VERIFICATION REPORT
PJSC «DTEK DNIPROOBLENERGO»

VERIFICATION OF THE REDUCTION OF PROCESS LOSSES IN POWER LINES PJSC «DNIPROOBLENERGO»

SECOND PERIODIC FOR 01/01/2008-31/12/2012

REPORT NO. UKRAINE-VER/0524/2012

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BUREAU VERITAS CERTIFICATION

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Client: PJSC «DTEK Dniprooblenergo»	Client ref.: Andriy Deykalo

Summary:
Bureau Veritas Certification has made the 2nd periodic verification of the Reduction of Process Losses in Power Lines PJSC «Dniprooblenergo», project of PJSC «DTEK Dniprooblenergo» located in Dnipropetrovs'k City and Dnipropetrovs'k Region, Ukraine, and applying 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 monitoring report against 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 6501405 tonnes of CO2 equivalent for the monitoring period from 01/01/2008 to 31/12/2012 (1060770 tonnes of CO2 equivalent for 01/01/2008-31/12/2008, 1392511 tonnes of CO2 equivalent for 01/01/2009-31/12/2009, 1330179 tonnes of CO2 equivalent for 01/01/2010-31/12/2010, 1348755 tonnes of CO2 equivalent for 01/01/2011-31/12/2011, 1369190 tonnes of CO2 equivalent for 01/01/2012-31/12/2012).

Report No.: Ukraine-ver/0524/2012	Subject Group: JI	
Project title: Reduction of Process Losses in Power Lines PJSC «Dniprooblenergo»		
Work carried out by: Oleg Skoblyk – Team Leader, Lead Verifier Vyacheslav Yeriomin – Team Member, Verifier		
Work reviewed by: Ivan Sokolov - Technical Reviewer Daniil Ukhanov – Technical specialist		
Work approved by: Ivan Sokolov - Operational Manager Bureau Veritas Certification Holding SAS		
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1 INTRODUCTION

PJSC «DTEK Dniprooblenergo» has commissioned Bureau Veritas Certification to verify the emissions reductions of its JI project "Reduction of Process Losses in Power Lines PJSC «Dniprooblenergo»" (hereafter called "the project") at Dnipropetrovsk City and Dnipropetrovsk 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.

Verification covers the period from 01/01/2008 to 31/12/2012.

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, monitoring plan and monitoring report, 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, corrective and/or forward 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	Climate Change Verifier

This verification report was reviewed by:

Ivan Sokolov

Bureau Veritas Certification, Internal Technical Reviewer

Daniil Ukhanov
Bureau Veritas Certification, Technical Specialist

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 PJSC «DTEK Dniprooblenergo» and additional background documents related to the project design and baseline, i.e. country Law, Project Design Document (PDD), and 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 version(s) 04 and project as described in the determined PDD.

2.2 Follow-up Interviews

On 07/09/2011 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 PJSC «DTEK Dniprooblenergo» and Ltd. "EES" were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
PJSC «DTEK Dniprooblenergo»	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 IT management Training of personnel Quality management procedures and technology Internal audits and check-ups
CONSULTANT: "EES" Ltd	Baseline methodology Monitoring plan Monitoring report Excel spreadsheets

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 Verification Team 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.

The Verification Team will make an objective assessment as to whether the actions taken by the project participants, if any, satisfactorily resolve the issues raised, if any, and should conclude its findings of the verification.

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 6 Corrective Action Requests, 0 Clarification Requests, and 0 Forward Action Requests.

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

3.1 Remaining issues and FARs from previous verifications

No FARs are pending from determination process provided by Bureau Veritas Certification Holding SAS

3.2 Project approval by Parties involved (90-91)

The project obtained written approval from Ukraine (the Host country) on 03/04/2012 (Letter of Approval № 857/23/7, issued by the State Environmental Investment Agency of Ukraine). The project was also approved by Poland, the country – buyer of GHG emission reductions (Letter of Approval №DZKiOApek-350-4/32907/11/TK issued by the Minister of Environment of Poland dated 20/07/2011).

The abovementioned written approval is unconditional.

