VERIFICATION REPORT
CARBON MATKETING AND TRADING LTD

VERIFICATION OF THE

«RECONSTRUCTION OF THE ELECTRICAL AND HEATING SYSTEMS IN KYIV»

REPORT NO. UKRAINE-VER/0848/2012

REVISION NO. 02

BUREAU VERITAS CERTIFICATION

Date of first issue: 30/11/2012	Organizational unit: Bureau Veritas Certification Holding SAS
Client: CARBON MATKETING AND TRADING LTD	Client ref.: Tahir Musayev

Summary:
Bureau Veritas Certification has made the initial, 1st verification of the "Reconstruction of electrical and heating systems in Kyiv", project of PJSC "KYIVENERGO" located in the Kyiv city, 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 Independent 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 Action Requests, Forward Action Requests (CL, 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 8442281 tonnes of CO_2 equivalent for the monitoring period from 01/01/2008 to 31/10/2012.

Our opinion relates to the project 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/0848/2012	Subject Group: JI	
Project title: "Reconstruction of electrical and heating systems in Kyiv"		
Work carried out by: Vyacheslav Yeriomin - team leader, Lead Verifier Sergii Verteletskyi – team member, Verifier		
Work reviewed by: Ivan Sokolov - Internal Technical Reviewer Vasiliy Kobzar – Technical Specialist Iuliia Pylnova – Technical Specialist		
Work approved by: Ivan Sokolov – Operational Manager		
Date of this revision: 05/12/2012	Rev. No.: 02	Number of pages: 53

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1 INTRODUCTION

CARBON MATKETING AND TRADING LTD has commissioned Bureau Veritas Certification to verify the emissions reductions of its JI project “Reconstruction of electrical and heating systems in Kyiv" (hereafter called “the project”) at Kyiv city, 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, 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:

Vyacheslav Yeriomin Bureau Veritas Certification	Team Leader, Climate Change Verifier
Sergii Verteletskyi Bureau Veritas Certification	Climate Change Verifier

This verification report was reviewed by:

Ivan Sokolov
Bureau Veritas Certification, Internal Technical Reviewer

Iullia Pylnova
Bureau Veritas Certification, Technical Specialist

Vasiliy Kobzar
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 CARBON MATKETING AND TRADING LTD 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) 02 and project as described in the determined PDD.

2.2 Follow-up Interviews

On 28/11/2012 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 CARBON MATKETING

AND TRADING LTD and PJSC "KYIVENERGO" were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
PJSC "KYIVENERGO"	Project implementation status Organizational structure Responsibilities and authorities Personnel training Quality management procedures and technology Records of equipment installation Control of metering equipment Metering record keeping system, database Cross-check of the information provided in the MR with other sources
Carbon Marketing and Trading Ltd.	Baseline methodology Monitoring plan Monitoring report Deviations from PDD

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 07 Corrective Action Requests, 03 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

This is initial verification

3.2 Project approval by Parties involved (90-91)

A letter of endorsement from the Ukrainian Designated Focal Point had previously been received for the proposed project, reference No. 2682/23/7, dated 20/09/2012.
A letter of approval from the Ukrainian Designated Focal Point was received for the proposed project, reference No. 3735/23/7, dated 05/12/2012.

A letter of approval from the Netherlands Designated Focal Point was received for the proposed project, reference 2012JI52, dated 28/11/2012.

The abovementioned written approval is unconditional.

3.3 Project implementation (92-93)

The implementation status of the project and key activities are described below in the table:

Sub-project 1

Implemented measures at HPP-5

№	Implemented measures (Name of measure and its short description)	Trade mark of the changed or reconstructed equipment	Quantity of new or reconstructed, units	Year
1.	Heat treatment of the circulation water pipeline and technical water supply schemes at HPP-5, condensers and coolers and clearing them from silt and organic deposits	-	-	2008
2.	Conducting pressure testing gas-fired boilers paths to identify and eliminate non-tightness places	-	-	2008
3.	Cleaning of pipeline part of capacitors	-	-	2008
4.	Optimization of technological losses of steam and condensate in the heating network of power blocks	-	-	2008
5.	Conducting regime-up testing of fuel consumption equipment	-	-	2008
6.	Optimization of the combustion of fuel in the boilers	-	-	2008
7.	Cleaning of PMG power blocks	-	-	2008
8.	Change of heating surfaces of TGMP-314A st.№4	-	KPP VT	2008
9.	Change of heating surfaces of PTVM-180 st.№1	-	convective packages	2008
10.	Identifying and removing places non-tightness of vacuum systems of turbines	-	-	2008
11.	Replacement of valves on т/м №№1÷6 – 6 units and mounted pipeline connection between blocks №2 and №3 on absorption of network pumps	Armature of firm «ADAMS», pipeline	6 98	2008

		Ø82×09		
12.	Reconstruction of vacuum circuit breakers power blocks 6kV st.№№1,2	series BP-1-10-20/630	14	2008
13.	Reconstruction of the switch-offs B-10kV, installed in the circuits of the generator unit of st .№2	FKG2M	1	2008
14.	Reconstruction of the outdated points of telemechanics type MKT-2 for more modern equipment type MKSU	Equipment MKSU 32 TC 16 TV	1	2008
15.	Reconstruction of the outdated recorders РАЦ with replacement for modern recorders of accidents of type «RECON-07 BC»	RECON-07 BC	3	2008
16.	Reconstruction of Na- cationite filter №4	Na-cationite filter №4	1	2008
17.	Reconstruction of battery of bl.st.№3	VARTA Bloc type VB2415	116	2008
18.	Installation of fire alarm systems in material warehouses №1 and №2	Building of the warehouse for materials	5	2008
19.	Heat treatment of the circulation water pipeline and technical water supply schemes at HPP-5, condensers and coolers and clearing them from silt and organic deposits	-	-	2009
20.	Conducting pressure testing gas-fired boilers paths to identify and eliminate non-tightness places	-	-	2009
21.	Cleaning of pipeline part of capacitors	-	-	2009
22.	Optimization of technological losses of steam and condensate in the heating network of power blocks	-	-	2009
23.	Conducting regime-up testing of fuel consumption equipment	-	-	2009
24.	Optimization of the combustion of fuel in the boilers	-	-	2009
25.	Cleaning of PMG power blocks	-	-	2009
26.	Change of heating surfaces of TGM-96A st..№1	-	KPP	2009
27.	Identifying and removing places non-	-	-	2009

	tightness of vacuum systems of turbines			
28.	Reconstruction of stationary mixing collectors of heating networks of HPP-5	1-MK, 1-MK-B, 1-MK-V	3	2009
29.	Replacement of the flow parts ZHEN-1	Block 1	-	2009
30.	Replacement of the flow parts TZHN-4	TG-4	-	2009
31.	Introduction bridge AC	TFRM-330BIIU1-1000-2000U1	3	2009
32.	Reconstruction of HF-Layers at PL-110kV Kharkivska and Luhova	V3-1250-O5 U1	3	2009
33.	Reconstruction leaky oil filled bushing 110kV, installed on transformers T-1A, T-1Б, T-2A, T-2Б, on inputs from solid and polymer insulation (3 items)	GKDPTP-60-110/630	3	2009
34.	Reconstruction of transformers AT-1 AT-2 at OPN-330kV	OPN-330/230/20/ 1200-SHUHL10	3	2009
35.	Reconstruction of battery bl.4	VARTA Bloc type Vb2415	116	2009
36.	Upgrade of auto synchronizer of bl. №№1,2	-	-	2009
37.	Installation of instruments for measuring quality and energy recording	MTE-1420	13	2009
38.	Design and installation of fire alarm	IBK, Joinery, oil household	3	2009
39.	Heat treatment of the circulation water pipeline and technical water supply schemes at HPP-5, condensers and coolers and clearing them from silt and organic deposits	-	-	2010
40.	Conducting pressure testing gas-fired boilers paths to identify and eliminate non-tightness places	-	-	2010
41.	Cleaning of pipeline part of capacitors	-	-	2010
42.	Optimization of technological losses of steam and condensate in the heating network of power blocks	-	-	2010
43.	Conducting regime-up testing of fuel consumption equipment	-	-	2010

