VERIFICATION REPORT

JSC "OBLTEPLOCOMUNENERGO"

VERIFICATION OF THE DISTRICT HEATING SYSTEM REHABILITATION OF CHERNIHIV REGION

REPORT NO. UKRAINE-VER/0428/2012

REVISION NO. 02

(FOR PERIOD 01/01/2011-31/12/2011)

BUREAU VERITAS CERTIFICATION

Date of first issue:	Organizational unit:
02/03/2012	Bureau Veritas Certification Holding SAS
Client:	**Client ref.:**
JSC "Oblteplocomunenergo"	Yuriy Barbarov

Summary:

Bureau Veritas Certification has made the 5th periodic verification of the "District Heating System Rehabilitation of Chernihiv Region", JI Registration Reference Number UA1000048, project of JSC "Oblteplocomunenergo" located in Chernihiv Region, Ukraine, and applying the JI specific approach, on the basis of UNFCCC criteria for the JI, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 6 of the Kyoto Protocol, the JI rules and modalities and the subsequent decisions by the JI Supervisory Committee, as well as the host country criteria.

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

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

In summary, Bureau Veritas Certification confirms that the project is implemented as planned and described in approved project design documents. Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately. The monitoring system is in place and the project is generating GHG emission reductions. The GHG emission reduction is calculated accurately and without material errors, omissions, or misstatements, and the ERUs issued totalize 109423 tonnes of CO_2eq for the monitoring period 01/01/2011-31/12/2011.

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

Report No.:	Subject Group:
Ukraine-ver/0428/2012	JI
Project title:	
District Heating System Rehabilitation of Chernihiv Region	
Work carried out by:	
Oleg Skoblyk – team leader, lead verifier Vyacheslav Yeriomin – team member, verifier Sergii Verteletskyi – team member, verifier trainee	
Work reviewed by:	
Ivan Sokolov - Internal Technical Reviewer	
Work approved by:	
Flavio Gomes - Operational Manager	
Date of this revision:	Rev. No.:	Number of pages:
19/03/2012	02	30

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1 INTRODUCTION

JSC "Oblteplocomunenergo" has commissioned Bureau Veritas Certification to verify the emissions reductions of its JI project "District Heating System Rehabilitation of Chernihiv Region" (hereafter called "the project") at Chernihiv Region, Ukraine.

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

1.1 Objective

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

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

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

1.2 Scope

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

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

1.3 Verification Team

The verification team consists of the following personnel:
Oleg Skoblyk
Bureau Veritas Certification Team Leader, Climate Change Lead Verifier

Vyacheslav Yeriomin
Bureau Veritas Certification Climate Change Verifier

Sergii Verteletskyi
Certification 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), 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 2.0 and project as described in the determined PDD.

2.2 Follow-up Interviews

On 17/02/2012 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 JSC “Oblteplocomunenergo” 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
JSC "Oblteplocomunenergo"	➢ Organizational structure. ➢ Responsibilities and authorities. ➢ Training of personnel. ➢ Quality management procedures and technology. ➢ Implementation of equipment (records). ➢ Metering equipment control. ➢ Metering record keeping system, database.
CONSULTANT: "Institute of Engineering Ecology" LLC	Monitoring plan Monitoring report Deviations from PDD ERUs calculation model

2.3 Resolution of Clarification, Corrective and Forward Action Requests

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

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

(a) Corrective action request (CAR), requesting the project participants to correct a mistake that is not in accordance with the monitoring plan;

(b) Clarification request (CL), requesting the project participants to provide additional information for the 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 8 Corrective Action Requests, 4 Clarification Requests, and 0 Forward Action Requests.

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

3.1 Remaining issues and FARs from previous verifications

No FARs were raised during previous verification.

3.2 Project approval by Parties involved (90-91)

Written project approval by the Host Party (Ukraine). The letter of approval has been issued by National Environmental Investment Agency of Ukraine (# 5411-k/10/3-10 dated 14/05/2007) 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. Letter of Approval from The Federal Environmental Agency of Germany was issued on 16/07/2009.
The abovementioned written approval is unconditional.

3.3 Project implementation (92-93)

The project was initiated in 2002 to rehabilitate Chernihiv region's district heating system, including boiler and distribution network equipment replacement and rehabilitation.
The 124 boiler-houses with 458 boilers (total maximal connected load 423.9 Gkal/hour, 2002) and 227 km of heat distributing networks in Chernihiv city and Chernihiv Region, which belong to

"Oblteplocomunenergo" are involved in the project as well as the 65 boiler-houses with 223 boilers (total maximal connected load 173.8 Gkal/hour, 2002) and 125 km of heat distributing networks in Chernihiv Region, which belong to other heat supply enterprises that empowered OJSC "Oblteplocomunenergo" to represent their interests in this project.
The total number of boiler-houses which are involved in the project is 189 with 681 boilers and 352 km of heat distribution networks (in the 2-pipe calculation). The following activities ensuring fuel saving were performed before 2008:

- Replacement of old boilers by new highly efficient boilers;
- Upgrading of boilers,
- Upgrading of boilers' burners;
- Installation of heat utilizers, including condensation ones;
- Fuel switch from coal and fuel oil to gas;
- Decreasing pipelines length and replacing the 4-pipe lines by 2-pipe lines, with application of the new insulation and the pre-insulated pipes.