3.3 Project implementation (92-93)

Project implementation status in the reporting period of 01/01/2008 – 31/12/2012, including the project milestones is provided in the following table

Table 1. Project implementation status

№	Name of activities	Measurement unit	2008	2009	2010	2011	2012
1	2	3	4	5	6	7	8
1	Reconstruction of PL -0,38 kV of SIP	km	0	0	126	273	161
2	Replacement of overloaded and installation of additional power transformers	pcs.	189	132	111	316	280
3	Construction of PL-10kV;	km	7,66	6,67	9,41	13,35	4,41
	PL-0,38 kV	km	7,4	0,92	0,0	2,38	-
4	Replacing the single-phase meters with high accuracy meters	pcs	137000	148600	169742	182322	133718
5	Replacement of wrecked PL-0,38kV	km	180,98	53,51	266,74	273,29	80,97
6	Implementing systems telemehanyk PS-35-150kV	pcs.	26	1	47	55	24
7	Change of bare wire inputs into isolated wire inputs	pcs	19170	19555	22155	41041	62355
8	Construction of unloading substations	pcs	1	2	26	27	2
9	Replacement and installation of meters in front of buildings	pcs	19170	19555	22155	41041	62355
10	Change of wrecked PL-10kV	km	70,41	32,95	16,58	80,49	20,47
11	Change of TP-10/0,38kV	pcs	118	82	76	157	99
12	Replacement of worn-out oil switches with vacuum ones	pcs	358	235	248	189	85
13	Change of the cable lines 10- 0,38 kV	km	12,7	6,89	23,93	23,09	46,76
14	Installation of 3 –phase multifunctional meters	pcs	3	367	8	35	60
15	Change of inputs of 110kV with rigid insulation	pcs.	0	25	19	18	30
16	Introduction of ASKOE	pcs.	0	1000	10013	10067	17167
17	Reconstruction of PS 35-150 kV.	pcs.	6	10	16	9	7

It was assessed by Bureau Veritas verification team during the site visit that the project has been implemented in accordance with the PDD regarding which the determination has been deemed final.

Since the determined PDD version 3.0 contains calculated ERUs for the period of 2008 – 2010 years, and the monitoring was conducted at the beginning of 2013, then according to Ltd «EES» there had been conducted calculations of ERUs for the year 2011 and for the 2012.

CAR01-CAR03 and their resolution/conclusion on project implementation concerning in the APPENDIX A: COMPANY PROJECT VERIFICATION PROTOCOL.

3.4 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 and the activity level of the project and the emissions as well as risks associated with the project were taken into account.

The actual amount of emission reductions during the monitoring period differs from values that were indicated in the determinate PDD version 3.0, as a result of using of the differentiated approach to value ratio deterioration of electrical indexes of electrical equipment over time of KP for different billing periods (baseline and current years estimated) while monitoring plan performance, to take account of the effect of improving electrical performance of electrical equipment by introduced measures of TVE reduction and application of the calculated input for 2012.

Key monitoring activities are clearly described in the monitoring report and no deviations from monitoring algorithm were detected. The monitoring points including parameters monitored, monitoring equipment and information concerning its calibration interval are clearly described in the section B of the Monitoring Report and completely corresponds with determined PDD.

Data sources used to calculate emission reductions that i.e. reports according to departmental reporting forms by Ministry of Fuel and Energy of Ukraine (1B-TVE "The structure of electric power balance and technological loss of electric power for transmission in grids" (model 41971), " Electricity and power balance and calculation of technical and economic indexes "(model 8111), 46 energo" Electric power distribution and its calculation "(model 45912) yearly reports on investment programmes realisation are clearly identified, reliable and transparent.

Emission factor for electric energy transportation are selected by carefully balancing Accuracy and reasonableness, and appropriately justified of the choice. Values of Emission Factor for electric power transportation were accepted in compliance with State Environmental Investment Agency of Ukraine Orders.

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

CAR04 and its resolution/conclusion applicable to compliance of the monitoring plan with the monitoring methodology concerning in the APPENDIX A: COMPANY PROJECT VERIFICATION PROTOCOL

3.5 Revision of monitoring plan (99-100)

When calculating actual emission reductions during the monitoring period, following the principles of a conservative approach, for different billing periods (baseline and current years estimated):

a) coefficient value of electrical equipment deterioration index over time of $КР_N$ for the base year N (N = 0) is taken equal to 1,25, as set out in accordance with Annex A "Report on the scientific and technical work" Assessment of greenhouse gas emissions by technological losses reduction in the distribution networks of Ukraine "(final) under the contract №3/11 of 04.04.2011, the Institute of General Energy of the National Academy of Sciences of Ukraine" value of this ratio can be as high as thirty percent or more of passport values (KP ≥ 1,3) , that is in the beginning of the project implementation in electrical networks it is operated most of the electrical equipment with significant depreciation;

b) coefficient value of electrical equipment deterioration index over time of $КР_{N+1}$ for the current calculated year t, which is the baseline (N = 0, t = 1) is taken equal to 1,15, since the measures implementation of TVE reduction in this year of project realization there has been replaced a part of electrical equipment with the highest level of depreciation;