44.	Optimization of the combustion of fuel in the boilers	-	-	2010
45.	Cleaning of PMG power blocks	-	-	2010
46.	Change of heating surfaces of TGM-96A st.№2	-	water economizer 1st.	2010
47.	Replacement bulbs for energy saving	-	154	2010
48.	Overhaul flow part of T-250/300-240 st.№3	-	Replace directed. apparatus 13st., diaphragms.14st. and working blades CNT	2010
49.	Done with the establishment of the foundation slippery ball bearing	-	-	2010
50.	Reconstruction of HF-Layers	VZ-1250-05U1	3items	2010
51.	Reconstruction of розрядників 35/110/330 kV autotransformers AT-1, AT-2 at OPN-35/110/330 kV	OPN-P-2-330/230/20/4IIУXL1	3items	2010
52.	Reconstruction leaky oil filled bushing 110kV, installed on transformers T-1A, T-1B, T-2A, T-2B, on inputs from solid and polymer insulation	GKTPIII-90-126/800 01	6	2010
53.	Reconstruction of electricity transformers in bl № 1 VRU-330 kV type TFN at TRN-330 (in terms storm resistance)	TF RM-330VIIU1-1000-2000/U1	3	2010
54.	Placing the air conditioning control panel on water boilers	GFH48K3V 1 14kVт	1	2010
55.	Ventilation system and a burglar alarm at the sites associated with the storage and use of precursors	Protection fence around storage tanks precursors	1	2010
56.	Replacement of instrumentation for temperature control metal power generators №№ 3, 4	Transformer OBEH AC2M Transformer	24 1	2010

		ОВЕН АС4		
57.	Reconstruction of the control system in the presence of hydrogen Tire wires and sumps bearing generators st.. №№ 1 – 4	Control system	4	2010
58.	Providing space battery power blocks №№ 1, 2, 3, 4 by automatic gas detectors	DOZOR-C-5-H26406-4	8	2010
59.	Reconstruction of switch B-10 kV and disconnector RG, installed in the generator circuits G-1	FKG2M	1	2010
60.	Reconstruction fixture units №№3, 4 with replacement by titanium rods	Titanium rods	50	2010
61.	Purchase of mobile laboratory ETL-35	ETL-35K	1	2010
62.	Reconstruction of the tele-mechanics. Installation of instruments for measuring quality and energy recording	PM-130 EH PLUS MTE 1420 1 H3	4 14	2010
63.	Reconstruction of CW	Reverse osmosis	3	2010
64.	Replacement of passenger and freight elevators	LP 4071 GV 2005	2 1	2010
65.	Design and installation of fire alarms	CSHU, BHU-1,2, workshop VRP, workshop EC, MZH	5	2010
66.	Reconstruction of the input and output terminal blending collectors for TM №1-6	Reliance under latch 6 MK-1	1	2010
67.	Heat treatment of the circulation water pipeline and technical water supply schemes at HPP-5, condensers and coolers and clearing them from silt and organic deposits	-	-	2011
68.	Conducting pressure testing gas-fired boilers paths to identify and eliminate non-tightness places	-	-	2011
69.	Cleaning of pipeline part of capacitors	-	-	2011
70.	Optimization of technological losses of steam and condensate in the heating network of power blocks	-	-	2011
71.	Conducting regime-up testing of fuel	-	-	2011

	consumption equipment			
72.	Optimization of the combustion of fuel in the boilers	-	-	2011
73.	Cleaning of PMG power blocks	-	-	2011
74.	Change of heating surfaces of TGM-96A st..№2	-	10 screens SHPP 2st.	2011
75.	Update the testing equipment and laboratory park of electrical and heat measuring instruments	-	-	2011
76.	Reconstruction of CWT	Install ultrafiltration Install electrodeionization	8 3	2011
77.	Installation of smoke exhauster recirculation of exhaust gases at KVGM-180 st. № 5	VGDN-17	1	2011
78.	Completed installation of thermal insulation lens compensators and isolating of smoke exhauster DRG-5	-	-	2011
79.	Reconstruction of autotransformers AT-1,2	overhaul AT 1,2	2	2011
80.	Replacement of passenger and freight elevators	LP 0631 B LP 0401 BE LP 0401 B	1 2 1	2011
81.	Reconstruction of temperature control feed pumps №№1-3	ЖЕН №1-3	3	2011
82.	Reconstruction of feed regulators of boiler at К 1-2 (2 units.) and heaters regulators of high pressure of blocks st.. №1,2 (units)	SKS KRPK 250-00-00-Э SKR 1223-150-0-00-Э	2 2	2011
83.	Installation of video security system at VRP 330/110/35kV	Video cameras BALTER BM-KA44SC	6	2011
84.	Reconstruction of CWT for reducing industrial emissions of substances into the environment	Na-cationite filter	6	2011

85.	Reconstruction of the tele-mechanics. Installation of instruments for measuring quality and energy recording	MTE 1420H3 RM-130EH PLUS	1 1	2011
86.	Installation of air conditioning system at BSHU– 1, BSHU – 2, workshops and laboratories of the stations	NSO7LH6	30	2011
87.	Purchased and commissioned equipment of high pressure	HDP172	1	2011
88.	Mobile laboratory is purchased	ETL-35K	1	2011
89.	Replacing gas relay on autotransformer	BF-80Q URF-25/10	5 3	2011
90.	Reconstruction of reinforcement of power units №№ 3, 4 with the replacement for titanium rods	Titanium rods	247	2011
91.	Design and installation of fire alarms	CSHU, BHU-1,2, workshop VRP, workshop EC, MZH	5	2011
92.	Heat treatment of the circulation water pipelines and maintenance of technical water supply schemes HPP-5, condensers and coolers and clearing them of silt and organic deposits	-	-	2012
93.	Conducting pressure testing of gas-fired boilers paths to identify and eliminate non-tightness places	-	-	2012
94.	Cleaning of pipe system of capacitors	-	-	2012
95.	Optimization of process steam and condensate losses in thermal power scheme	-	-	2012
96.	Conducting regime-up testing fuel consumption equipment	-	-	2012
97.	Optimization of the combustion of fuel in the boilers	-	-	2012
98.	Cleaning of PGM power blocks	-	-	2012
99.	Replacement of heating surfaces TGM-96A st.№2	-	KPP	2012
100.	Change of burners ПТВМ-180 ст.№2	-	6	2012

101.	Reconstruction of chemical plant by using ultrafiltration technology VD-40013	Install ultrafiltration plant elektrofiltrat siyi	8 3	2012
102.	Change of register type H-392, H-394, H-340 for digital type MP-2-TK at central and relay boards TC5-30022	MTE 12301H3	4	2012
103.	Replacing gas relay autotransformer TC5-40011	BF-80Q URF-25/10	4 1	2012
104.	Purchase of balancing machine TC5-50009	Mod. 9K718	1	2012
105.	Installation of air conditioning system TC5-50023	NSOLHG	39	2012
106.	Purchase of oil cleaning equipment TC5-40027	ETMA MSHU-4У1, ETMA UMV 10-3У1, ETMA MDV-12У1, ETMA ПС-1АУ1	1 1 1 1	2012

Implemented measures at HPP-6:

№	Implemented measures	Year
1.	Reconstruction of condensate discharge line from SS-20 to the circulation water pipeline with the establishment of intermediate conduit expander unit №2	2008
2.	Reconstruction with the replacement of battery of power unit №2	2008
3.	Reconstruction of flow part of turbo supplying pump №1	2009
4.	Reconstruction of the installation DC VRP 110/330 kV with replacement of battery	2009
5.	Reconstruction of the feeding pump№1 with the replacement of electric engine	2010
6.	Reconstruction of condensate discharge line from SS -20 to the circulation water pipeline on energy unit №1	2010
7.	Reconstruction of cogeneration power units №№ 1,2	2010
8.	Reconstruction of the roll-out part of cell 6 kV of units №1,2	2010

