 13/08/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-P4C-W4, serial #01198719
- /106/ Certificate dated 13/08/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-P4C-W4, serial #01198743
- /107/ Certificate dated 13/08/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-P4C-W4, serial #01198717
- /108/ Certificate dated 13/08/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-P4C-W4, serial #01198723
- /109/ Certificate dated 13/08/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-P4C-W4, serial #01198736
- /110/ Certificate dated 13/08/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-P4C-W4, serial #01198746
- /111/ Certificate dated 13/08/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-P4C-W4, serial #01198738
- /112/ Certificate dated 13/08/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-P4C-W4, serial #01198727
- /113/ Certificate dated 13/08/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-P4C-W4, serial #01198720
- /114/ Certificate dated 13/08/2006 on acceptance and calibration of Elster-Metronica power meter type 02RAL-P4C-W4, serial #01198725
- /115/ Form 11-мтп, issued to Shidenerho LLC Luhanska Thermal Power Plant SU. Report on fuel, heat and power consumption results for January-December 2010
- /116/ Form 2-тп, issued to Shidenerho Ltd Luhanska Thermal Power Plant SU. Report on air protection for 2010
- /117/ Form 2-тп, issued to Shidenerho Ltd Luhanska Thermal Power Plant SU. Report on air protection for I quarter 2011
- /118/ Attestation certificate dated 25/12/2007 on Shidenerho Ltd Luhanska Thermal Power Plant Structural Unit production chemical laboratory
- /119/ Attestation certificate dated 24/12/2010 on Shidenerho Ltd Luhanska Thermal Power Plant Structural Unit production chemical laboratory
- /120/ Calibration certificate on conveyor belt scales RAMSEY 14 # 09430429, dated





## VERIFICATION REPORT RECONSTRUCTION OF THE UNITS AT THE STRUCTURE

## UNIT "LUHANSKAYA TPP" OF THE "SKHIDENERGO" LTD.

- 27.04.2010
- /121/ Calibration certificate on conveyor belt scales RAMSEY 14 # 09430429, dated 27.04.2010
  - /122/ Calibration certificate on conveyor belt scales # 435, line 15B, dated 23.07.2010
  - /123/ Calibration certificate on conveyor belt scales # 432, line 15A, dated 23.07.2010
  - /124/ Protocol #2 dated 04/01/2010 on input control results, heavy fuel oil M-100
  - /125/ Protocol #1 dated 01-05/01/2011 on input control results, fuel coal
  - /126/ Protocol #55 dated 01-05/10/2010 on input control results, fuel coal
  - /127/ Protocol #37 dated 01-05/07/2010 on input control results, fuel coal
  - /128/ Protocol #19 dated 01-05/04/2010 on input control results, fuel coal
  - /129/ Protocol #1 dated 01-05/01/2010 on input control results, fuel coal
  - /130/ Form 22тп on fuel leftovers consumption at Luhanska Thermal Power Plant for March 2011
  - /131/ Form 23тп on fuel leftovers stock-taking at Luhanska Thermal Power Plant for 31/03/2011
  - /132/ Form 22тп on fuel leftovers consumption at Luhanska Thermal Power Plant for February 2011
  - /133/ Form 23тп on fuel leftovers stock-taking at Luhanska Thermal Power Plant for 25/02/2011
  - /134/ Form 22тп on fuel leftovers consumption at Luhanska Thermal Power Plant for January 2011
  - /135/ Form 23тп on fuel leftovers stock-taking at Luhanska Thermal Power Plant for 31/01/2011
  - /136/ Statement dated 31/03/11 on natural gas acceptance-transmittance
  - /137/ Statement dated 25/02/11 on natural gas acceptance-transmittance
  - /138/ Statement dated 31/01/11 on natural gas acceptance-transmittance
  - /139/ Certificate #1584 dated 17.11.2010 on natural gas quality
  - /140/ Sample logbook from 1/01/2011 to 31/01/2011
  - /141/ Analysis result #66 dated 04/01/11 on coal АШ 0-6
  - /142/ Certificate #349 dated 30/12/10 on coal АШ 0-6 quality
  - /143/ Analysis result #64 dated 03/01/11 on coal ТО-100н
  - /144/ Certificate #1678 dated 30/12/10 on coal ТО-100н quality
  - /145/ Sample logbook from 1/11/2010 to 31/11/2010
  - /146/ Analysis result #5881 dated 07/11/10 on coal ТО-100
  - /147/ Certificate #2902 dated 5/11/10 on coal ТО-100 quality
  - /148/ Analysis result #5919 dated 09/11/10 on coal TP-100Ж
  - /149/ Certificate #507 dated 06/11/10 on coal TP 0-200 quality
  - /150/ Analysis result #5921 dated 09/11/10 on coal АШ 0-6 об
  - /151/ Certificate #1672 dated 08/11/10 on coal АШ 0-6 об quality
  - /152/ Analysis result #6012 dated 14/11/10 on coal АШ 0-6 конц
  - /153/ Certificate #873 dated 13/11/10 on coal АШ 0-6 конц quality
  - /154/ Certificate on high sulfurous fuel oil quality
  - /155/ Calibrating certificate on electric meters SL7000 ## 36043255, 36043252, 36043254, and EA02RAL-P4C-4W, #01198726