c) coefficient value of electrical equipment deterioration index over time $КР_{N+t} = КР_{N+1} - 0,01 \cdot t$ for the next calculated years N + t (N = 0, t ≥ 2), ie the coefficient is reduced to 0,01 for each next year in comparison with the previous one, because the share of electrical equipment depreciation, which is operated in networks decreases due to the introduction of measures of TVE reduction;

d) If the calculated value of the coefficient $КР_{N+t} < 1,05$ of ongoing settlement years is N + t (N = 0, t ≥ 2), then for these years, it is taken equal to 1,05, since in electrical networks there will be operated a part of electrical equipment with depreciation.

The difference in the calculation of emissions before and after the change of the monitoring plan is presented in the table below

Year	Emission reduction to changes in the monitoring plan	Emission reduction after the change of the monitoring plan
	tCO2eq	tCO2eq
2008	886185	1060770
2009	1215668	1392511
2010	1153820	1330179
2011	1172879	1348755
2012		1369190
Total 2008-2012:	**4 428 552**	**6 501 405**

Bureau Veritas confirms that changes in monitoring plan based on Alteration#1 for "The methodology of technical power losses amount determination, in 0,38-150 kV power grids power supply company for the indirect carbon dioxide emissions estimation" is adequately justified and improves accuracy of the monitoring data.

3.6 Data management (101)

The detailed data management system has been implemented on PJSC «DTEK Dniprooblenergo» to record and keeps required information. The monitored data flow for each parameter to be monitored is described in the section C.1 of the Monitoring Report. Operational information and reporting department is responsible to monitoring data preparation.

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. Metering equipment involved in the project activity are periodically calibrated by State Enterprise "Dniprostandartmetrologiya". Data on electric energy flow are periodically checked by PJSC «DTEK Dniprooblenergo».

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

The data collection and management system for the project is in accordance with the monitoring plan. The data monitored and required for ERUs calculation will be kept during two years after last ERUs transfer.

CAR05, CAR06 and their resolution/conclusion applicable to data management concerning in APPENDIX A: COMPANY PROJECT VERIFICATION PROTOCOL

3.7 Verification regarding programmes of activities (102-110)

"Not applicable"

4 VERIFICATION OPINION

Bureau Veritas Certification has performed the second periodic verification of the "Reduction of Process Losses in Power Lines PJSC «Dniprooblenergo»" Project in Dnipropetrovsk City and Dnipropetrovsk Region, Ukraine, which applies 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 monitoring report against 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 PJSC «DTEK Dniprooblenergo» 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 Plan indicated in the final PDD version. 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 04 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 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. For ease of calculation of emission reductions in the Excel file «DOE-1BTWE-2008-2012-05-03-2013-Km=1-ok-KP-CO-MR-ENG.xls.», all the values with the quotient of one hundred are rounded to integers. Therefore, when summing the values of ERUs, which are listed in Tables of Monitoring Report there may be minor differences Based on the information we have seen and evaluated, we confirm, with a reasonable level of assurance, the following statement:

Reporting period: From 01/01/2008 to 31/12/2012

For the period (01/01/2008-31.12.2008)	:.		
Baseline emissions	:	1060770	tonnes of CO_2 equivalent.
Project emissions	:	0	tonnes of CO2 equivalent.
Emission Reductions	:	1060770	tonnes of CO_2 equivalent.
For the period (01/01/2009-31.12.2009)	:		
Baseline emissions	:	1392511	tonnes of CO_2 equivalent.
Project emissions	:	0	tonnes of CO2 equivalent.
Emission Reductions	:	1392511	tonnes of CO_2 equivalent.
For the period (01/01/2010-31.12.2010)	:		
Baseline emissions	:	1330179	tonnes of CO_2 equivalent.
Project emissions	:	0	tonnes of CO2 equivalent.
Emission Reductions	:	1330179	tonnes of CO_2 equivalent.
For the period (01/01/2011-31.12.2011)	:		
Baseline emissions	:	1348755	tonnes of CO_2 equivalent.
Project emissions	:	0	tonnes of CO2 equivalent.
Emission Reductions	:	1348755	tonnes of CO_2 equivalent.
For the period (01/01/2012-31.12.2012)	:		
Baseline emissions	:	1369190	tonnes of CO_2 equivalent.
Project emissions	:	0	tonnes of CO2 equivalent.
Emission Reductions	:	1369190	tonnes of CO_2 equivalent.
Total for the period (01/01/2008-31.12.2012)			
Baseline emissions	:	6501405	tonnes of CO2 equivalent.
Project emissions	:	0	tonnes of CO2 equivalent.
Emission Reductions	:	6501405	tonnes of CO2 equivalent.