9.	Reconstruction of the roof floor storage reservoir oil №2	2010
10.	The development of the second stage telemetry HPP -6 with usage of equipment PM 130 PLUS	2010
11.	Reconstruction of continuous power at power units №№1,2	2010
12.	Capitalization (improving OЗ, overhaul boiler repair KVГM №1)	2010
13.	Reconstruction of autotransformer AT2 type ATDCTN-200000/330/110 with replacement of sealed bushing 330 kV	2011
14.	Reconstruction node unloading lime	2011
15.	Reconstruction of input cells КТПСН-0,4 with replacement of machines E-16 “Elektron”	2011
16.	Reconstruction of the roll-out part of cell 6 kV of power units №1,2	2011
17.	Reconstruction of the roof floor storage reservoir oil №6	2011
18.	Reconstruction of automatic circuit protection Input "flare decay in the furnace boiler" on all boiler	2011
19.	Reconstruction of crane management ВК-5 and ВК-6	2011
20.	Replacement of 2 freight elevators of the main building	2011
21.	Reconstruction of the valves in the circuit harness filters block power reducing installation	2011
22.	Reconstruction of gas recording unit	2011
23.	Reconstruction of flow part of turbo supplying pump №2	2012
24.	Reconstruction of the accident registrators of generator units №1,2	2012
25.	Reconstruction of excitation system G-2	2012
26.	Reconstruction of relay protection and automation PL330 kV	2012
27.	Electrification of fittings of spray pool and circulation system	2012
28.	Reconstruction of scheme of recirculation system water boiler VK-6	2012
29.	Reconstruction of dust cleaning installation consisting of storage, handling and preparation of lime	2012
30.	Development of the third stage of telemetry at HPP-6 with usage of equipment PM130PLUS	2012
31.	Reconstruction with the introduction of frequency drive pumps feeding heating network and drain pump	2012

Sub-project 2

District Heating System PJSC "KYIVENERGO" is formed by the three branches: Branch "Heat Networks KYIVENERGO", Branch "Heat Distribution Networks KYIVENERGO" and Branch "Zhytloteploenergo KYIVENERGO".

Key measures under the project activities aimed at reducing GHG emissions into the atmosphere by the Sub-project 2 are:

1. Old operating boilers with low efficiency will be replaced by the new highly efficient ones that will result in efficiency increase from 56-82% up to 90-93%.
2. Rehabilitation of obsolete but able to work boilers with using various technologies, including rehabilitation of screen tubes, burners and control automatic equipment replacement, etc., will lead to 6-9% increase in efficiency.
3. Heat-recovery apparatuses (utilizers)will be installed in order to utilize and recover the exhaust gases heat. The implementation of this technology will result in increasing the fuel consumption efficiency by 6-10%.
4. Switching load from the boiler houses with obsolete equipment to the boiler houses with highly effective equipment.
5. The efficiency of distribution networks system will be considerably increased by:
    - decreasing pipelines length (moving heat generating source closer to consumer, etc.);
    - improving of network organization (replacing 4-pipe lines by 2-pine ones with simultaneous
    - installation of heat exchangers directly at the consumers);
    - replacing of the main network pipes with diameter 57 mm and more by the pre-insulated ones, including produced by “Transprogres” Ltd.

See additional file of sub-project implementation for details.

Sub-project 3

During the monitoring period the following actions were introduced:

Measures	Volume
Implementation of new or reconstruction of existing air wires of electricity transmission lines, km	136.04
Implementation of insulators of electricity transmission lines, units	5960
Implementation of new or reconstruction of existing wires of electricity transmission cables, km	159.147

Introduction of new or reconstruction of existing transformers of substation, units	45
Implementation of new or reconstruction of existing switches of substation, units	275
Implementation of new or reconstruction of existing insulators of substation, units	402
Introduction of new or reconstruction of existing measurement transformers of substation, units	96
Replacement of electricity meters, units	369154
Replacement of electricity meters, units	402166

The volume of the sub-project 3 implementation. electricity transmission lines:

Branch "Cable Networks KYIVENERGO" KYIVENERGO Public Joint Stock Company

The electricity transmission lines (air)				The electricity transmission lines (cable)			
Title	Replaced, km	Replaced insulators units.	Replaced poles pc.	Title	Replaced, km	Replaced insulators units.	Replaced poles pc.
2008							
PL 0.4-10 kV	46.57	834	150	KL 0.4-10 kV	21.6		
PL 35-110 kV	0.3	500		KL 35-110 kV	0.405		
2009							
PL 0.4-10 kV	25.5	637	107	KL 0.4-10 kV	24.6		
PL 35-110 kV	3.47	951		KL 35-110 kV	0.408		
2010							
PL 0.4-10 kV	25.6	501	161	KL 0.4-10 kV	30.9		
PL 35-110 kV	0.3	711		KL 35-110 kV	0.292		
2011							
PL 0.4-10 kV	17.37	498	74	KL 0.4-10 kV	29.6		
PL 35-110 kV	0.42	696	1	KL 35-110 kV	0.266		
2012							

PL 0.4-10 kV	16.34	300	36	KL 0.4-10 kV	25.36		
PL 35-110 kV	0,17	332		KL 35-110 kV	0.178		
Total	136.04	5960	529		133.609		

The volume of the sub-project 3 implementation by voltage:

№	Name of equipment	Voltage class, kV						Total, pc
			2008	2009	2010	2011	2012	
1.	AT and T, SHR	10 kV		17	10	2	1	30
		35 kV	2	1	4			7
		110 kV	3	3	1	1		8
2.	Switches	10 kV	26	165	21	46	16	274
		35 kV					1	1
		110 kV						
3.	Measuring transformers	10 kV	15	27	6	38	9	95
		35 kV					4	4
		110 kV				2	1	3
4.	Support-rod isolation	10 kV	51	79	68	84	15	297
		35 kV	3	15	2	8	7	35
		110 kV	25	2	2	3		32

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, key factors, such as fuel/electricity consumption, heat and electrical energy generation 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, as appropriate.

Data sources used for calculating emission reductions, such as internal reports, statistical forms, measuring equipment and National Inventory Report of anthropogenic emissions of Ukraine 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 is based on conservative assumptions and the most plausible scenarios in a transparent manner.

3.5 Revision of monitoring plan (99-100)

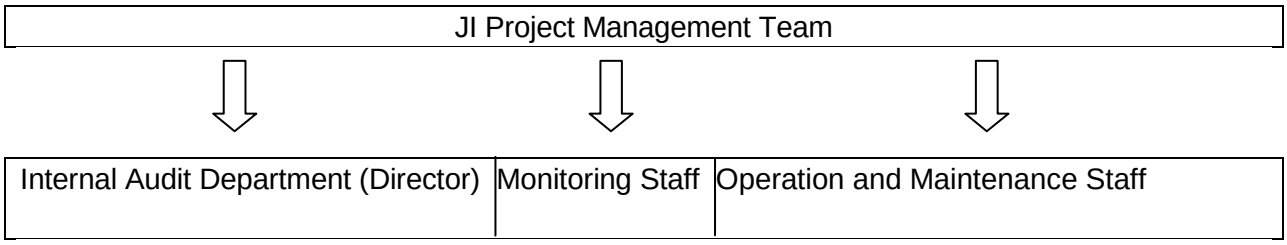
Not applicable

3.6 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. These procedures are mentioned in the section “References” of this report.
The function of the monitoring equipment, including its calibration status, is in order (see excel files: “Vimiruvalny prilady KM.xlsx”, Excel file “Vimiruvalny prilady TEC-5.xlsx”, Excel file “Vimiruvalny prilady TEC-6.xlsx”, “Vimiruvalny prilady TM.xlsx”).

