



**BUREAU  
VERITAS**

**VERIFICATION REPORT  
LUHANSK CITY MUNICIPAL  
ENTERPRISE  
“TEPLOCOMUNENERGO”**

**VERIFICATION OF THE  
“REHABILITATION OF THE DISTRICT  
HEATING SYSTEM IN LUHANSK  
CITY”**

**(THIRD PERIODIC VERIFICATION 01/01/2010-31/12/2010)**

**REPORT No. UKRAINE-VER/0239/2011**

**REVISION No. 03**

**BUREAU VERITAS CERTIFICATION**



VERIFICATION REPORT

Date of first issue: 08/04/2011	Organizational unit: Bureau Veritas Certification Holding SAS
Client: LCME "Teplocomunenergo"	Client ref.: Yuriy Negrey

**Summary:**  
Bureau Veritas Certification has made the 3<sup>rd</sup> periodic verification of the "Rehabilitation of the District Heating System in Luhansk City", JI Registration Reference Number UA1000157, project of Luhansk City Municipal Enterprise (LCME) "Teplocomunenergo" located in Luhansk city, and applying the JI specific approach, on the basis of UNFCCC criteria for the JI, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 6 of the Kyoto Protocol, the JI rules and modalities and the subsequent decisions by the JI Supervisory Committee, as well as the host country criteria.

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

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

In summary, Bureau Veritas Certification confirms that the project is implemented as planned and described in approved project design documents. Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately. The monitoring system is in place and the project is generating GHG emission reductions. The GHG emission reduction is calculated accurately and without material errors, omissions, or misstatements, and the ERUs issued totalize 68576 tons of CO<sub>2</sub>eq for the monitoring period of 01.01.2010 – 31.12.2010.

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

Report No.: UKRAINE-ver/0239/2011	Subject Group: JI
Project title: Rehabilitation of the District Heating System in Luhansk City	
Work carried out by: Oleg Skoblyk – Team Leader, Lead Verifier Vyacheslav Yeriomin – Team Member, Verifier Trainee	
Work reviewed by: Ivan Sokolov – Internal Technical Reviewer	
Work approved by: Flavio Gomes - Operational Manager	
Date of this revision: 19/05/2011	Rev. No.: 03
	Number of pages: 36

*[Handwritten signatures and stamps]*

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## 1 Introduction

LCME “Teplocomunenergo” has commissioned Bureau Veritas Certification to verify the emissions reductions of its JI project Rehabilitation of the District Heating System in Luhansk City (hereafter called “the project”) at Luhansk 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 and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations.

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

### 1.3 Verification Team

The verification team consists of the following personnel:

Oleg Skoblyk  
Bureau Veritas Certification Team Leader, Climate Change Verifier

Vyacheslav Yeriomin  
Bureau Veritas Certification Team Member, Climate Change Verifier  
Trainee

This verification report was reviewed by:

Ivan Sokolov



Bureau Veritas Certification, Internal Technical Reviewer

## 2 Methodology

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

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

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

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

### 2.1 Review of Documents

The Monitoring Report (MR) submitted by Institute of Engineering Ecology and additional background documents related to the project design and baseline, i.e. country Law, Project Design Document (PDD), Approved CDM methodology (if applicable) and/or Guidance on criteria for baseline setting and monitoring, Host party criteria, Kyoto Protocol, Clarifications on Verification Requirements to be Checked by an Accredited Independent Entity were reviewed. After AIE's CARs and CLs, Institute of Engineering Ecology has issued the Monitoring Report version 2.0. Due to the change of carbon emission coefficient values for Ukrainian grid according to the Order of the National Environmental Investment Agency of Ukraine # 43 dated 28.03.2011, Institute of Engineering Ecology has issued the Monitoring Report version 3.0.

The verification findings presented in this report relate to the Monitoring Report version 3.0 and project as described in the determined PDD.

### 2.2 Follow-up Interviews

On 01/04/2011 Bureau Veritas Certification performed on-site interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of LCME "Teplocomunenergo" and Institute of Engineering Ecology were interviewed (see References). The main topics of the interviews are summarized in Table 1.

**Table 1 Interview topics**

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

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

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

If the Verification Team, in assessing the monitoring report and supporting documents, identifies issues that need to be corrected, clarified or improved with regard to the monitoring requirements, it should raise these issues and inform the project participants of these issues in the form of:

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





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 2 Clarification Requests and 2 Corrective Action Requests.

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

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

Written project approval by Host Party has been issued by The National Environmental Investment Agency of Ukraine (#365/23/7 dated 16. 04.2010). Letter of Approval by Netherlands Ministry of Economic Affairs #2010JI02 has been issued 03/03/2010 when submitting the first verification report to the secretariat for publication in accordance with paragraph 38 of the JI guidelines, at the latest.

The abovementioned written approval is unconditional.

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

The project "Rehabilitation of the District Heating System in Luhansk City" was initiated in 2006 to rehabilitate Luhansk City's district heating system including boiler and distribution network equipment replacement and rehabilitation, and installation of combined heat and power production plants (CHP) as well as frequency controllers. Project includes 135 boiler-houses with 344 boilers (total connected load 550 Gkal/hour, 2006) and 269 km of heat distributing networks that are managed by LCME "Teplocomunenergo".

Project provides installation of cogeneration units at the three boiler houses - 11 gas engines, 1064 kW. Gas engines-generators machines "Jenbacher" JGS 320 GS (Austria) are considered as potential candidates for installation.