5 REFERENCES

Category 1 Documents:
Documents provided by PJSC «DTEK Dniprooblenergo» that relate directly to the GHG components of the project.

/1/ PDD "Reduction of Process Losses in Power Lines PJSC «Dniprooblenergo»" version 3.0 dated 01/11/2011
/2/ Monitoring Report "Reduction of Process Losses in Power Lines PJSC «Dniprooblenergo»" version 01 dated 19/09/2011
/3/ Monitoring Report "Reduction of Process Losses in Power Lines PJSC «Dniprooblenergo»" version 02 dated 31/01/2012
/4/ Monitoring Report "Reduction of Process Losses in Power Lines PJSC «Dniprooblenergo»" version 03 dated 01/10/2012
/5/ Monitoring Report "Reduction of Process Losses in Power Lines PJSC «Dniprooblenergo»" version 04 dated 06/03/2013
/6/ ERUs calculation Excel-file «DOE-1BTWE-2008-2012-05-03-2013-Km=1-ok-KP-CO-MR-ENG.xls.»
/7/ Letter of Approval № 857/23/7, issued by the State Environmental Investment Agency dated 03/04/2012
/8/ Letter of Approval №DZKiOApek-350-4/32907/11/TK issued by the Minister of Environment of Poland dated 20/07/2011

Category 2 Documents:
Background documents related to the design and/or methodologies employed in the design or other reference documents.

/1/ Decree of Cabinet of Ministers of Ukraine #206, dated 22/02/2006
/2/ Joint Implementation Project Design Document Form, version 01
/3/ Guidelines for Users of the Joint Implementation Project Design Document Form/Version 04, JISC.
/4/ JISC Guidance on criteria for baseline setting and monitoring. Version 02.
/5/ "Combined tool to identify the baseline scenario and demonstrate additionality" (Version 03.0.0)
/6/ Glossary of Joint Implementation Terms, Version 03.
/7/ Decree #43 on approval of indexes of specific carbon dioxide emissions in the year 2010 issued by NEIA dated 28.03.2011.
/8/ Decree #62 on approval of indexes of specific carbon dioxide emissions in the year 2008 issued by NEIA dated 15.04.2011.
/9/ Decree #63 on approval of indexes of specific carbon dioxide emissions in the year 2009 issued by NEIA dated 15.04.2011.
/10/ Decree #75 on approval of indexes of specific carbon dioxide emissions in the

year 2011 issued by NEIA dated 12.05.2011.

/11/ «The methodology of technical power losses amount determination, in 150-0,38 kV tension power grids power supply company for the indirect carbon dioxide emissions estimation» with alteration №1.

/12/ Presentation of JSC EC "Dniprooblenergo"for 2007

/13/ Journal "Power engineer of Pridniprovya" for August 2008 #8(58)

/14/ Agreement on services #00346-00 dated 19/12/2010

/15/ Statement of inspection of environmental regulations realization for the period from 08/08/2006 till 21/08/2006 Sinelnukove city

/16/ Statement of inspection of Ukrainian environmental regulations realization for the period from 02/09/2006 till 3/09/2006 Pokrovske town

/17/ Statement of inspection of Ukrainian environmental regulations compliance by Vasilkivskyi RG for the period from 16/03/2007 till 19/03/2007 Vaselkivske village

/18/ Statement of inspection of Ukrainian environmental regulations compliance for the period from 06/02/2007 till 08/02/2007 Verhnedniprovsk city

/19/ Statement of inspection of Ukrainian environmental regulations realization for the period from 26/02/2007 till 27/02/2007 Megova town

/20/ Statement of inspection of Ukrainian environmental regulations compliance dated 23/04/20078 Vaselkivka town

/21/ Statement of inspection of sanitary regulations compliance for the period from 04/02/2008 till 09/02/2008

/22/ Statement of inspection of Ukrainian environmental regulations realization dated 10/04/2008 Sunelnukove town

/23/ Statement of inspection of Ukrainian water condition regulations compliance dated 17/06/2008 Pokrovske town

/24/ Statement of inspection of Ukrainian environmental regulations compliance dated 17/04/2008 Petropavlovsk town

/25/ Statement of inspection of Ukrainian environmental regulations compliance dated 20/05/2009 Dneprodzerzhinsk town

/26/ Statement of inspection of sanitary-epidemiological survey dated 28/03/2011 Dnepropetrovsk city