The operational and management structure (as shown in below the figure) and the responsibilities of the principals are as follows. Ultimate responsibility for the project rests with the JI Project Manager.



The JI Project Manager is responsible for:

- Checking and signing off all project operational-related activities
- Appointing and liaising with the accredited independent entity (AIE)
- Identifying an audit team leader to be appointed by the Chief Engineer or a delegated authority
- Appointing a JI technical team to undertake the operational activities
- Organizing training and refresher courses
- Preparing and supervising a Health and Safety Plan for the JI technical team
- Supervising the work of the JI technical team
- Cross checking reported volumes and sales receipts

Internal Audit Department (Director)

The project owner – PJSC "KYIVENERGO” will implement provisions of this monitoring plan into its organizational and quality management structure. For monitoring, collection, registration, visualization, archiving, reporting of the monitored data and periodical

checking of the measurement devices the management team headed by the management led by Project Manager according to the order № 750 dated 01/11/2012.

The monitoring staff is responsible for:

- Monitoring and recording of the relevant parameters

The operation and maintenance staff are responsible for:

- Operation and maintenance of the project infrastructure
- Service and maintenance equipment is performed by technical personnel of PJSC "KYIVENERGO".

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.

3.7 Verification regarding programmes of activities (102-110)

Not applicable

4 VERIFICATION OPINION

Bureau Veritas Certification has performed the initial, 1st periodic verification of the “Reconstruction of electrical and heating systems in Kyiv" Project in 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 "KYIVENERGO” 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 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 2.0 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. Based on the information we have seen and evaluated, we confirm, with a reasonable level of assurance, the following statement:

Sub-project 1

Reporting period: From 01/01/2008 to 31/10/2012

Baseline emissions	:	21449943	tonnes of CO_2 equivalent.
Project emissions	:	16085490	tonnes of CO_2 equivalent.
Emission Reductions	:	5364453	tonnes of CO_2 equivalent.

Sub-project 2

Reporting period: From 01/01/2008 to 31/10/2012

Baseline emissions	:	9917189	tonnes of CO_2 equivalent.
Project emissions	:	8427651	tonnes of CO_2 equivalent.
Emission Reductions	:	1489538	tonnes of CO_2 equivalent.

Sub-project 3

Reporting period: From 01/01/2008 to 31/10/2012

Baseline emissions	:	1588290	tonnes of CO_2 equivalent.
Project emissions	:	0	tonnes of CO_2 equivalent.
Emission Reductions	:	1588290	tonnes of CO_2 equivalent.

Total Emission Reductions : 8442281 tonnes of CO_2 equivalent.

5 REFERENCES

Category 1 Documents:
Documents provided by CARBON MATKETING AND TRADING LTD that relate directly to the GHG components of the project.

/1/ Project Design Document the “Reconstruction of electrical and heating systems in Kyiv" version 2.0 dated 13/11/2012

/2/ Monitoring report “Reconstruction of electrical and heating systems in Kyiv” version 1.0 dated 20/11/2012

/3/ Monitoring report “Reconstruction of electrical and heating systems in Kyiv” version 2.0 dated 05/12/2012

/4/ Excel file “KIEVENERGO_Total tables_MR_updated.xlsx”

/5/ Excel file “KIEVENERGO_Sub-project 1 calculation_MR_updated.xlsx”

/6/ Excel file “KIEVENERGO_Sub-project 2 calculation_MR_updated.xlsx”

/7/ Excel file “KIEVENERGO_Sub-project 3 calculation_MR_updated.xlsx”

/8/ Excel file “Vimiruvalny prilady КМ.xlsx””

/9/ Excel file “Vimiruvalny prilady TEC-5.xlsx”

/10/ Excel file “Vimiruvalny prilady TEC-6.xlsx”

/11/ Excel file “Vprovadgeny zahodu 2008-2012 ТМ та ЖТЕ.xlsx”

/12/ Excel file “Zahodu КМ 2008-2012.xls”

/13/ Letter of Approval # 3735/23/7, dated 05/12/2012 on the JI project “Reconstruction of electrical and heating systems in Kyiv", issued by State Environmental Investment Agency of Ukraine.

/14/ Letter of Approval # 2012JI52, dated 28/11/2012 on the JI project “Reconstruction of electrical and heating systems in Kyiv", issued by Netherlands Designated Focal Point

/15/ Word file “Zahodu TEC56.docx”

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

/1/ Permit # 8036100000-005 on stationary source air pollution, HPP # 5 (valid from 01/07/2010 till 01/07/2015)

/2/ Permit # 8036100000-005 on waste disposal for 2012, HPP # 5 (valid from 01/01/2012 till 01/12/2012)

/3/ Agreement # 06/11-131 БО-41 dated 28/01/2011 natural gas supply service

/4/ Agreement # 06/11-130 БО-41 dated 28/01/2011 natural gas supply service

/5/ Agreement # 06/11-128 БО-41 dated 28/01/2011 natural gas supply service

/6/ Agreement # 06/11-129 БО-41 dated 28/01/2011 natural gas supply service

/7/ Agreement # 06/11-7 ТЕ-41 dated 12/01/2011 natural gas supply service

/8/ Agreement # 06/11-5 ТЕ-41 dated 12/01/2011 natural gas supply service

/9/ Agreement # 06/11-6 ТЕ-41 dated 12/01/2011 natural gas supply service

/10/ Agreement # 06/11-133 ТЕ-41 dated 28/01/2011 natural gas supply service

/11/ Agreement # 06/11-34 dated 28/01/2011 natural gas supply service

/12/ Commissioning statement dated 17/04/2009 on automatic system for commercial accounting of power consumption

/13/ Order # 428 dated 30/11/2010 on automatic system for commercial accounting of power consumption (2 phase)

/14/ Automatic system for commercial accounting of power consumption. Detail project

/15/ Technical report for 2003 (technical part)

/16/ Technical report for 2004 (technical part)

/17/ Technical report for 2005 (technical part)

/18/ Technical report for 2006 (technical part)

/19/ Technical report for 2007 (technical part)

/20/ Technical report for 2008 (technical part)

/21/ Technical report for 2009 (technical part)

/22/ Technical report for 2010 (technical part)

/23/ Technical report for 2011 (technical part)

/24/ Report on HPP work for 2003

/25/ Report on HPP work for 2004

/26/ Report on HPP work for 2004

/27/ Report on HPP work for 2005

/28/ Report on HPP work for 2006

/29/ Report on HPP work for 2007

/30/ Report on HPP work for 2008

/31/ Report on HPP work for 2009

/32/ Report on HPP work for 2010

/33/ Report on HPP work for 2011

/34/ Fuel consuming and production program at PJSC "KYIVENERGO filiations for 2003

/35/ Fuel consuming and production program at PJSC "KYIVENERGO filiations for 2004

/36/ Fuel consuming and production program at PJSC "KYIVENERGO filiations for 2004

/37/ Fuel consuming and production program at PJSC "KYIVENERGO filiations for 2005

/38/ Fuel consuming and production program at PJSC "KYIVENERGO filiations for 2006

/39/ Fuel consuming and production program at PJSC "KYIVENERGO filiations for 2007

/40/ Fuel consuming and production program at PJSC "KYIVENERGO filiations for 2008

/41/ Fuel consuming and production program at PJSC "KYIVENERGO filiations for 2009

/42/ Fuel consuming and production program at PJSC "KYIVENERGO filiations for 2010

/43/ Fuel consuming and production program at PJSC "KYIVENERGO filiations for 2011