The project employs the increase in fuel consumption efficiency to reduce greenhouse gas emissions relative to current practice. Over 35.8 million Nm<sup>3</sup> of natural gas and 710 ton of coal will be saved annually starting from 2011. Such reduction of fuel consumption is based on increase of the boiler efficiencies, reduction of heat losses in networks and CHP and




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frequency controllers installation. The following activities will ensure fuel saving:

- Replacement of old boilers by the new highly efficient boilers;
- Switching of load from boiler-houses with obsolete equipment to modern equipped boiler houses;
- Switching of boiler-houses from coal to natural gas;
- Improving of the network organization;
- Application of the pre-insulated pipes;
- Installation of combined heat and power production units;
- Replacement of heat exchangers;
- Installation of heat pump station;
- Installation of frequency controllers at electric drives of draught-blowing equipment and hot water pumps motors.

Implementation of boiler houses rehabilitation and network rehabilitation are realized mainly according to project plan with some deviations from time-table. In several cases replacement of different (from planned before) diameters of network pipes takes place. Installation of frequency controllers is not finished yet. Implementation of CHP units and HPS unit is delayed due to lack of financing.

Table of implemented energy saving measures is presented bellow.

Implemented energy saving measures	Volume of performed works (number of boilers, length of network replacement, etc.)		
	2003-2009	2010	Total
Reconstruction of boiler	97	57	154
Replacement of boiler's convection part	21		21
Replacement of boiler's ceiling screens	6		6
Replacement of boiler's screen tubes	3	1	4
Replacement of boiler's heating surface	1		1
Switching boiler to water-heating mode	2		2
Reconstruction of setting	18	1	19
Replacement of boiler's burners	36	13	49
Installation of automatic system for boilers	20	6	26
Switching of boiler-houses' load to the more effective ones	6	4	10
<b>Replacement of boilers:</b>			
KSVa-3G	3		3






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AOGV-100	3		3
KOLVI-500		2	2
KOLVI - 1000 - 2,6 MW	2		2
Vitomax 200 LW- 40 MW	4		4
MH120 EKO "Bernard" - 360 kW	2		2
IVAR Superac 290 2F - 600 KW	2		2
MH120 EKO "Bernard" - 420 kW	4		4
«Super Rac-2F-345»	6		6
KTN-50		2	2
KTN-100		2	2
Building of boiler-house	1		1
Replacement of tank-accumulators	1		1
Heat exchangers replacement	4	3	7
Pumps replacement		2	2
Frequency controllers installation	12		12
Replacement of capacitors	7		7
Reconstruction of chemical water treatment (CWT)		7	7
Reconstruction of filters		7	7
Network rehabilitation with pre-insulated pipes, m	41432	43044	84476
Network rehabilitation with usual pipes, m	87070		87070

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

The monitoring occurred in accordance with the monitoring plan included in the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website.

For calculating the emission reductions key factors influencing the baseline emissions and the activity level of the project as well as risks associated with the project were taken into account, as appropriate.

Data sources used for calculating emission reductions 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.

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

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

Not applicable.

**3.5 Data management (101)**

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

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

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

Measurement equipment calibration was carried out by SE "Luhanskstandartmetrologiya" according to Agreement #48030-2009 from 12.01.2009.

Calibration of correctors type «Тандем» was carried out by "Bartosh AP" according to Agreement #183-У/28-2010 from 11.05.2010.

Daily outside temperature values are taken by dispatcher of LCME "Teplocomunenergo" from Luhansk Regional Hidrometeorology Center every day of heating period. Luhansk Regional Hidrometeorology Center sends the Report every month for every day of heating period according to Agreements # 3M from 09.10.2008 and # 3M from 03.10.2010

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

Most of boiler-houses equipped with automatic corrector for temperature and pressure. Gas consumption registered automatically. Beside this operator of a boiler-house registers the instrument readings in the paper journal "Journal of registration of boiler-house's operation parameters" every day.

At the boiler-houses that are not equipped with gas volume correctors (at present about 2% of the total number of boiler-houses), operator of a boiler house every 2 hours registers parameters of natural gas (temperature and pressure) in the paper journal "Journal of registration of boiler-house's operation parameters" every 2 hours. These parameters are used to bring gas consumption to normal conditions.

Every day operators transfer values of gas consumption to dispatcher of the regional branch of the LCME "Teplocomunenergo" by phone. Monthly they transfer the paper report.

Regional branches transfer data to Production-Technical Department (PTD) of the LCME "Teplocomunenergo" where they are stored and used for payments with energy sources suppliers.

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

The director of the LCME “Teplocomunenergo”, Mr. Oleksiy Rusakov, appointed the responsible person, Mr. Yuriy Negrey, for the implementation and management of the monitoring process at the LCME “Teplocomunenergo”. Mr. Yuriy Negrey is responsible for supervising of data collection, measurements, calibration, data recording and storage.

Dr. Dmytro Paderno, Deputy director of Institute of the Engineering Ecology, is responsible for JI-project specific baseline and monitoring methodology development.

Ms. Kateryna Korinchuk, engineer of the Institute of Engineering Ecology, is responsible for data processing.

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

Not applicable.

## **4 VERIFICATION OPINION**

Bureau Veritas Certification has performed the 3<sup>rd</sup> periodic verification of the “Rehabilitation of the District Heating System in Luhansk City” Project in Ukraine, which applies the JI specific approach. The verification was performed on the basis of UNFCCC criteria and host country criteria and also on the criteria given to provide for consistent project operations, monitoring and reporting.