/27/ Statement of inspection of sanitary-epidemiological survey dated 12/05/2011 Dnepropetrovsk city

/28/ Statement of inspection of sanitary-epidemiological survey dated 02/06/2011 Dnepropetrovsk city

/29/ Opening of a new substation "Auli"35|/6 kV- news agency "Noviy mist" dated 08/06/2011

/30/ Statement of inspection of Ukrainian environmental regulations compliance for the period from 08/08/2011 till 19/08/2011 Dnipropetrovsk city

/31/ Instruction on compiling, reporting and analyzing of departmental reporting analysis forms 1Б-ТВЕ "Energy balance structure and technological power consumption for transfer through power grid" dated 09/09/1997

/32/ Departmental report 1Б-ТВЕ power grid JSC EC "Dniprooblenergo" for 2001

/33/ Departmental report 1Б-ТВЕ power grid JSC EC "Dniprooblenergo" for 2002

/34/ Departmental report 1Б-ТВЕ power grid JSC EC "Dniprooblenergo" for 2003

/35/ Departmental report 1Б-ТВЕ power grid JSC EC "Dniprooblenergo" for 2004

/36/ Departmental report 1Б-ТВЕ power grid JSC EC "Dniprooblenergo" for 2005

/37/ Departmental report 1Б-ТВЕ power grid JSC EC "Dniprooblenergo" for 2006

/38/ Departmental report 1Б-ТВЕ power grid JSC EC "Dniprooblenergo" for 2007

/39/ Departmental report 1Б-ТВЕ power grid JSC EC "Dniprooblenergo" for 2008

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/42/ Departmental report 1Б-ТВЕ power grid PJSC "Dniprooblenergo" for 2011

/43/ Departmental report 1Б-ТВЕ power grid PJSC "DTEK Dniprooblenergo" for 2012

/44/ Form 67 energy for 2008

/45/ Form 67 energy for 2009

/46/ Form 67 energy for 2010

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/48/ Form 67 energy for 2012

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/51/ Form 68 energy for 2010

/52/ Form 68 energy for 2011

/53/ Form 68 energy for 2012

/54/ Newspaper "КП" dated 19/03/2011

/55/ Newspaper "Visty Prudniprovya" dated 16/12/2010 #92 (1184)

/56/ Newspaper "Visty Prudniprovya" dated 09/06/2011 #43 (1231)

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/74/ Active energy meter type EMP 211.02.1, serial #73577 Substation "Vuzlova

/75/ Multifunction electric meter type EQPS 122.21.12LL, serial # 500279 Substation "Vuzlova"

/76/ Instruction on measuring of electricity consumption from meters type EQPS Substation "Vuzlova"

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/87/ Control panel of substation "Nagorna"

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/89/ Panel "П3" substation "Nagorna"

/90/ Panel "П4" substation "Nagorna"

/91/ Panel "ЯЧ5" substation "Nagorna"

/92/ Panel "ЯЧ3" substation "Nagorna"

/93/ Chamber ВкВ Ф2 substation "Nagorna"

/94/ Chamber ВкВ Ф3 substation "Nagorna"

/95/ I – III busbar 6kV substation "Nagorna"

/96/ Control aisle of bus disconnector substation "Nagorna"

/97/ General view of bus disconnector substation "Nagorna"

/98/ Multifunction electric meter type EQPS 122.21.12LL, serial # 500146 Substation "Nagorna"

/99/ Multifunction electric meter type EQPS 122.21.12LL, serial # 500142, Substation "Nagorna"

/100/ Meter type ЦЭ6803В, serial #2910734 substation "Nagorna"

/101/ Meter type ЦЭ6803В, serial #2911154 substation "Nagorna"

/102/ Meter type ЦЭ6803В, serial #2911422 substation "Nagorna"

/103/ Meter type ЦЭ6803В, serial #2911187 substation "Nagorna"

/104/ Meter type ЦЭ6803В, serial #2911175 substation "Nagorna"

/105/ Meter type ЦЭ6803В, serial #2911163 substation "Nagorna"

/106/ Multifunction electric meter type LZQM 321.02.534, serial # 500142, Substation "Nagorna"

/107/ Meter type ЦЭ6803В, serial #2911421 substation "Nagorna"

/108/ Electric meter type СА3У, serial #343412

/109/ Meter type ЦЭ6803В, serial #2911191 substation "Nagorna"

/110/ Multifunction electric meter type LZQM 321.02.534, serial # 337318, Substation "Nagorna"

/111/ Multifunction electric meter type LZQM 321.02.534, serial # 337317, Substation "Nagorna"