/44/ Report on usage of fuel, heat energy and electric energy for 2008

/45/ Report on usage of fuel, heat energy and electric energy for 2009

/46/ Report on usage of fuel, heat energy and electric energy for 2010

/47/ Report on usage of fuel, heat energy and electric energy for 2011

/48/ Report on usage of fuel, heat energy and electric energy for 2003

/49/ Report on usage of fuel, heat energy and electric energy for 2004

/50/ Report on usage of fuel, heat energy and electric energy for 2005

/51/ Report on usage of fuel, heat energy and electric energy for 2006

/52/ Report on usage of fuel, heat energy and electric energy for 2007

/53/ Permit dated 20/04/2011 on special water usage

/54/ Permit dated 21/08/2012 on special water usage

/55/ Agreement # 410 –П157/12 dated 24/02/2012 on Service purchase for state fund

/56/ Inquiry on current repairs at HPP # 5

/57/ Certificate of completion dated 07/09/2010 on the middle repair of block equipment

/58/ Certificate of completion dated 21/07/2010 on the middle repair of block equipment

/59/ Certificate of completion dated 19/07/2010 on the heavy repair of block equipment

/60/ Certificate of completion dated 20/06/2008 on the heavy repair of block equipment

/61/ Certificate of completion dated 04/09/2008 on the heavy repair of block equipment

/62/ Certificate of completion dated 07/07/2009 on the heavy repair of block equipment

/63/ Work committee acceptance act # 1-B dated 29/02/2008 on switchgear – 6 kV

/64/ Work committee acceptance act # 2-B dated 29/02/2008 on switchgear – 6 kV

/65/ Work committee acceptance act # 3-B dated 27/03/2008 on “Reconstruction of telemetry and telesignalization with the replacement of intellectual controlling items type MKSU”

/66/ Work committee acceptance act # 3-B dated 27/03/2008 on construction works readiness

/67/ Work committee acceptance act # 5-B dated 30/04/2008 on construction works readiness

/68/ Work committee acceptance act # 6-B dated 30/05/2008 on construction works readiness

/69/ Work committee acceptance act # 7-B dated 10/07/2008 on construction works readiness

/70/ Work committee acceptance act # 8-B dated 30/07/2008 on construction works readiness

/71/ Work committee acceptance act # 10-B dated 28/11/2008 on construction works readiness

/72/ Work committee acceptance act # 12-B dated 30/12/2008 on construction works readiness

/73/ Work committee acceptance act # 12-B dated 30/12/2008 on construction works readiness

/74/ Work committee acceptance act # 1-B dated 30/06/2009 on construction works readiness

/75/ Work committee acceptance act # 2-B dated 30/06/2009 on construction works readiness

/76/ Work committee acceptance act # 3-B dated 14/10/2009 on construction works readiness

/77/ Work committee acceptance act # 4-B dated 30/10/2009 on construction works readiness

/78/ Work committee acceptance act # 5-B dated 30/11/2009 on construction works readiness

/79/ Work committee acceptance act # 6-B dated 30/11/2009 on construction works readiness

/80/ Work committee acceptance act # 7-B dated 30/12/2009 on construction works readiness

/81/ Work committee acceptance act # 28 dated 30/11/2011 on construction works readiness

/82/ Work committee acceptance act # 1 dated 31/05/2010 on construction works readiness

/83/ Work committee acceptance act # 4 dated 30/07/2010 on construction works readiness

/84/ Work committee acceptance act # 5 dated 27/09/2010 on construction works readiness

/85/ Work committee acceptance act # 10 dated 30/10/2010 on construction works readiness

/86/ Work committee acceptance act # 10 dated 30/12/2010 on construction works

readiness

/87/ Work committee acceptance act # 30 dated 30/12/2010 on construction works readiness

/88/ Work committee acceptance act # 29 dated 30/12/2011 on construction works readiness

/89/ Work committee acceptance act # 27 dated 31/10/2011 on construction works readiness

/90/ Work committee acceptance act # 30 dated 21/10/2011 on construction works readiness

/91/ Work committee acceptance act # 19 dated 29/07/2011 on construction works readiness

/92/ Work committee acceptance act # 17 dated 30/06/2011 on construction works readiness

/93/ Work committee acceptance act # 15 dated 30/06/2011 on construction works readiness

/94/ Work committee acceptance act # 14 dated 31/03/2011 on construction works readiness

/95/ Certificate of verification of the working measuring instrument №39-1/0624 valid until 07/09/2014. Measuring aggregate FLOUTEK-TM, HPP-5, Kyiv city

/96/ Certificate of the central chemic laboratory of chemic workshop, HPP-5, 30/07/2009-29/07/2014, Kyivenergo PJSC

/97/ State metrological certificate № 39.1734.10 of measuring aggregate on the OE-22DM^{IZ} calculator basis dated 01/11/2011 , HPP-6, Kyiv city

/98/ State metrological certificate № 24.879.02 of automatic gas consumption control assembly dated 31/07/2002, HPP-6, Kyiv city

/99/ Certificate of the central chemic laboratory of chemic workshop, HPP-6, 28/05/2009-27/05/2014, Kyivenergo PJSC

/100/ Certificate of a group high voltage test activity and measuring of

electrotechnical laboratory, HPP-6, 26/08/2011-25/08/2014, Kyivenergo PJSC

/101/ Resolution №8036400000-001 on emissions of pollutants into the atmosphere from stationary sources HPP-6, Valid 20/10/2008 - 20/10/2013

/102/ Resolution №8036400000-242 on emissions of pollutants into the atmosphere from stationary sources HPP-6, Valid 12/12/2008 - 12/12/2013

/103/ Resolution №8036400000-001 on wastes allocation in 2012, HPP-6

/104/ Report about HPP operation in 2003, , Kyivenergo PJSC

/105/ Report about assimilation of capital investments in 2011, HPP-5

/106/ Report about assimilation of capital investments in 2008, HPP-6

/107/ Report about assimilation of capital investments in December, 2009, HPP-6

/108/ Report about assimilation of capital investments in 2010, HPP-6

/109/ Report about assimilation of capital investments in 2011, HPP-6

/110/ Annual report of Kyivenergo PJSC for 2010

/111/ Annual report of Kyivenergo PJSC for 2011

/112/ Annual report of Kyivenergo PJSC for 2008

/113/ Annual report of Kyivenergo PJSC for 2003

/114/ Annual report of Kyivenergo PJSC for 2005

/115/ Agreement of service purchasing on state funds with Ukrmetrteststandart, SE dated 24/02/2012

/116/ Report about fuel, heat and power consumption during January-February 2008, Kyivenergo PJSC

/117/ Report about fuel, heat and power consumption during January-

February 2009, Kyivenergo PJSC

/118/ Report about fuel, heat and power consumption during January-February 2010, Kyivenergo PJSC

/119/ Report about fuel, heat and power consumption during January-February 2011, Kyivenergo PJSC

/120/ Protocol №1385 dated 27/01/2012 commission meeting on safety issues testing and technical maintenance

/121/ Master lay-out of automotive column structure of fuel supply workshop, HPP-6

/122/ Protocol of gas quality №4 dated 25/01/2010, HPP-5 Kyiv city

/123/ Protocol of gas quality №1 dated 04/01/2010, HPP-5 Kyiv city

/124/ Protocol of gas quality №148 dated 08/10/2012, HPP-5 Kyiv city

/125/ Protocol of gas quality №06-2 of Boyarskyy LVUMG dated 08/10/2012, HPP-5 Kyiv city

/126/ Protocol of gas quality №07-1 of Boyarskyy LVUMG dated 06/12/2012, HPP-6 Kyiv city