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

The management of LCME “Teplocomunenergo” is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions of the project on the basis set out within the project Monitoring and Verification Plan indicated in the final PDD version 06. 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 3.0 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.



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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:

Reporting period: From 01/01/2010 to 31/12/2010

Baseline emissions	:	358737	t CO2 equivalents.
Project emissions	:	290161	t CO2 equivalents.
Emission Reductions	:	68576	t CO2 equivalents.



## 5. REFERENCES

### Category 1 Documents:

Documents provided by LCME “Teplocomunenergo” that relate directly to the GHG components of the project.

- /1/ Project Design Document “Rehabilitation of the district heating system in Luhansk City” version 06 dated December 11, 2009
- /2/ Monitoring Report “Rehabilitation of the district heating system in Luhansk City” version 1.0 dated 30/03/2011
- /3/ Monitoring Report “Rehabilitation of the district heating system in Luhansk City” version 2.0 dated 11/04/2011
- /4/ Monitoring Report “Rehabilitation of the district heating system in Luhansk City” version 3.0 dated 18/05/2011
- /5/ ERU’s calculation model Exel file “Annex\_2-5\_MR3\_Lug-10\_v01 s”
- /6/ ERU’s calculation model Exel file “Annex\_2-5\_MR3\_Lug-10\_v02”
- /7/ ERU’s calculation model Exel file “Annex\_2-5\_MR3\_Lug-10\_v03”
- /8/ Determination and Verification Manual, version 01.
- /9/ Letter of Approval of Netherlands Ministry of Economic Affairs #2010JI02, dated 03/03/2010
- /10/ Letter of Approval of National Environmental Agency of Ukraine #365/27/03, dated 16/04/2010

### Category 2 Documents:

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

1	Feeding pumps Grundfoss, boiler house Brativ Mahovih str. 2
2	Frequency converter Grundfoss
3	Frequency converter Grundfoss
4	Electric meter CA4-U678 зав. № 971245
5	Gas meter #80261
6	Gas volume corrector “Tamdem”
7	Entrance to boiler house at Brativ Mahovih str. 2
8	Entrance to boiler house at Brativ Mahovih str. 2
9	Boiler #2 KOLVI reg. № 4167
10	Boiler #2 parameter chart
11	Boiler #1 KOLVI reg. № 4166
12	Boiler #1 parameter chart
13	Boiler #1 KOLVI
14	Feeding pumps Grundfoss
15	Pump driver Grundfoss
16	Frequency converter Grundfoss
17	Water-level raising unit
18	Gas meter
19	Electric meter #1 Mercury 230 with calibration mark
20	Electric meter #2 Mercury 230 with calibration mark
21	Heat meter SVTU-10M
22	Heat meter SVTU-10M

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23	Installation of heat meter SVTU-10M
24	Installation of heat meter SVTU-10M with calibration mark
25	Dy filters
26	Entrance to boiler house Tzupova str. 5
27	Feeding pumps Grundfoss
28	Feed water pump drive frequency converter of
29	Electric meters
30	Electric meter CP4Y-673M #199137, input #1
31	Electric meter CP4Y-673M #662202, input #1
32	Gas meter with calibration mark
33	Gas corrector with calibration mark
34	Gas meter
35	New burners
36	New burners control panel
37	Boiler TGM-8 №6580 with new burners
38	Boiler TGM-8 №6371 with new burners
39	Gas volume meter OE-22DM
40	Power source of counter OE-22DM
41	Gas meter with calibration mark
42	Gas meter installation
43	Electric meter SL7000 № 53043802
44	Electric meter SL7000 № 53043802
45	Feed water pump frequency converter
46	Feed water pump frequency converter and input panel
47	Salt pump electric engine frequency converter
48	Exhauster #1 frequency converter
49	Exhauster #2 frequency converter
50	Fan #2 frequency converter
51	Frequency converter input panel
52	Exhauster #3 frequency converter and input panel
53	Exhauster #4 frequency converter and input panel
54	Frequency converters and input panel
55	Entrance to boiler house 1 Liniya 8-v
56	Net pumps TP-100-480/2
57	Circulating pump electric drive
58	Gas meter #37797 with volume corrector
59	Active electric energy meter CA4Y-I672M # 678443
60	Entrance to boiler house Sovetskaya str. 73b
61	Frequency converter of exhauster #6
62	Frequency converter and input panel of fan #6
63	Frequency converters and input panels of exhauster and fan ##7
64	Frequency converter and input panel of fan #5
65	Exhauster and fan##4 frequency converters and input panels
66	Condensers installation #1 panel
67	Condensers installation #2 panel