## VERIFICATION REPORT RECONSTRUCTION OF THE UNITS AT THE STRUCTURE

## UNIT "LUHANSKAYA TPP" OF THE "SKHIDENERGO" LTD.

- /156/ LLC Vostokenergo Order #202 of 09.09.10 on archiving the JI project information.
- /157/ Statement of working commission on equipment pre-commissioning dated June 2010, Luhanska Thermal Power Plant block #11 gas pipelines
- /158/ Statement of working commission on equipment pre-commissioning dated July 2010, Luhanska Thermal Power Plant block #11 gas pipelines
- /159/ Statement of working commission on equipment pre-commissioning dated June 2010, Luhanska Thermal Power Plant block #11 exhauster thermo insulation
- /160/ Statement of working commission on equipment pre-commissioning dated July 2010, Luhanska Thermal Power Plant block #11 gas exhauster thermo insulation
- /161/ Statement of working commission on equipment pre-commissioning dated July 2010, Luhanska Thermal Power Plant block #11 boilers thermo insulation
- /162/ Statement of working commission on equipment pre-commissioning dated July 2010, Luhanska Thermal Power Plant block #11 repairs of the scrubbers' lining (cylindrical surface)
- /163/ Statement of working commission on equipment pre-commissioning dated July 2010, Luhanska Thermal Power Plant block #11 repairs of the gas burners thermo insulation
- /164/ Statement of working commission on equipment pre-commissioning dated July 2010, Luhanska Thermal Power Plant block #9 repairs steam superheaters
- /165/ Statement of working commission on equipment pre-commissioning dated July 2010, Luhanska Thermal Power Plant block #9 repairs steam superheaters

**Persons interviewed:**

List persons interviewed during the verification or persons that contributed with other information that are not included in the documents listed above.

- /1/ Vyctor Malygin – Chief engineer of Luhansk TPP
- /2/ - Oleksandr Maslov - Head of Production-Technical Department of Luhansk TPP
- /3/ Vitaliy Priz – Head of Transport-Fuel Department of Luhansk TPP
- /4/ Ievgen Serebryanskyi – Head of Boiler-Turbine Department of Luhansk TPP
- /5/ Sergey Bychkov – Head of Electricity Department of Luhansk TPP
- /6/ Olena Ageyenkova – Head of Chemical Laboratory of Luhansk TPP
- /7/ Maksim Rohovoy – Deputy Director of JSC "ELTA"



VERIFICATION REPORT RECONSTRUCTION OF THE UNITS AT THE STRUCTURE UNIT "LUHANSKAYA TPP" OF THE

"SKHIDENERGO" LTD.