/127/ Protocol of gas chemical analysis dated 04/01/2011

/128/ Protocol of gas chemical analysis dated 10/01/2011

/129/ Protocol of gas chemical analysis dated 17/01/2011

/130/ Protocol of gas chemical analysis dated 24/01/2011

/131/ Protocol of gas chemical analysis dated 31/01/2011

/132/ Protocol of gas chemical analysis dated 07/02/2011

/133/ Protocol of gas chemical analysis dated 14/02/2011

/134/ Protocol of gas chemical analysis dated 21/02/2011

/135/ Protocol of gas chemical analysis dated 28/02/2011

/136/ Protocol of gas chemical analysis dated 09/03/2011

/137/ Protocol of gas chemical analysis dated 14/03/2011

/138/ Protocol of gas chemical analysis dated 21/03/2011

/139/ Protocol of gas chemical analysis dated 28/03/2011

/140/ Protocol of gas chemical analysis dated 04/04/2011

/141/ Protocol of gas chemical analysis dated 11/04/2011

/142/ Protocol of gas chemical analysis dated 26/04/2011

/143/ Protocol of gas chemical analysis dated 04/05/2011

/144/ Protocol of gas chemical analysis dated 10/05/2011

/145/ Protocol of gas chemical analysis dated 16/05/2011

/146/ Protocol of gas chemical analysis dated 23/05/2011

/147/ Protocol of gas chemical analysis dated 06/06/2011

/148/ Protocol of gas chemical analysis dated 14/06/2011

/149/ Protocol of gas chemical analysis dated 20/06/2011

/150/ Protocol of gas chemical analysis dated 29/06/2011

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/153/ Protocol of gas chemical analysis dated 19/07/2011

/154/ Protocol of gas chemical analysis dated 25/07/2011

/155/ Protocol of gas chemical analysis dated 08/08/2011

/156/ Protocol of gas chemical analysis dated 15/08/2011

/157/ Protocol of gas chemical analysis dated 29/08/2011

/158/ Protocol of gas chemical analysis dated 05/09/2011

/159/ Protocol of gas chemical analysis dated 12/09/2011

/160/ Protocol of gas chemical analysis dated 19/09/2011

/161/ Protocol of gas chemical analysis dated 29/09/2011

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/163/ Protocol of gas chemical analysis dated 17/10/2011

/164/ Protocol of gas chemical analysis dated 31/10/2011

/165/ Protocol of gas chemical analysis dated 07/11/2011

/166/ Protocol of gas chemical analysis dated 14/11/2011

/167/ Protocol of gas chemical analysis dated 21/11/2011

/168/ Protocol of gas chemical analysis dated 28/11/2011

/169/ Protocol of gas chemical analysis dated 05/12/2011

/170/ Protocol of gas chemical analysis dated 19/21/2011

/171/ Protocol of gas chemical analysis dated 26/12/2011

/172/ Protocol of gas chemical analysis dated 03/01/2012

/173/ Protocol of gas chemical analysis dated 10/01/2012

/174/ Protocol of gas chemical analysis dated 16/01/2012

/175/ Protocol of gas chemical analysis dated 23/01/2012

/176/ Protocol of gas chemical analysis dated 30/01/2012

/177/ Protocol of gas chemical analysis dated 06/02/2012

/178/ Protocol of gas chemical analysis dated 14/02/2012

/179/ Protocol of gas chemical analysis dated 20/02/2012

/180/ Protocol of gas chemical analysis dated 27/02/2012

/181/ Protocol of gas chemical analysis dated 05/03/2012

/182/ Protocol of gas chemical analysis dated 12/03/2012

/183/ Protocol of gas chemical analysis dated 19/03/2012

/184/ Protocol of gas chemical analysis dated 26/03/2012

/185/ Protocol of gas chemical analysis dated 02/04/2012

/186/ Protocol of gas chemical analysis dated 17/04/2012

/187/ Protocol of gas chemical analysis dated 23/04/2012

/188/ Protocol of gas chemical analysis dated 03/05/2012

/189/ Protocol of gas chemical analysis dated 07/05/2012

/190/ Protocol of gas chemical analysis dated 14/05/2012

/191/ Protocol of gas chemical analysis dated 21/05/2012

/192/ Protocol of gas chemical analysis dated 28/05/2012

/193/ Protocol of gas chemical analysis dated 05/06/2012

/194/ Protocol of gas chemical analysis dated 11/06/2012

/195/ Protocol of gas chemical analysis dated 18/06/2012

/196/ Protocol of gas chemical analysis dated 25/06/2012

/197/ Protocol of gas chemical analysis dated 02/07/2012

/198/ Protocol of gas chemical analysis dated 23/07/2012

/199/ Protocol of gas chemical analysis dated 06/08/2012

/200/ Protocol of gas chemical analysis dated 13/08/2012

/201/ Protocol of gas chemical analysis dated 20/08/2012

/202/ Protocol of gas chemical analysis dated 27/08/2012

/203/ Protocol of gas chemical analysis dated 03/09/2012

/204/ Protocol of gas chemical analysis dated 10/09/2012

/205/ Protocol of gas chemical analysis dated 17/09/2012

/206/ Protocol of gas chemical analysis dated 24/09/2012

/207/ Protocol of gas chemical analysis dated 01/10/2012

/208/ Protocol of gas chemical analysis dated 08/10/2012

/209/ Protocol of gas chemical analysis dated 15/10/2012

/210/ Protocol of gas chemical analysis dated 22/10/2012

/211/ Protocol №12 of fuel oil residue from basins analysis for 0103/2012, HPP-6

/212/ Certificate of special training №826/2 Boyko K.M. – arc welder, HPP-6

/213/ Certificate of special training №826/7 Naumenko O.G. – fitter-plumber, HPP – 6

/214/ Certificate of special training №826/4 Santashov S.A. – specialist, HPP-6

/215/ Acceptation certificate of assembly TG-1 type T-250/300-240 after repair

works dated 25/06/2010, HPP-6

/216/ Acceptation certificate of boiler TGMP-334 A st. №1 after repair works in 2010, HPP-6

/217/ Acceptation certificate of assembly TG-2 type T-250/300-240 after repair works dated 11/07/2011, HPP-6

/218/ Acceptation certificate of boiler TGMP-334 A unit №2 after repair works dated 08/07/2011, HPP-6

/219/ Acceptation certificate of power unit after medium repair works station №1 dated 16/08/2011, HPP-6

/220/ Acceptation certificate of power unit after medium repair works station №2 dated 28/10/2010, HPP-6

/221/ Acceptation certificate of power unit after major repair works station №1 dated 05/10/2009, HPP-6

/222/ Acceptation certificate of power unit after major repair works station №2 dated 10/10/2008, HPP-6

/223/ Acceptation certificate of heating surfaces of the boiler KVGM-180 station №1 after repair works dated 13/05/2012, HPP-6

/224/ Acceptation certificate of heating surfaces of the boiler KVGM-180 station №1 after repair works dated 19/08/2011, HPP-6

/225/ Acceptation certificate of heating surfaces of the boiler KVGM-180 station №1 after repair works dated 16/08/2010, HPP-6

/226/ Acceptation certificate of heating surfaces of the boiler KVGM-180 station №1 after repair works dated 11/10/2009, HPP-6

/227/ Acceptation certificate of heating surfaces of the boiler KVGM-180 station №1 after repair works dated 22/05/2008, HPP-6

/228/ Acceptation certificate of heating surfaces of the boiler KVGM-180 station №1 after repair works dated 21/05/2008, HPP-6

/229/ Acceptation certificate of heating surfaces of the boiler KVGM-180 station №2 after repair works dated 08/06/2012, HPP-6

/230/ Acceptation certificate of welded junctions and boiler collector KVGM-180 station №2 after scarfing dated 04/06/2012, HPP-6

/231/ Acceptation certificate of welded junctions and delivery conduit of boiler KVGM-180 station №2 after scarfing dated 05/06/2012, HPP-6

/232/ Acceptation certificate of overflow pipes of the boiler KVGM-180 station №2 after repair works dated 05/09/2011, HPP-6

/233/ Acceptation certificate of front, medium left and right screens of the boiler KVGM-180 station №2 after repair works dated 01/09/2011, HPP-6

/234/ Acceptation certificate of the rare screen of the boiler KVGM-180 station №2 after repair works dated 05/09/2011, HPP-6

/235/ Acceptation certificate of the rare screen of the boiler KVGM-180 station №2 after repair works dated 07/09/2011, HPP-6

/236/ Acceptation certificate of the boiler KVGM-180 station №2 after repair works dated 05/07/2010, HPP-6