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68	Condensers installation work instruction
69	Active energy meters # 830571 and #286857
70	Reactive energy meters #164532 and # 951077
71	Gas volume counter OE-22DM #30272
72	Power source of counter OE-22DM
73	Entrance to boiler house at Shevchenko block
74	Feed water pumps electric engines frequency converters ##1,2,3
75	Exhausters electric motors frequency converters #1,2,3
76	Input panels, pumps electric drive #1,2,3
77	Exhauster #4 and fan #4 electric engines frequency converters
78	Fan #5 electric engines frequency converter
79	Gas volume counter OE-22DM
80	Power source of counter OE-22DM
81	Gas meter
82	Gas corrector thermometer
83	Electric metering panels
84	Electric meter SL7000 №53026571
85	Electric meter SL7000 №53026538
86	Entrance to boiler house 50 years anniversary of Luhansk defensive
87	Exhauster #3 electric engines frequency converter and input panel
88	Exhauster #2 electric engines frequency converter and input panel
89	Exhauster #1 electric engines frequency converter and input panel
90	Gas volume counter OE-22DM
91	Power source of counter OE-22DM
92	Gas meter
93	Gas meter
94	Electric meter #53078988
95	Electric meter #53078969
96	Reactive power controller
97	Entrance to boiler house Sosiury 2
98	Plate heat exchanger Alfa Laval M6-MFG
99	Plate heat exchanger Alfa Laval M6-MFG
100	Gas meter #12155
101	Gas volume counter OE-22DM
102	Power source of counter OE-22DM
103	Electric meter #088063
104	Entrance to Zapadnaia boiler house
105	Boiler ПТВМ-30М, № 7234
106	Frequency converter #34449
107	Frequency converter #34450
108	Exhausters frequency converters
109	Gas volume counter OE-22DM Power source of counter OE-22DM
110	Exhausters input panels
111	Exhausters input panels



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112	Electric power meter № 43642
113	Calibration meter-calculator ПМ-3В certificate
114	Calibration meter-calculator ДМ 3583М #2575 certificate
115	Calibration meter-calculator ДМ 3583М №2728 certificate
116	Calibration meter-calculator ДМ 3583М № 2569 certificate
117	Calibration meter-calculator ДМ 3583М № 1473 certificate
118	Calibration meter-calculator ДМ 3583М, № 2583 certificate
119	Electronic bridge KCM2-028 № 1062729 passport
120	Electronic bridge KCM2-038 № 3020431 passport
121	Technical manometer MTC 711, №7917 passport
122	Technical manometer MTC 711, №9831 passport
123	Technical manometer MTC 711, №8739 passport
124	Technical manometer MTC 711, №6453 passport
125	Technical manometer MTC 711, №0714 passport
126	Gas corrector ОЕ-22ЛА № 0782 calibration and acceptance certificate
127	Gas meter РГ-К-250-01-0,1-r-5Ex №6976 passport
128	Gas meter GMS-640 №023727 passport
129	Gas meter РГК-100 passport
130	Corrector ОЕ-VPT № 18510 calibration certificate
131	Corrector ОЕ-VPT № 18510 calibration certificate
132	Gas meter РГК-1000-1/30 №1267 passport
133	Gas meter РГК-1000-1/30 №1267 passport
134	Corrector ОЕ-VPT № 28631 passport and calibration certificate
135	Corrector ОЕ-VPT № 28631 passport and calibration certificate
136	Corrector ОЕ-VPT № 6209 passport and calibration certificate
137	Corrector ОЕ-VPT № 6209 passport and calibration certificate
138	Corrector ОЕ-VPT № 27487 passport and calibration certificate
139	Corrector ОЕ-22ДМ № 0346 passport
140	Corrector ОЕ-22ДМ № 0346 accepting and calibration certificate
141	Corrector ОЕ-22ДМ № 0346 based measuring device accepting and calibration certificate
142	Corrector ОЕ-22ДМ № 0344 passport
143	Corrector ОЕ-22ДМ № 0344 accepting and calibration certificate
144	Corrector ОЕ-22ДМ № 0344 based measuring device accepting and calibration certificate
145	Corrector ОЕ-22ДМ № 0343 passport
146	Corrector ОЕ-22ДМ № 0343 accepting and calibration certificate
147	Corrector ОЕ-22ДМ № 0343 based measuring device accepting and calibration certificate
148	Corrector ОЕ-22ДМ № 0427 passport
149	Corrector ОЕ-22ДМ № 0427 accepting and calibration certificate
150	Corrector ОЕ-22ДМ № 0427 based measuring device accepting and calibration certificate
151	Supplying heat energy contract № 809 on 1.11.08



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152	Supplying heat energy contract № 809 on 1.11.08
153	Supplying heat energy contract № 809 on 1.11.08
154	Supplying heat energy contract № 577 on 20.11.08
155	Supplying heat energy contract № 577 on 20.11.08
156	Supplying heat energy contract № 577 on 20.11.08
157	Supplying heat energy contract № 536 on 1.12.07
158	Supplying heat energy contract № 536 on 1.12.07
159	Supplying heat energy contract № 536 on 1.12.07
160	Supplying heat energy contract № 259 on 23.11.09
161	Supplying heat energy contract № 259 on 23.11.09
162	Supplying heat energy contract № 259 on 23.11.09
163	Supplying heat energy contract № 259 on 23.11.09
164	Supplying heat energy contract № 259 on 21.11.08
165	Supplying heat energy contract № 259 on 21.11.08
166	Supplying heat energy contract № 1072 on 1.11.10
167	Supplying heat energy contract № 1072 on 1.11.10
168	Supplying heat energy contract № 1072 on 1.11.10
169	Supplying heat energy contract № 975 on 1.05.10
170	Supplying heat energy contract № 975 on 1.05.10
171	Supplying heat energy contract № 975 on 1.05.10
172	Supplying heat energy contract № 983 on 21.04.10
173	Supplying heat energy contract № 983 on 21.04.10
174	Supplying heat energy contract № 983 on 21.04.10
175	Supplying heat energy contract № 983 on 21.04.10
176	Supplying heat energy contract № 282 on 18.05.10
177	Supplying heat energy contract № 282 on 18.05.10
178	Supplying heat energy contract № 282 on 18.05.10
179	Supplying heat energy contract № 282 on 18.05.10
180	Supplying heat energy contract № 697 on 09.10.07
181	Supplying heat energy contract № 697 on 09.10.07
182	Supplying heat energy contract № 697 on 09.10.07
183	Supplying heat energy contract № 697 on 09.10.07
184	Supplying heat energy contract № 1228 on 12.11.07
185	Supplying heat energy contract № 1228 on 12.11.07
186	Supplying heat energy contract № 1228 on 12.11.07
187	Supplying heat energy contract № 1228 on 12.11.07
188	Supplying heat energy contract № 251 on 25.11.09
189	Supplying heat energy contract № 251 on 25.11.09
190	Supplying heat energy contract № 251 on 25.11.09
191	Supplying heat energy contract № 365 on 15.10.09
192	Supplying heat energy contract № 365 on 15.10.09
193	Supplying heat energy contract № 365 on 15.10.09
194	Supplying heat energy contract № 365 on 15.10.09
195	Commissioning statement and calibration certificate on EMCAS 49П7.230508, installed at Volodarskogo str. boiler house