## APPENDIX A: COMPANY PROJECT VERIFICATION PROTOCOL VERIFICATION PROTOCOL

Check list for verification, according to the JOINT IMPLEMENTATION DETERMINATION AND VERIFICATION MANUAL (Version 01)

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
<b>Project approvals by Parties involved</b>				
90	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?	CAR #01 Information on project approval is missing in the Monitoring Report. Please, provide to the Monitoring Report references to the written project approvals.	CAR #01	OK
91	Are all the written project approvals by Parties involved unconditional?	All the written project approvals are unconditional.	OK	OK
<b>Project implementation</b>				
92	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?	CAR #02 Please, correct grammar mistakes in the Monitoring Report.	CAR #02	OK
93	What is the status of operation of the project during the monitoring period?	CAR #03 Capital repairs, mid-repairs, permanent repairs are	CAR #03	OK



## VERIFICATION REPORT RECONSTRUCTION OF THE UNITS AT THE STRUCTURE UNIT "LUHANSKAYA TPP" OF THE

"SKHIDENERGO" LTD.

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		<p>common for power generation industry. Please, prove that project activity during monitoring period is additional to repairs provided at the TPP. CAR #04 Please, provide in the Monitoring Report full names of the installed during the monitoring period equipment.</p>	CAR #04	OK
<b>Compliance with monitoring plan</b>				
94	Did the monitoring occur 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 plan included in PDD got a positive determination conclusion. This plan used during initial and 1 <sup>st</sup> periodic verifications. The monitoring is in line with determined monitoring plan.	OK	OK
95 (a)	For calculating the emission reductions or enhancements of net removals, were key factors, e.g. those listed in 23 (b) (i)-(vii) above, 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?	All key factors 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 were taken into account, as appropriate for calculating the emission reductions or enhancements of net removals.	OK	OK
95 (b)	Are data sources used for calculating	Daily coal consumption is recorded by fuel-	OK	OK



## VERIFICATION REPORT RECONSTRUCTION OF THE UNITS AT THE STRUCTURE UNIT "LUHANSKAYA TPP" OF THE

"SKHIDENERGO" LTD.

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	emission reductions or enhancements of net removals clearly identified, reliable and transparent?	transport department in paper form. Daily heavy fuel oil consumption is recorded by boiler-turbine department. Electricity supply is recorded by Electricity department. Net calorific value of fuel is measured by TPP chemical laboratory. This data transferred to the technical-producing department, which is responsible to daily fuel consumption. The technical-producing department is responsible for prepare periodical technical report 3-TEX form on daily, monthly, yearly basis.		
95 (c)	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?	CAR #05 Please, indicate in the Monitoring Report the correct and traceable reference for the sub-bituminous coal Emission factor used.	CAR #05	OK
95 (d)	Is the calculation of emission reductions or enhancements of net removals based on conservative assumptions and the most plausible	CAR #06 Please, provide ERUs calculation for March 2011.	CAR #06	OK



VERIFICATION REPORT RECONSTRUCTION OF THE UNITS AT THE STRUCTURE UNIT “LUHANSKAYA TPP” OF THE

“SKHIDENERGO” LTD.

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	scenarios in a transparent manner?			
<b>Applicable to JI SSC projects only</b>				
96	Is the relevant threshold to be classified as JI SSC project not exceeded during the monitoring period on an annual average basis? If the threshold is exceeded, is the maximum emission reduction level estimated in the PDD for the JI SSC project or the bundle for the monitoring period determined?	Not applicable	Not applicable	Not applicable
<b>Applicable to bundled JI SSC projects only</b>				
97 (a)	Has the composition of the bundle not changed from that is stated in F-JI-SSCBUNDLE?	Not applicable	Not applicable	Not applicable
97 (b)	If the determination was conducted on the basis of an overall monitoring plan, have the project participants submitted a common monitoring report?	Not applicable	Not applicable	Not applicable
98	If the monitoring is based on a monitoring plan that provides for overlapping monitoring periods, are the monitoring periods per component of the project clearly specified in the	Not applicable	Not applicable	Not applicable





## VERIFICATION REPORT RECONSTRUCTION OF THE UNITS AT THE STRUCTURE UNIT “LUHANSKAYA TPP” OF THE

“SKHIDENERGO” LTD.