According to the project activity following equipment had been implemented during 2011 year.

Implemented energy saving measures	**Volume of performed works (number of boilers, etc.), pieces**	
	2011	**Total**
JSC „Oblteplocomunenergo"		
Replacement of boilers	**0**	**180**
Replacement of boiler's burners	0	**24**
Replacement of boiler's screen pipes	0	**8**
Replacement of boiler's convection part pipes	0	**3**
Replacement of refractory lining of boilers	0	**5**
Individual heat supply stations installation	**0**	**2**
Load switch	**2**	**4**
Heat utilizers installation	3	**15**
Network rehabilitation, m	935	**21876**

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

The monitoring occurred in accordance with monitoring included to the PDD, thus it was listed on the UNFCCC website.

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

The key activities of the monitoring are described in the MR in details; no deviations from monitoring algorithm were identified. Monitoring factors including parameters to be monitored, measuring equipment and its calibration data are clearly described in Section B of the monitoring report and electronic additional documents and fully coincide with those one prescribed in PDD.

Data sources used for calculating emission reductions, such as a calibrated measuring equipment (gas meters), 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.

Identified problem areas of concern as to compliance of monitoring plan with monitoring methodology, project participants answers and conclusions of Bureau Veritas Certification are described in Annex A to this report.

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

The JSC “Oblteplocomunenergo” has its own heat technical laboratory that is authorized to calibrate the measurement devices for own needs and for other enterprises.

The JSC “Oblteplocomunenergo” carries out calibration of the measurement equipment for the “Nizhynteplomerezhi” Ltd.

Calibration procedure for the ME “Nosivski teplovi merezhi” is carried out by the JSC “Chernihivgas service center”, for the ME “Bahmachteplomerezhi” and the PEHN “Borznateplocomunenergo” - the JSC “Chernihiv State center of standardization, metrology and certification”.

The “Derzhspozhivstandart” of Ukraine and the JSC “Chernihiv State center of standardization, metrology and certification” carry out calibration of the measurement equipment for the ME “Prilukiteplovodopostachannya”.

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

From 2008 the every registration point of the JSC „Oblteplocomunenergo” is equipped with gas consumption correctors of the following types: OE-22 DM, OE-22 LA, KPLG-2.01R throw which information is carried out every hour to united server, installed at the JSC „Oblteplocomunenergo” calculating center.
In addition registration of natural gas consumption in paper journal is carried out too.
Monthly data for the last month, with printout of daily bulletin and final bulletin, are transferred to gas supplying company.

Mr. Oleksiy Teterya, Deputy Head of the Board, has been appointed for the implementation and management of the monitoring process at the JSC “Oblteplocomunenergo”, the “Nizhynteplomerezhi” Ltd, the ME “Prilukiteplovodopostachannya”, the ME “Bahmachteplomerezhi”, the PEHN “Borznateplocomunenergo”, the ME “Nosivski teplovi merezhi”. Mr. Oleksiy Teterya is responsible for supervising data collection, measurements, calibration, data recording and storage.
Dr. Vladimir Gomon, Managing Engineer of the European Institute for safety, security, insurance and environmental technics, is responsible for baseline and monitoring methodology development.
Ms. Kateryna Korinchuk, engineer of the Institute of Engineering Ecology, is responsible for data processing.

3.7 Verification regarding programmes of activities (102-110)

"Not applicable"

4 VERIFICATION OPINION

Bureau Veritas Certification has performed the 5th periodic, verification of the "District Heating System Rehabilitation of Chernihiv Region" Project in Chernihiv Region, 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 JSC "Oblteplocomunenergo" is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions of the project on the basis set out within the project Monitoring Plan indicated in the final PDD version 11. 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 02 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:

Reporting period: From 01/01/2011 to 31/12/2011

Baseline emissions	: 356916	tonnes CO2 equivalent.
Project emissions	: 247493	tonnes CO2 equivalent.
Emission Reductions	: 109423	tonnes CO2 equivalent.

5 REFERENCES

Category 1 Documents:
Documents provided by JSC "Oblteplocomunenergo" that relate directly to the GHG components of the project.

/1/ Project Design Document "District Heating System Rehabilitation of Chernigiv Region" version 11 dated 09 July 2009
/2/ Monitoring Report "District Heating System Rehabilitation of Chernihiv Region" version 02 dated 14 March 2012
/3/ ERU's calculation model Exel file "Annex 2-4_Chern_11_v02"
/4/ Determination and Verification Manual, version 01
/5/ "National inventory report of Ukraine for 1990 – 2009"
/6/ Letter of Approval of Ukrainian Ministry of Environment Protection, № 5411-к/10/3-10 from 14/05/2007
/7/ Letter of Approval of German Federal Environment Agency; German Emission Trading Authority