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196	Commissioning statement and calibration certificate on EMCAS 49П2.230508, installed at 4 <sup>th</sup> Donetsk boiler house
197	Commissioning statement and calibration certificate on EMCAS 03.08109, installed at Shevchenko quarter boiler house
198	Commissioning statement and calibration certificate on EMCAS 49П4.230508, installed at Zakhidna boiler house
199	Commissioning statement and calibration certificate on EMCAS 49П5.230508, installed at Skhidna boiler house
200	Commissioning statement and calibration certificate on EMCAS 49П21.230508, installed at 4 <sup>th</sup> Medgorodok boiler house
201	Electric energy consumption, February 2011
202	Acceptance act #48-06-10 on Alfa Laval heat exchangers installation
203	Acceptance act #20-02-10 on burners replacement
204	Acceptance act #48-06-10 on pumps at Artema 449b installation
205	Acceptance act #05-10-10 on burners replacement
206	Acceptance act #17-10-10 on boilers installation
207	Acceptance act #61-10-09 on water heaters installation
208	Acceptance act on burners replacement at Volodarskogo str. boiler-house
209	Acceptance act on burners replacement at Volodarskogo str. boiler-house
210	Natural gas calorific value certificate December 2010
211	Natural gas calorific value certificate November 2010
212	Natural gas calorific value certificate October 2010
213	Natural gas calorific value certificate September 2010
214	Natural gas calorific value certificate August 2010
215	Natural gas calorific value certificate July 2010
216	Natural gas calorific value certificate June 2010
217	Natural gas calorific value certificate May 2010
218	Natural gas calorific value certificate April 2010
219	Natural gas calorific value certificate March 2010
220	Natural gas calorific value certificate February 2010
221	Natural gas calorific value certificate January 2010
222	Fuel coal calorific value certificate #99
223	Fuel coal calorific value certificate #3
224	Fuel coal calorific value certificate #59
225	Fuel coal calorific value certificate #109
226	Fuel coal calorific value certificate #214
227	Fuel coal calorific value certificate #143
228	Fuel coal calorific value certificate #278
229	Fuel coal calorific value certificate
230	11mtp form 2010 year
231	2tp form 4 <sup>th</sup> quarter 2010
232	Luhansk city average monthly temperature, December 2010



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233	Luhansk city average monthly temperature, November 2010
234	Luhansk city average monthly temperature, 15-30 of October 2010
235	Luhansk city average monthly temperature, 1-15 April 2010
236	Luhansk city average monthly temperature, March 2010
237	Luhansk city average monthly temperature, February 2010
238	Luhansk city average monthly temperature, January 2010
239	Executive committee of Luhansk city decision on the end of heating period № 76 by 31.03.10
240	Executive committee of Luhansk city decision on the begin of heating period № 265 by 4.10.10
241	Acceptance act on installation equipment from 17.12.10 at 1 <sup>st</sup> Linia 8a boiler-house
242	Bying-selling act on equipment from 17.12.10 at Skhidnyi quarter 23a boiler-house
243	Commissioning act on installation equipment from 17.12.10 at Skhidnyi quarter 23a boiler-house
244	Commissioning act on installation equipment from 28.11.10 at Tsupova 5b boiler-house
245	Bying-selling act on equipment from 9.11.10 at Brativ Makhovyh 2 boiler-house
246	Commissioning act on installation equipment from 09.11.10 at Brativ Makhovyh 2 boiler-house
247	Commissioning act on installation equipment from 8.11.10 at Tsupova 5b boiler-house
248	Heat supply contracts register
249	Commissioning act on installation equipment at quarter Shevchenko boiler-house
250	Commissioning act on installation equipment at quarter Shevchenko boiler-house
251	Commissioning act on installation equipment at quarter Shevchenko boiler-house
252	Commissioning act on installation equipment at quarter Shevchenko boiler-house
253	Commissioning act on installation equipment from 5.2010 at Volodarskogo street boiler-house
254	Commissioning act on installation equipment from 5.2010 at Medhorodok boiler-house
255	Commissioning act on installation equipment from 5.2010 at "Odiah" enterprise boiler-house
256	Commissioning act on installation equipment from 5.2010 at "Odiah" enterprise boiler-house
257	Commissioning act on installation equipment from 5.2010 at quarter Shevchenko boiler-house
258	Commissioning act on installation equipment from 5.2010 at quarter Shevchenko boiler-house
259	Commissioning act on installation equipment from 5.2010 at quarter