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	monitoring report? Do the monitoring periods not overlap with those for which verifications were already deemed final in the past?			
<b>Revision of monitoring plan</b>				
<b>Applicable only if monitoring plan is revised by project participant</b>				
99 (a)	Did the project participants provide an appropriate justification for the proposed revision?	Not applicable	Not applicable	Not applicable
99 (b)	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?	Not applicable	Not applicable	Not applicable
<b>Data management</b>				
101 (a)	Is the implementation of data collection procedures in accordance with the monitoring plan, including the quality control and quality assurance procedures?	The implementation of data collection procedures are in accordance with the monitoring plan, included in the determined PDD. Verification team confirms effectiveness of existing management system.	OK	OK
101 (b)	Is the function of the monitoring equipment, including its calibration	CAR #07 The information on electric meters 9T, 10T, 11T,	CAR #07	OK



## VERIFICATION REPORT RECONSTRUCTION OF THE UNITS AT THE STRUCTURE UNIT "LUHANSKAYA TPP" OF THE

"SKHIDENERGO" LTD.

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	status, is in order?	13T, 14T, 15T, in the Monitoring Report does not correspond to the situation observed onsite. Please correct.		
101 (c)	Are the evidence and records used for the monitoring maintained in a traceable manner?	The evidence and records used for the monitoring equipment are obtained in traceable manner. The data monitored and used for ERUs calculation will be kept during two years after the end of crediting period.	OK	OK
101 (d)	Is the data collection and management system for the project in accordance with the monitoring plan?	The data collection and management system for the project are in accordance with the monitoring plan. The data monitored and used to ERU's calculation will be kept during two years after the crediting period.	OK	OK
<b>Verification regarding programs of activities (additional elements for assessment)</b>				
102	Is any JPA that has not been added to the JI PoA not verified?	Not applicable	Not applicable	Not applicable
103	Is the verification based on the monitoring reports of all JPAs to be verified?	Not applicable	Not applicable	Not applicable
103	Does the verification ensure the accuracy and conservativeness of the emission reductions or enhancements of removals generated by each JPA?	Not applicable	Not applicable	Not applicable
104	Does the monitoring period not overlap	Not applicable	Not	Not



## VERIFICATION REPORT RECONSTRUCTION OF THE UNITS AT THE STRUCTURE UNIT "LUHANSKAYA TPP" OF THE

"SKHIDENERGO" LTD.

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	with previous monitoring periods?		applicable	applicable
105	If the AIE learns of an erroneously included JPA, has the AIE informed the JISC of its findings in writing?	Not applicable	Not applicable	Not applicable
<b>Applicable to sample-based approach only</b>				
106	Does the sampling plan prepared by the AIE: (a) Describe its sample selection, taking into account that: (i) For each verification that uses a sample-based approach, the sample selection shall be sufficiently representative of the JPAs in the JI PoA such extrapolation to all JPAs identified for that verification is reasonable, taking into account differences among the characteristics of JPAs, such as: – The types of JPAs; – The complexity of the applicable technologies and/or measures used; – The geographical location of each JPA;	Not applicable	Not applicable	Not applicable

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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	<ul style="list-style-type: none"> <li>- The amounts of expected emission reductions of the JPAs being verified;</li> <li>- The number of JPAs for which emission reductions are being verified;</li> <li>- The length of monitoring periods of the JPAs being verified; and</li> <li>- The samples selected for prior verifications, if any?</li> </ul>			
107	Is the sampling plan ready for publication through the secretariat along with the verification report and supporting documentation?	Not applicable	Not applicable	Not applicable
108	Has the AIE made site inspections of at least the square root of the number of total JPAs, rounded to the upper whole number? If the AIE makes no site inspections or fewer site inspections than the square root of the number of total JPAs, rounded to the upper whole number, then does the AIE provide a reasonable explanation and justification?	Not applicable	Not applicable	Not applicable