/112/ Multifunction electric meter type EPQS 122.21.12LL, serial # 500312, Substation "Nagorna"

/113/ Multifunction electric meter type EPQS 122.21.12LL, serial # 500192, Substation "Nagorna"

/114/ Multifunction electric meter type LZQM 321.02.534, serial # 605139, Substation "Nagorna"

/115/ Current circuit of protection and alarm and airflow

/116/ Contact joins Substation "Г-1"

/117/ Multifunction electric meter type LZQM 321.02.534, serial # 327869, Substation "Г-1"

/118/ Multirate active and reactive energy meter type LZQM 321.02.534, serial # 327869, Substation "Г-1"

/119/ Multirate active and reactive energy meter type LZQM 321.02.534, serial # 337456, Substation "Г-1"

/120/ Multirate active and reactive energy meter type LZQM 321.02.534, serial # 327870, Substation "Г-1"

/121/ Multirate active and reactive energy meter type LZQM 321.02.534, serial # 337463, Substation "Г-1"

/122/ Multirate active and reactive energy meter type LZQM 321.02.534, serial # 327874, Substation "Г-1"

/123/ УЗА – 10А.Second substation "Г-1"

/124/ Multirate active and reactive energy meter type LZQM 321.02.534, serial # 327875, Substation "Г-1"

/125/ Multirate active and reactive energy meter type LZQM 321.02.534, serial # 327877, Substation "Г-1"

/126/ Multirate active and reactive energy meter type LZQM 321.02.534, serial # 327469, Substation "Г-1"

/127/ Control panel substation "Г-1"

/128/ Protection section of switcher type С-61,substation «Г - 1»

/129/ Protection section of switcher type С-63,substation «Г - 1»

/130/ Protection of input 6kV Т-61Б substation «Г-1»

/131/ Protection of input 6kV Т-61А substation «Г-1»

/132/ Main protection of transformer type 1Т substation «Г - 1»

/133/ Reserve protection of transformer type 1Т substation «Г - 1»

/134/ Reserve protection of transformer type 2Т substation «Г - 1»

/135/ Main protection of transformer type 2Т substation «Г - 1»

/136/ Protection of input 6kV Т-62Б substation «Г-1»

/137/ Protection of input 6kV Т-62А substation «Г-1»

/138/ Microprocessor device for protection and control of 6-35kV busbar type "Альтра" III bus section on substation "Г-1"

/139/ Microprocessor device for protection and control of 6-35kV busbar type "Альтра" IV bus section on substation "Г-1"

/140/ Microprocessor device for protection and control of 6-35kV busbar type

"Альтра" I bus section on substation "Г-1"

/141/ Microprocessor device for protection and control of 6-35kV busbar type "Альтра" II bus section on substation "Г-1"

/142/ Substation "Г-1"-general view

/143/ Order #189a/129/211a dated 21/07/2008

/144/ Annex #1 for order # 189a/129/211a dated 21/07/2008

/145/ Regulation about anitial verification of electricity meters on JSC EC "Dniprooblenergo"for 2007

/146/ Certificate #16/924 dated 19/05/2011 on verification of work standart

/147/ Certificate #6341 dated 01/09/2011 on verification of work standart

/148/ Standart multifunction meter type ВХ – 33, serial #6341

/149/ Standart multifunction meter type ВХ – 33, serial #064

/150/ Standart monophase meter type ВХ – 14, serial #025

/151/ Certificate #11-П/779 dated 10/08/2011 on analysis of work standart

/152/ Certificate #16/1934 dated 29/10/2011 on analysis of work standart

/153/ Certificate #16/787 dated 28/04/2011 on analysis of work standart

/154/ Standart analysis device type ЦЭ6806П, serial #040099

/155/ Standart analysis device type ZERA

/156/ Standart analysis device type PWS 2.3PLUS – 50085.01, serial #32578

/157/ Analysis passport #81 on active energy meter type СТК3 – 10А1Н9Р, serial #32161

/158/ Analysis passport #132 on active energy meter type EMS 134.001, serial #232850

/159/ Analysis passport #8 on active energy meter type Ф68700В, serial #54245700287

/160/ Analysis passport #318 on active energy meter, serial #0040657

/161/ Analysis passport #81 on active energy meter type СТК3 – 10Q2Н4К4, serial #25248

/162/ Analysis protocol dated 08/09/2011 on meters type «Дельта8010 - 10» 1.05-60А ч1

/163/ Analysis protocol dated 08/09/2011 on meters type «Дельта8010 - 10» 1.05-60А ч2

/164/ Analysis protocol dated 08/09/2011 on meters type «НІК 231АП2» 1.0 5(60)А ч1