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	Shevchenko boiler-house
260	Commissioning act on installation equipment from 5.2010 at quarter Shevchenko boiler-house
261	Leninskyi district hot water consumers register
262	Kamene-Bridskyi district hot water consumers register
263	Artemivskyi district hot water consumers register
264	Zhovtnevyi district hot water consumers register
265	Zhovtnevyi EU fuel consumption, January 2010
266	Schools #34,35,39 fuel consumption calculation
267	School #34 boiler house heat energy production calculation, January 2010
268	School #35 boiler house heat energy production calculation, January 2010
269	School #39 boiler house heat energy production calculation, January 2010
270	Zhovtnevyi EU fuel consumption, February 2010
271	School #35 boiler house heat energy production calculation, February 2010
272	School #34 boiler house heat energy production calculation, February 2010
273	School #39 boiler house heat energy production calculation, February 2010
274	Zhovtnevyi EU fuel consumption, March 2010
275	School #34 boiler house heat energy production calculation, March 2010
276	School #35 boiler house heat energy production calculation, March 2010
277	School #39 boiler house heat energy production calculation, March 2010
278	Zhovtnevyi EU fuel consumption, April 2010
279	School #35 boiler house heat energy production calculation, April 2010
280	School #34 boiler house heat energy production calculation, April 2010
281	School #39 boiler house heat energy production calculation, April 2010
282	Zhovtnevyi EU fuel consumption, October 2010
283	School #34 boiler house heat energy production calculation, October 2010
284	School #35 boiler house heat energy production calculation, October 2010
285	School #39 boiler house heat energy production calculation, October 2010
286	Zhovtnevyi EU fuel consumption, November 2010
287	Preventive maintenance
288	School #39 boiler house heat energy production calculation,





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	November 2010
289	School #34 boiler house heat energy production calculation, November 2010
290	School #35 boiler house heat energy production calculation, November 2010
291	Zhovtnevyi EU fuel consumption, December 2010
292	Statement on scheduled preventive repair fulfillment
293	School #34 boiler house heat energy production calculation, December 2010
294	School #34 boiler house heat energy production calculation, December 2010
295	School #39 boiler house heat energy production calculation, December 2010
296	Acceptance-transmitting statement on gas used for heating and hot water supply and heat energy production for public establishments, January 2010
297	Acceptance-transmitting statement on gas used for heating and hot water supply and heat energy production for public establishments, February 2010
298	Acceptance-transmitting statement on gas used for heating and hot water supply and heat energy production for public establishments, March 2010
299	Acceptance-transmitting statement on gas used for heating and hot water supply and heat energy production for public establishments, April 2010
300	Acceptance-transmitting statement on gas used for heating and hot water supply and heat energy production for public establishments, May 2010
301	Acceptance-transmitting statement on gas used for heating and hot water supply and heat energy production for public establishments, June 2010
302	Acceptance-transmitting statement on gas used for heating and hot water supply and heat energy production for public establishments, July 2010
303	Acceptance-transmitting statement on gas used for heating and hot water supply and heat energy production for public establishments, August 2010
304	Acceptance-transmitting statement on gas used for heating and hot water supply and heat energy production for public establishments, September 2010
305	Acceptance-transmitting statement on gas used for heating and hot water supply and heat energy production for public establishments, January 2010
306	Order #85 "About changing the order ""About information archiving for monitoring approval" on 25.03.11
307	Protocol #1 "About JI project monitoring"



308	Technical board decision on 18.01.10
309	Order #162 "About archiving information for monitoring approval" on 25.05.10

**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/ Yuriy Negrey - Chief engineer of LCME "Teplocomunenergo"
- /2/ Eleonora Schigoleva - Senior engineer of technical development group of industrial safety department of LCME "Teplocomunenergo"
- /3/ Natalia Balalaeva - Chief of PTD of LCME "Teplocomunenergo"
- /4/ Oksana Konstantinenko - Chief of Heat –Sale Department of LCME "Teplocomunenergo"
- /5/ Lidia Fomenko - Chief of consumers Department of LCME "Teplocomunenergo"
- /6/ Andriy Ulchenko - Chief of Metrology department of LCME "Teplocomunenergo"
- /7/ Dmytro Paderno - Deputy Director of the Institute of Engineering Ecology, Ltd
- /8/ Kateryna Korinchuk - Engineer of the Institute of Engineering Ecology, Ltd