/237/ Acceptation certificate of heating surfaces of the boiler KVGM-180 station №2 after repair works dated 15/05/2009, HPP-6

/238/ Acceptation certificate of the water heating boiler station №2 04/08/2008, HPP-6

/239/ Acceptation certificate of heating surfaces of the boiler KVGM-180 station №3 after repair works dated 29/03/2012, HPP-6

/240/ Acceptation certificate of the pipeline of the boiler KVGM-180 station №3

after repair works dated 29/04/2011, HPP-6

/241/ Acceptation certificate of the boiler KVGM-180 station №3 after repair works dated 08/08/2010, HPP-6

/242/ Acceptation certificate of heating surfaces of the boiler KVGM-180 station №3 after repair works dated 11/06/2009, HPP-6

/243/ Acceptation certificate of the collectors after clearance checking dated 20/05/2011

/244/ Acceptation certificate of the ceiling screen dated 02/10/2008, HPP-6

/245/ Acceptation certificate of heating surfaces of the boiler KVGM-180 station №4 after repair works dated 09/07/2012, HPP-6

/246/ Acceptation certificate of heating surfaces of the boiler KVGM-180 station №4 after repair works dated 19/07/2011, HPP-6

/247/ Acceptation certificate of heating surfaces of the boiler KVGM-180 station №4 after repair works dated 15/10/2010, HPP-6

/248/ Acceptation certificate of heating surfaces of the boiler KVGM-180 station №4 after repair works dated 10/08/2009, HPP-6

/249/ Acceptation certificate KSH KVGM-180 station №4 after repair works dated 30/11/2008, HPP-6

/250/ Acceptation certificate of heating surfaces of the boiler KVGM-180 station №5 after repair works dated 12/04/2012, HPP-6

/251/ Acceptation certificate of heating surfaces of the boiler KVGM-180 station №5 after repair works dated 29/09/2011, HPP-6

/252/ Acceptation certificate of the boiler KVGM-180 station №5 after repair works dated 30/05/2010, HPP-6

/253/ Acceptation certificate of the boiler KVGM-180 station №5 after repair

works dated 19/07/2009, HPP-6

/254/ Acceptation certificate of heating surfaces of the boiler KVGM-180 station №6 after repair works dated 03/09/2012, HPP-6

/255/ Acceptation certificate of heating surfaces of the boiler KVGM-180 station №6 after repair works dated 27/05/2011, HPP-6

/256/ Acceptation certificate of heating surfaces of the boiler KVGM-180 station №6 after repair works dated 19/04/2010, HPP-6

/257/ Acceptation certificate of assembly TG-1 type T-250/300-240 after repair works dated 25/06/2010, HPP-6

/258/ Work-permit №224. Leader Yarmolenko A.N.

/259/ Work-permit №514. Leader Kovalchuk S.V.

/260/ Work-permit №221. Leader Nakonechnyy A.V.

/261/ Passport. Counter EuroAlfa (5 pieces), HPP-5

/262/ Passport №1805 of water heating boiler station №1, HPP-5

/263/ Passport №2482 of steam boiler station №1, HPP-5

/264/ Passport №1806 of water heating boiler, HPP-5

/265/ Passport №1804 of water heating boiler station №1, HPP-5

/266/ Passport №2580 of water heating boiler station №1, HPP-5

/267/ Passport №49 of synchronous turbo generator, HPP-5

/268/ Passport №3687 of the boiler, HPP-5

/269/ Passport №4159 of the boiler, HPP-5

/270/ Passport-protocol. KL-0.4 kw Inertelecom

/271/ Passport-protocol. PL-110 kw Livoberezhna-1

/272/ Passport-protocol. KL-10 kw L-149

/273/ Passport-protocol. PL-330 kw Brovary

/274/ Passport-protocol. TG-2, HPP-6

/275/ Passport-protocol. TG-1, HPP-6

/276/ Passport-protocol. PL-330 kw Severna, HPP-6

/277/ Passport-protocol. PL-110 kw Livoberezhna-2, HPP-6

/278/ Passport-protocol. PL-110 kw HPP-2, HPP-6

/279/ Passport-protocol. PL-110 kw Obolon, HPP-6

/280/ Passport-protocol. OV-110 kw №1, HPP-6

/281/ Passport-protocol. OV-110 kw №2, HPP-6

/282/ Passport-protocol. PL-110 kw Troyeschyna-1, HPP-6

/283/ Passport-protocol. PL-110 kw Troyeschyna-2, HPP-6

/284/ Passport-protocol. PL-110 kw Desnyanska-1, HPP-6

/285/ Passport-protocol. PL-110 kw Desnyanska-2, HPP-6

/286/ Passport-protocol. PL-110 kw Vygurivschyna-1, HPP-6

/287/ Passport-protocol. PL-110 kw Vygurivschyna-2, HPP-6

/288/ Passport-protocol. PL-110 kw Oseschyna, HPP-6

/289/ Passport-protocol. B-6 kw 1T-NDV, HPP-6

/290/ Passport-protocol. B-6 kw 2T-NDV, HPP-6

/291/ Passport-protocol. KL-0.4 kw Sportcomplex-1, HPP-6

/292/ Passport-protocol. KL-0.4 kw Sportcomplex-2, HPP-6

/293/ Passport-protocol. KL-0.4 kw Kyivstan-1, HPP-6

/294/ Passport-protocol. KL-0.4 kw Kyivstan-2, HPP-6

/295/ Passport. TB-7 dated 16/08/2007, HPP-5

/296/ Passport. TB-9 dated 15/08/2007, HPP-5

/297/ Passport. TB-10 dated 16/08/2007, HPP-5

/298/ Passport. PC 76 A dated 16/08/2007, HPP-5

/299/ Passport. TB-8 dated 16/08/2007, HPP-5

/300/ Passport. PC 76 dated 15/08/2007, HPP-5

/301/ Passport. PC 86 dated 17/08/2007, HPP-5

/302/ Passport. PC 85 dated 16/08/2007, HPP-5

/303/ Passport. PC 88 dated 21/09/2004, HPP-5

/304/ Passport. PC 87 dated 17/08/2007, HPP-5

/305/ Accomplishment of capital building plan for 2008

/306/ Accomplishment of capital building plan for 2009

/307/ Accomplishment of capital building plan for 2010

/308/ Accomplishment of capital building plan for 2011

/309/ Accomplishment of capital building plan for 2012

/310/ License # 500347 on electricity production

/311/ License # 578469 on electricity production

/312/ License # 578468 on electricity production

/313/ Act of purchase and sale for October 2008

/314/ Act of purchase and sale for June 2008

/315/ Act of purchase and sale for April 2008

/316/ Act of purchase and sale for October 2009

/317/ Act of purchase and sale for June 2009

/318/ Act of purchase and sale for April 2009

/319/ Act of purchase and sale for October 2010

/320/ Act of purchase and sale for June 2010

/321/ Act of purchase and sale for April 2010

/322/ Act of purchase and sale for October 2011

/323/ Act of purchase and sale for June 2011

/324/ Act of purchase and sale for April 2011

/325/ Report on usage of fuel, heat and electric energy for 2008

/326/ Report on usage of fuel, heat and electric energy for 2009

/327/ Report on usage of fuel, heat and electric energy for 2010

/328/ Report on usage of fuel, heat and electric energy for 2011

/329/ Order # 366 dated 06/12/2010

/330/ Order # 688 dated 29/10/2010

/331/ Order # 366 dated 16/12/2008

/332/ Order # 72 dated 12/12/2008

/333/ Order # 479 dated 24/11/2011

/334/ List of meters “Passports of LG dated 2012.11.27”