/165/ Analysis protocol dated 08/09/2011 on meters type «НІК 231АП2» 1.0 5(60)А ч2

/166/ Analysis protocol dated 07/09/2011 on meters type «НІК2102-02» 1.0 (5-60) and «НІК2102» 1.0 (5-60)

/167/ Statement of Introduction exploitation for automated system of commercial electric power accounting of JSC EC "Dniprooblenergo"for 2007

/168/ Instruction E-36 on exploitation of КРУЕ – 150kV, type PASS MO 170DBB

/169/ Instruction E-36(second part) on exploitation of КРУЕ – 150kV, type PASS MO 170DBB

/170/ Instruction E-23 on exploitation of gas-insulated switchers, type LTB – 170Д

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/ Andriy Deykalo – Head of investment department of PJSC «DTEK Dniprooblenergo»

/2/ Lyudmula Zagnina – Head of department for electricity balance and valuation of process loss of electricity of PJSC «DTEK Dniprooblenergo»

/3/ Larysa Potapenko – Head of the environmental protection group of PJSC «DTEK Dniprooblenergo»

/4/ Alla Gurova – representative of foreing affairs department of PJSC «DTEK Dniprooblenergo»

/5/ Sergiy Bublikov – Technical Director of PJSC «DTEK Dniprooblenergo»

/6/ Yuriy Parshyn – Commercial Director of PJSC «DTEK Dniprooblenergo»

/7/ Roman Prots – representative of "EES" Ltd.

APPENDIX A: VERIFICATION PROTOCOL

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
Project approvals by Parties involved				
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?	Written project approval by the Ukraine #857/23/7 dated 03/04/2012 has been issued by the State Environmental Investment Agency of Ukraine. Written project approval by Party- buyer of GHG emission reductions has been issued (Letter of Approval №DZKiOApek-350-4/32907/11/TK issued by the Minister of Environment of Poland dated 20/07/2011)	OK	OK
91	Are all the written project approvals by Parties involved unconditional?	All the written project approvals are unconditional	OK	OK
Project implementation				
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?	*CAR01* Please indicate correct date and valid version of PDD throw all Monitoring Report *CAR02* The monitoring report indicates project implementation status in the *Table 1* in the section A.6. The determined PDD doesn't contain list of proposed measures. Please provide in the Monitoring Report reference to reliable and transparent source of these data. Also please explain if planned actions for 2008-2012 years are	CAR01 CAR02	OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		different from implemented measures. *CAR03* Please provide an explanation of the difference between the number of reduction units as indicated in the PDD and monitoring report for the reporting period		
93	What is the status of operation of the project during the monitoring period?	The project equipment is in operation during the monitoring period.	OK	OK
Compliance with monitoring plan				
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 has been occurred in accordance with the monitoring plan provided in the PDD which the determination has been deemed final and is available on the UNFCCC website.	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?	Key factors influencing the baseline emissions and risks associated with the project activity level have been taken into account for emission reduction calculation.	OK	OK
95 (b)	Are data sources used for calculating emission reductions or enhancements of net removals clearly identified,	*CAR04* Please provide to AIE next sources to prove calculations reliability:	CAR04	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	reliable and transparent?	- the number of residential consumers - the number of single and three phase electricity meters - the number of electricity meters with different accuracy - the number of induction and electricity meters -		
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?	Emission factor for electric power transmission is used for emission reduction calculation. Value of Emission factor is accepted from year to year by National Environmental Investment Agency Orders.	OK	OK
95 (d)	Is the calculation of emission reductions or enhancements of net removals based on conservative assumptions and the most plausible scenarios in a transparent manner?	The calculation of emission reductions is based on conservative assumptions and the most plausible scenarios in a transparent manner.	OK	OK
Applicable to JI SSC projects only				
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	Not applicable	Not applicable	Not applicable

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	estimated in the PDD for the JI SSC project or the bundle for the monitoring period determined?			
Applicable to bundled JI SSC projects only				
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 monitoring report? Do the monitoring periods not overlap with those for which verifications were already deemed final in the past?	Not applicable	Not applicable	Not applicable
Revision of monitoring plan				
Applicable only if monitoring plan is revised by project participant				
99 (a)	Did the project participants provide an appropriate justification for the proposed revision?	The monitoring plan has not been revised by project participants	Not applicable	Not applicable
99 (b)	Does the proposed revision improve	Not applicable	Not	Not