## VERIFICATION REPORT

## APPENDIX A: COMPANY PROJECT VERIFICATION PROTOCOL

## VERIFICATION PROTOCOL

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

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
<b>Project approvals by Parties involved</b>				
90	Has the DFPs of at least one Party involved, other than the host Party, issued a written project approval when submitting the first verification report to the secretariat for publication in accordance with paragraph 38 of the JI guidelines, at the latest?	The project was approved by the Host Party (Ukraine). The Letter of Approval was issued by National Environmental Investment Agency (#365/23/7 dated 16.04.2010). CAR #01 Please provide in Monitoring Report information about project approval by the second Party.	CAR №01	OK
91	Are all the written project approvals by Parties involved unconditional?	The written project approvals by Parties involved are unconditional	OK	OK
<b>Project implementation</b>				
92	Has the project been implemented in accordance with the PDD regarding which the determination has been deemed final and is so listed on the	The project has been implemented in accordance with PDD  CL #01 Please, clarify in Monitoring report difference	CL #01	OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	UNFCCC JI website?	between amount ERU's for the monitoring period in PDD and MR. CL #02 Please, clarify in Monitoring report difference between baseline emissions ERU's for the monitoring period in PDD and MR.	CL #02	OK
93	What is the status of operation of the project during the monitoring period?	The project was in operation during the monitoring period. Rehabilitation of boiler-houses was realized mainly in accordance with project design documents. Installation of frequency converters is not finished. Installation of CHP and HSP units is delayed due to the lack of financing.	OK	OK
<b>Compliance with monitoring plan</b>				
94	Did the monitoring occur in accordance with the monitoring plan included in the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website?	The monitoring occurs in accordance with the monitoring plan included in PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI 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	All key factors influencing the baseline emissions or net removals and the activity level of the project and the emissions or removals as well as risks associated with the project were taken into account, as appropriate for calculating the emission reductions or enhancements of net	OK	OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	the activity level of the project and the emissions or removals as well as risks associated with the project taken into account, as appropriate?	removals.		
95 (b)	Are data sources used for calculating emission reductions or enhancements of net removals clearly identified, reliable and transparent?	The gas consumption is registered automatically. Operator of a boiler-house registers the instrument readings in the paper journal "Journal of registration of boiler-house's operation parameters" every day. At the boiler-houses that are not equipped with gas volume correctors (at present about 2% of the total number of boiler-houses), operator of a boiler house every 2 hours registers parameters of natural gas (temperature and pressure) in the paper journal "Journal of registration of boiler-house's operation parameters" every 2 hours. Every day operators transfer values of gas consumption to dispatcher of the regional branch of the LCME "Teplocomunenergo" by phone. Monthly they transfer the paper report.	OK	OK
95 (c)	Are emission factors, including default emission factors, if used for calculating the emission reductions or enhancements of	Emission factors, including default emission factors are presented in Section B.2.1 and Annex 1 of the Monitoring Report	OK	OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	net removals, selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice?			
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 or enhancements of net removals are based on conservative assumptions and the most plausible scenarios in a transparent manner.	OK	OK
<b>Applicable to JI SSC projects only</b>				
96	Is the relevant threshold to be classified as JI SSC project not exceeded during the monitoring period on an annual average basis? If the threshold is exceeded, is the maximum emission reduction level estimated in the PDD for the JI SSC project or the bundle for the monitoring period determined?	Not applicable	Not applicable	Not applicable
<b>Applicable to bundled JI SSC projects only</b>				
97 (a)	Has the composition of the bundle not changed from that is	Not applicable	Not applicable	Not applicable





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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	stated in F-JI-SSCBUNDLE?			
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
<b>Revision of monitoring plan</b>				
<b>Applicable only if monitoring plan is revised by project participant</b>				
99 (a)	Did the project participants provide an appropriate justification for the proposed revision?	Not applicable	Not applicable	Not applicable
99 (b)	Does the proposed revision improve the accuracy and/or applicability of information	Not applicable	Not applicable	Not applicable



## VERIFICATION REPORT

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	collected compared to the original monitoring plan without changing conformity with the relevant rules and regulations for the establishment of monitoring plans?			
<b>Data management</b>				
101 (a)	Is the implementation of data collection procedures in accordance with the monitoring plan, including the quality control and quality assurance procedures?	CAR #02 Please provide in Monitoring Report description of procedure of collection electric energy consumption data.	CAR #02	OK
101 (b)	Is the function of the monitoring equipment, including its calibration status, is in order?	Calibration is conducted by State Center of Metrology and Standardization. The documents that confirm calibration were provided for the verification team.	OK	OK
101 (c)	Are the evidence and records used for the monitoring maintained in a traceable manner?	Data collection is clearly defined in the monitoring report and is implemented on-site.	OK	OK
101 (d)	Is the data collection and management system for the project in accordance with the monitoring plan?	All data necessary for the CO2 emission reductions calculation is collected. The scheme of data flow is introduced in Monitoring report.	OK	OK
<b>Verification regarding programs of activities (additional elements for assessment)</b>				



## VERIFICATION REPORT

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
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
<b>Applicable to sample-based approach only</b>				
106	Does the sampling plan prepared by the AIE: (a) Describe its sample selection, taking into account that: (i) For each verification that uses a sample-based approach, the sample selection shall be	Not applicable	Not applicable	Not applicable



## VERIFICATION REPORT

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	<p>sufficiently representative of the JPAs in the JI PoA such extrapolation to all JPAs identified for that verification is reasonable, taking into account differences among the characteristics of JPAs, such as:</p> <ul style="list-style-type: none"> <li>- The types of JPAs;</li> <li>- The complexity of the applicable technologies and/or measures used;</li> <li>- The geographical location of each JPA;</li> <li>- The amounts of expected emission reductions of the JPAs being verified;</li> <li>- The number of JPAs for which emission reductions are being verified;</li> <li>- The length of monitoring periods of the JPAs being verified; and</li> <li>- The samples selected for prior verifications, if any?</li> </ul>			
107	Is the sampling plan ready for publication through the secretariat	Not applicable	Not applicable	Not applicable