/335/ Statistical form # 67 for 2008

/336/ Statistical form # 67 for 2009

/337/ Statistical form # 67 for 2010

/338/ Statistical form # 67 for 2011

/339/ Form of technological loses of electric energy for 2008

/340/ Form of technological loses of electric energy for 2009

/341/ Form of technological loses of electric energy for 2010

/342/ Form of technological loses of electric energy for 2011

/343/ Statistical form 2TP for 2008

/344/ Statistical form 2TP for 2009

/345/ Statistical form 2TP for 2010

/346/ Statistical form 2TP for 2011

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 Gajdukevich – chief of production and technical department, HPP# 6

/2/ Yuriy Sirovec – chief of boiler-and-turbine workshop, HPP# 6

/3/ Vladimir Shiponog– leader of labor protection group, HPP# 6

/4/ Igor Laskoviy – deputy chief engineer of repairmen, HPP# 5

/5/ Vladimir Shirokov – chief of production and technical department, HPP# 5

/6/ Lyubov Kirilenko – accounting team leader of production and technical department, HPP# 5

/7/ Ekaterina Vavrinchuk – specialist of measuring group of electro-and-technical laboratory

/8/ Mykita Galchenko - production and technical department of PJSC "KYIVENERGO"

/9/ Sergii Chulkov – head of production department (JI project head manager), PJSC "KYIVENERGO"

/10/ Victor Semenuta – head of prospective department (JI project head manager), PJSC "KYIVENERGO"

/11/ Igor Poberegniy – 1st category engineer of electric and technical department, PJSC "KYIVENERGO"

/12/ Marina Vorontsova - representative of the project Developer CARBON MATKETING AND TRADING

APPENDIX A: VERIFICATION PROTOCOL
BUREAU VERITAS CERTIFICATION HOLDING SAS

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
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?	CAR01 Please provide the LoA issued by SEIA of Ukraine. CAR02 Please provide the LoA issued by foreign DFPs.	CAR01 CAR02	OK
91	Are all the written project approvals by Parties involved unconditional?	All the written project approvals by Parties involved 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?	CL01 Please clarify if there any changes within the project implementation during the monitoring period? CL02	CL01 CL02 CL03 CAR03	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		Please clarify are all key activities mentioned for 2012 year implemented within the sub-project 1. CL03 Please clarify does the project include heat utilizers that are already installed. CAR03 Please indicate registration number of the project.		
93	What is the status of operation of the project during the monitoring period?	The project was in operation during all 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?	Yes, the monitoring occured in accordance with the monitoring plan included in the registered PDD.	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?	CAR04 Reference # 2 does not work. Please correct it. CAR05 Please correct both the value of carbon dioxide emissions factor at electricity consumption and the carbon dioxide emission factor for projects of power loss reduction in power transport networks of Ukraine for 2009 year (through the all MR).	CAR04 CAR05 CAR06 CAR07	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		CAR06 Please rearrange all formulas in one line with their numeration. CAR07 Please make full translation for table “Heating period duration” and do not leave empty pages (p.24).		
95 (b)	Are data sources used for calculating emission reductions or enhancements of net removals clearly identified, reliable and transparent?	Yes, data sources used for calculating emission reductions are clearly identified, reliable and transparent.	OK	OK
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?	Yes, emission factors, including default emission factors, if used for calculating the emission reductions, are selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice.	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?	Yes, 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	N\A	N\A	N\A

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	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?			
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?	N\A	N\A	N\A
97 (b)	If the determination was conducted on the basis of an overall monitoring plan, have the project participants submitted a common monitoring report?	N\A	N\A	N\A
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?	N\A	N\A	N\A
Revision of monitoring plan				

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
Applicable only if monitoring plan is revised by project participant				
99 (a)	Did the project participants provide an appropriate justification for the proposed revision?	N\A	N\A	N\A
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?	N\A	N\A	N\A
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?	Yes, the implementation of data collection procedures is in accordance with the monitoring plan, including the quality control and quality assurance procedures	OK	OK
101 (b)	Is the function of the monitoring equipment, including its calibration status, in order?	Yes, the function of the monitoring equipment, including its calibration status, is in order.	OK	OK
101 (c)	Are the evidence and records used for the monitoring maintained in a traceable manner?	Yes, the evidence and records used for the monitoring are 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?	Yes, the data collection and management system for the project is in accordance with the monitoring plan. See section C for details.	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
Verification regarding programmes of activities (additional elements for assessment)				
102	Is any JPA that has not been added to the JI PoA not verified?	N\A	N\A	N\A
103	Is the verification based on the monitoring reports of all JPAs to be verified?	N\A	N\A	N\A
103	Does the verification ensure the accuracy and conservativeness of the emission reductions or enhancements of removals generated by each JPA?	N\A	N\A	N\A
104	Does the monitoring period not overlap with previous monitoring periods?	N\A	N\A	N\A
105	If the AIE learns of an erroneously included JPA, has the AIE informed the JISC of its findings in writing?	N\A	N\A	N\A
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	N\A	N\A	N\A

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?	N\A	N\A	N\A
108	Has the AIE made site inspections of at least the square root of the number of total JPAs, rounded to the upper whole	N\A	N\A	N\A

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 ex ante assessment? (Optional)	N\A	N\A	N\A
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?	N\A	N\A	N\A

Table 2 Resolution of Corrective Action and Clarification Requests

Draft report clarification and corrective action requests by verification team	Ref. to checklist question in table 1	Summary of project participant response	Verification team conclusion
CAR01 Please provide the LoA issued by SEIA of Ukraine.	90	LoA from the Ukrainian Designated Focal Point is provided to the verification group.	The issue is closed
CAR02 Please provide the LoA issued by foreign DFPs.	90	LoA from the Netherland Designated Focal Point is provided to the verification group.	The issue is closed
CL01 Please clarify if there any changes within the project implementation during the monitoring period?	92	The monitoring plan is presented in Section D PDD, used without revisions. In monitoring period (sub-project 2) a full-scale reconstruction/modernization with the aim of reducing energy consumption are not implemented, there are single cases of frequency controllers installation. Therefore, the calculation of GHG emissions by reducing energy consumption is not carry out as baseline as project.	The issue is closed

CL02 Please clarify are all key activities mentioned for 2012 year implemented within the sub-project 1.	92	All key activities mentioned for 2012 year implemented within the sub-project 1 is provided in tables “Implemented measures at HPP-5 and HPP-6” of MR.	The issue is closed
CL03 Please clarify does the project include heat utilizers that are already installed.	92	In the monitoring period was installed 1 heat exchanger brand PDV-1,5 on the object of the Branch "Zhytloteploenergo KYIVENERGO" KYIVENERGO Public Joint Stock Company (or ZHTE). More information is available in the annex "Implementation of measures 2008-2012 on TM and ZHTE" in excel format.	The issue is closed

CAR03 Please indicate registration number of the project.	92	In accordance with Joint Implementation Determination and Verification Manual (Version 01) p.90 "The AIE should assess whether at least one written project approval by a Party involved in the JI project, other than the host Party(ies), has been issued by the DFP of that Party when submitting the first verification report to the secretariat for publication in accordance with paragraph 38 of the JI guidelines,at the latest" is not need to indicate registration number of the project in first verification. The registration number of the project will be added in second MR.	The issue is closed
CAR04 Reference # 2 does not work. Please correct it.	95(a)	Reference # 2 is corrected.	The issue is closed
CAR05 Please correct both the value of carbon dioxide emissions factor at electricity consumption and the carbon dioxide emission factor for projects of power loss reduction in power transport networks of Ukraine for 2009 year (through the all MR).	95(a)	Both the value of carbon dioxide emissions factor at electricity consumption and the carbon dioxide emission factor for projects of power loss reduction in power transport networks of Ukraine for 2009 year (through the all MR_eng) is corrected.	The issue is closed

CAR06 Please rearrange all formulas in one line with their numeration.	95(a)	All formulas and numeration is verified and brought into line with request.	The issue is closed
CAR07 Please make full translation for table “Heating period duration” and do not leave empty pages (p.24).	95(a)	Full translation for table “Heating period duration” is made. The empty pages are removed.	The issue is closed