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	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?		applicable	applicable
Data management				
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 contains in the determined PDD. *CAR05* Please provide in the section C.1 transparent scheme of data collection with indication of monitored parameters and responsible persons	CAR05	OK
101 (b)	Is the function of the monitoring equipment, including its calibration status, is in order?	The function of monitoring equipment including its calibration status is in order. Electric measuring equipment are calibrated by State Enterprise "Dniprostandartmetrologiya" under approved plan	OK	OK
101 (c)	Are the evidence and records used for the monitoring maintained in a traceable manner?	The evidences and records are used for the monitoring maintained in a traceable manner.	OK	OK
101 (d)	Is the data collection and management system for the project in accordance with the monitoring plan?	*CAR06* Please indicate that the data monitored and required to ERUs calculation will be kept two years after the last ERUs transfer. Also please provide to AIE relevant order	CAR06	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
Verification regarding programs of activities (additional elements for assessment)				
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 with previous monitoring periods?	Not applicable	Not applicable	Not 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
Applicable to sample-based approach only				
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	Not applicable	Not applicable	Not applicable

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	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; − The amounts of expected emission reductions of the JPAs being verified; − The number of JPAs for which emission reductions are being verified; − The length of monitoring periods of the JPAs being verified; and − The samples selected for prior verifications, if any?			
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	Not applicable	Not applicable	Not applicable

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	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?			
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
CAR01 Please indicate correct date and valid version of PDD throw all Monitoring Report	92	The correct date and version of the determined PDD has been indicated throw all Monitoring Report version 02 dated 31/01/2012	The corrections of Monitoring Report were provided by the project developer. The issue is closed
CAR02 The monitoring report indicates project implementation status in the *Table 1* in the section A.6. The determined PDD doesn't contain list of proposed measures. Please provide in the Monitoring Report reference to reliable and transparent source of these data. Also please explain, if planned actions for 2008-2012 years are different from implemented measures.	92	All information on project implementation was provided from official and approved sources such as Reports on investment programs realization for relevant year. These Reports have been sent to National energetic Regulatory Commission of Ukraine (NERC), NJSC "Energy Company of Ukraine", Ministry of Fuel and Power of Ukraine. Soft copies of Reports were provided to AIE.	The information concerning in Reports is in line with the ERUs calculation Excel file. The issue is closed.

CAR03 Please provide an explanation of the difference between the number of reduction units as indicated in the PDD and monitoring report for the reporting period	92	Since the determined PDD version 3.0 contains miscalculated ERUs for the period of 2008 – 2010 years, and the monitoring was conducted at the beginning of 2013, then according to Ltd «EES» there had been conducted calculations of ERUs for the year 2011 and for the 2012. The actual amount of emission reductions during the monitoring period differs from values that were indicated in the determinate PDD version 3.0, as a result of using of the differentiated approach to value ratio deterioration of electrical indexes of electrical equipment over time of KP for different billing periods (baseline and current years estimated) while monitoring plan performance, to take account of the effect of improving electrical performance of electrical equipment by introduced measures of TVE reduction. The calculation results for 2008 to 2012 contained in the file Excel«DOE-1BTWE-2008-2012-05-03-2013-Km=1-ok-KP-CO-MR-ENG.xls»	Corrections were found satisfactory. The issue is closed.

CAR04 Please provide to AIE next sources to prove calculations reliability: - the number of residential consumers - the number of single and three phase electricity meters - the number of electricity meters with different accuracy - the number of induction and electricity meters	95(b)	The sources of abovementioned parameters such as Reports on investment programs realization for relevant year, reports on power metering system implementation (67 Form) " A report on the organization of accounting systems of active electrical energy for consumers and installing in electrical grids for consumers and electricity supplying organizations the automated electricity metering and local equipment for data collection and processing (LUZOD)	These data sources were found satisfactory. Concerning in *CAR04* data is in line with ERUs calculation Excel file. The issue is closed.
CAR05 Please provide in the section C.1 transparent scheme of data collection with indication of monitored parameters and responsible persons	101 (a)	Corrections of monitoring scheme were provided. The data flow and responsible persons were indicated in the section C of Monitoring Report version 02 dated 31/01/2012.	Corrections were found satisfactory. The issue is closed.
CAR06 Please indicate that the data monitored and required to ERUs calculation will be kept two years after the last ERUs transfer. Also please provide to AIE relevant order	101(d)	The Monitoring Report version 02 dated 31/01/2012 indicates that the data monitored and required for ERUs calculation will be kept during two years after the last ERUs transfer. Order on data keeping issued by DTEK Dniprooblenergo PJSC has been provided to AIE	Correction of the monitoring report has been provided. The AIE obtained relevant order issued by DTEK Dniprooblenergo PJSC. The issue is closed