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	along with the verification report and supporting documentation?			
108	Has the AIE made site inspections of at least the square root of the number of total JPAs, rounded to the upper whole number? If the AIE makes no site inspections or fewer site inspections than the square root of the number of total JPAs, rounded to the upper whole number, then does the AIE provide a reasonable explanation and justification?	Not applicable	Not applicable	Not applicable
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



## VERIFICATION REPORT

**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
<p>CAR #01 Please provide in Monitoring Report information about project approval by the second Party.</p>	<p>90</p>	<p>Letter of Approval from the second Party (Party of buyer - The Netherlands) # 2010JI02 was issued on 03.03.2010. This information is added to MR #3 version 2.0. Letter of Approval from The Netherlands is provided to AIE.</p>	<p>The Monitoring Report is corrected. Issue is closed</p>



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<p>CL #01 Please, clarify in Monitoring report difference between amount ERU's for the monitoring period in PDD and MR.</p>	<p>92</p>	<p>As it is described in PDD, the method for prognostic calculations used in PDD and the approach for calculation of actual emission reduction in monitoring plan are principally different.</p> <p>In contrast to PDD, calculations in a MRs are based on actual achieved results of the project implementation with taking into account the actual (both internal and external) conditions for district heating in a reported year (see PDD sections B1, D.1.1 and/or MR section A.5.1). This approach eliminates any possibility of reduction of fuel consumption and correspondingly GHG emission due to incomplete delivery of heat to consumers, is the most appropriate, precise, corresponding to the conservative approach, and the most closely reflects the aims, goals and spirit of Kyoto Protocol.</p> <p>Moreover, the measures that enable to achieve the largest effect are implemented with first-priority, and implementation of the scheduled measures at the majority of objects is accompanied with additional/ associated minor measures that are not predictively calculable.</p> <p>Thus the results of these two approaches should be different by definition. All calculations in a MRs are namely justification of the reality of actually achieved emission reductions in course of implementation energy saving measures in accordance with the PDD.</p>	<p>Issue is closed</p>
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<p>CL #02 Please, clarify in Monitoring report difference between baseline emissions ERU's for the monitoring period in PDD and MR.</p>	92	<p>As it is described in PDD, the Baseline emissions for prognostic calculations used in PDD and the approach for calculation of actual emission reduction in monitoring plan are principally different.</p> <p>In PDD (section D.1.4), the Baseline emissions for any reported year were calculated as emissions in the base year. According to the project specific approach described in PDD (section B1 and D.1.1) and MR (section A.5.1), in MR the Baseline emissions for the reported year were calculated as emissions in the base year, corrected in view of the actual (both internal and external, such as: net calorific value of fuel, quality of heating service, weather changes, changes in customers' number, etc.) conditions in the reported year, - the Dynamic Baseline assumption.</p> <p>Thus the results of these two approaches should be different by definition. Calculations in the MR justify the reality of corrected Baseline emissions corresponding to the reported year, in accordance with the PDD.</p>	Issue is closed
<p>CAR #02 Please provide in Monitoring Report description of procedure of collection electric energy consumption data.</p>	101(a)	<p>This information is provided in MR #3 version 02.</p>	<p>Monitoring Report checked. Issue is closed</p>



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**APPENDIX B: VERIFIERS CV'S****Work carried out by:****Oleg Skoblyk, Specialist (Power Management)**

Climate Change Lead Verifier

Bureau Veritas Ukraine HSE Department project manager.

Oleg Skoblyk has graduated from National Technical University of Ukraine 'Kyiv Polytechnic University' with specialty Power Management. He has successfully completed IRCA registered Lead Auditor Training Course for Environment Management Systems and Quality Management Systems. Oleg Skoblyk has undergone intensive training on Clean Development Mechanism /Joint Implementation and he is involved in the determination/verification of 52 JI projects.

**Vyacheslav Yeriomin, Specialist (Electromechanic)**

Climate Change Verifier Trainee

Bureau Veritas Ukraine HSE Department project manager

Vyacheslav Yeriomin has graduated from National Technical University of Ukraine 'Kyiv Polytechnic University' with specialty Electromechanic. He has experience related to working in a professional position (engineering) involved with the exercises in heavy machinery, electric drive, metallurgy at JSC "Inzhenernyi Dom". Vyacheslav Yeriomin has successfully completed IRCA registered Internal Auditor Training Course for Environment Management Systems and Quality Management Systems as well as IRCA registered Lead Auditor Training Course for Quality Management Systems.

Vyacheslav Yeriomin is involved in the determination/verification of 6 JI projects.

**The verification report was reviewed by:****Ivan G. Sokolov, Dr. Sci. (biology, microbiology)**

Internal Technical Reviewer, Climate Change Lead Verifier, Bureau Veritas Certification Holding SAS Local Climate Change Product Manager for Ukraine

Acting CEO Bureau Veritas Ukraine

He has over 25 years of experience in Research Institute in the field of biochemistry, biotechnology, and microbiology. He is a Lead auditor of Bureau Veritas Certification for Environment Management System (IRCA registered), Quality Management System (IRCA registered), Occupational Health and Safety Management System, and Food Safety Management System. He



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performed over 140 audits since 1999. Also he is Lead Tutor of the IRCA registered ISO 14000 EMS Lead Auditor Training Course, and Lead Tutor of the IRCA registered ISO 9000 QMS Lead Auditor Training Course. He is Lead Tutor of the Clean Development Mechanism /Joint Implementation Lead Verifier Training Course and he was involved in the determination/verification over 60 JI/CDM projects