VERIFICATION REPORT RECONSTRUCTION OF THE UNITS AT THE STRUCTURE UNIT "LUHANSKAYA TPP" OF THE  
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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
109	Is the sampling plan available for submission to the secretariat for the JISC.s ex ante assessment? (Optional)	Not applicable	Not applicable	Not applicable
110	If the AIE learns of a fraudulently included JPA, a fraudulently monitored JPA or an inflated number of emission reductions claimed in a JI PoA, has the AIE informed the JISC of the fraud in writing?	Not applicable	Not applicable	Not applicable

TABLE 2 RESOLUTION OF CORRECTIVE ACTION AND CLARIFICATION REQUESTS

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1	Summary of project participant response	Verification team conclusion
CAR #01 Information on project approval is missing in the Monitoring Report. Please, provide in the Monitoring Report references to the written project approvals	90	Letters of Approval by Parties involved have been provided to the verification team. Monitoring Report was corrected.  See Section A.2, Version 1.2-2010LuTPP	The issue is closed, Monitoring Report is checked.



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<p>CAR #02 Please, correct grammar mistakes in the Monitoring Report.</p>	92	See Version 1.2-2010LuTPP	Monitoring Report is checked. Issue is closed
<p>CAR #03 Capital repairs, mid-repairs, permanent repairs are common for power generation industry. Please, prove that project activity during the monitoring period is additional to repairs provided at the TPP.</p>	93	<p>In the Baseline Scenario (2003-2005) there were also permanent repairs, mid-life repairs and capital repairs, but the SFR in those years did not get better. The volume of the measures implemented in the Project Scenario during the permanent repair, mid-life repair or capital repair is much wider than in the Baseline Scenario. All the measures, that should be included in the repair program as the common practice described in the GKD 34.20.661-2003 "The rules for the servicing and repairs of the equipment, buildings and constructions of the Power Plants and the Networks" Approved by the Ministry of the Fuel and Energy of Ukraine in 2004. The measures implemented in the Project Scenario are beyond these obligatory volume</p>	<p>The issue is closed based on appropriate information and corrections provided</p>





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CAR #04 Please, provide in the Monitoring Report full names of the installed during the monitoring period equipment.	93	Full names of the installed during monitoring period equipment were provided in Monitoring Report Versions 1.1-2010LuTPP and 1.2-2010LuTPP.	The required information was presented in the revised MR. The issue is closed.
CAR #05 Please, indicate in the Monitoring Report the correct and traceable reference for the sub-bituminous coal Emission factor used.	95(c)	See Section B.3 Version 1.2-2010LuTPP <a href="http://www.ipcc-nggip.iges.or.jp/public/gl/pdffiles/rusch1-1.pdf">http://www.ipcc-nggip.iges.or.jp/public/gl/pdffiles/rusch1-1.pdf</a>	The required information was presented in the revised MR. The issue is closed.
CAR #06 Please, provide ERUs calculation for March 2011.	95(d)	ERUs calculation for March 2011 was provided in Monitoring Report Versions 1.1-2010LuTPP and 1.2-2010LuTPP	The required information was presented in the revised MR. The issue is closed.
CAR #07 The information on electric meters 9T, 10T, 11T, 13T, 14T, 15T, in the Monitoring Report does not correspond to the situation observed onsite. Please correct.	101(b)	The electric meters used for the calculation of electricity supply are 9TG, 10TG, etc. TG means turbogenerator. The meters 9T, 10T, etc are different ones, used for the collection of the different type of data (low-voltage).	The issue is closed based on appropriate information.