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

/1/ List of buildings area ("13 Starokazarmenna" boiler-house)
/2/ List of buildings area ("17 Instrumentalna" boiler-house)
/3/ List of buildings area ("95 Hetmana Polubotka" boiler-house)
/4/ List on improved insulation of buildings ("249б Myru" boiler-house)
/5/ List on improved insulation of buildings ("31 Chervonohvardiyska" boiler-house)
/6/ List on improved insulation of buildings ("172 Pershoho Travnia" boiler-house)
/7/ List on improved insulation of buildings ("8 Yeskova" boiler-house)
/8/ List on improved insulation of buildings ("6a Belova" boiler-house)
/9/ Summarized data on boilers planned loads dated 01/01/2012
/10/ Summarized data on boilers planned loads dated 01/07/2011
/11/ Permit # 192.11.74-40.30.0 dated 13/12/2011
/12/ Summarized data on boilers planned loads dated 01/01/2012
/13/ Summarized data on planned loads (separately) dated 01/01/2012
/14/ Order # 105a dated 04/04/2011
/15/ Order # 276 dated 10/10/2011
/16/ Order # 256 dated 06/10/2010
/17/ Heating area on 01/12/2011
/18/ Note on average temperature for January 2011
/19/ Gas quality protocol # 268 dated 27/12/2011
/20/ Gas quality protocol # 262 dated 20/12/2011

/21/ Gas quality protocol # 257 dated 13/12/2011
/22/ Gas quality protocol # 251 dated 06/12/2011
/23/ Gas quality protocol dated 30/12/2011
/24/ Gas quality protocol dated 20/12/2011
/25/ Gas quality protocol dated 12/12/2011
/26/ Gas quality protocol dated 05/12/2011
/27/ Gas quality protocol dated 19/12/2011
/28/ Gas quality protocol # 246 dated 29/11/2011
/29/ Gas quality protocol # 239 dated 22/11/2011
/30/ Gas quality protocol # 233 dated 15/11/2011
/31/ Gas quality protocol # 229 dated 08/11/2011
/32/ Gas quality protocol dated 21/11/2011
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/34/ Gas quality protocol dated 28/11/2011
/35/ Gas quality protocol # 217 dated 25/10/2011
/36/ Gas quality protocol # 211 dated 18/10/2011
/37/ Gas quality protocol # 206 dated 11/10/2011
/38/ Gas quality protocol # 200 dated 04/10/2011
/39/ Gas quality protocol dated 10/10/2011
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/41/ Gas quality protocol dated 31/10/2011
/42/ Gas quality protocol № 197 dated 28/09/2011
/43/ Gas quality protocol № 191 dated 20/09/2011
/44/ Gas quality protocol № 187 dated 13/09/2011
/45/ Gas quality protocol № 181 dated 07/09/2011
/46/ Gas quality protocol № 178 dated 30/08/2011
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/49/ Gas quality protocol № 165 dated 09/08/2011
/50/ Gas quality protocol № 160 dated 02/08/2011
/51/ Gas quality protocol № 155 dated 26/07/2011
/52/ Gas quality protocol № 151 dated 19/07/2011
/53/ Gas quality protocol № 145 dated 12/07/2011
/54/ Gas quality protocol № 140 dated 06/07/2011
/55/ Gas quality protocol № 136 dated 30/06/2011
/56/ Gas quality protocol № 129 dated 21/06/2011
/57/ Gas quality protocol № 126 dated 15/06/2011
/58/ Gas quality protocol № 120 dated 07/06/2011
/59/ Gas quality protocol № 115 dated 31/05/2011
/60/ Gas quality protocol № 108 dated 24/05/2011
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/90/ Gas quality protocol dated 21/02/2011
/91/ Gas quality protocol № 21 dated 26/01/2011
/92/ Gas quality protocol № 13 dated 18/01/2011
/93/ Gas quality protocol № 6 dated 11/01/2011
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/95/ Gas quality protocol dated 30/12/2010
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/100/ Gas quality protocol dated 24/01/2011
/101/ Acceptance and transfer statement dated 28/02/2011 on delivered natural gas
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/111/ Acceptance and transfer statement dated 30/11/2011 on delivered natural gas
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/141/ Inspection committee statement dated 26/12/2011 about acceptance of finished by construction building

/142/ Protocol # 33 dated 26/12/2011
Commission meeting on labor protection knowledge testing

/143/ Protocol # 32 dated 20/12/2011
Commission meeting on labor protection knowledge testing

/144/ Protocol # 31 dated 02/11/2011
Commission meeting on labor protection knowledge testing

/145/ Protocol # 30 dated 01/11/2011
Commission meeting on labor protection knowledge testing

/146/ Protocol # 10 dated 09/08/2011
Commission meeting on labor protection knowledge testing

/147/ Protocol # 65 dated 10/09/2011
Commission meeting on labor protection knowledge testing

/148/ Protocol # 114 dated 08/08/2011
Commission meeting on labor protection knowledge testing

/149/ Protocol extract # 82 dated 03/03/2011
Commission meeting on labor protection knowledge testing

/150/ Heat and water meters acceptance logbook

/151/ Certificate # 3189 dated 15/07/2011 on working measuring equipment calibration

/152/ Certificate # 044П-07/11 dated 15/07/2011 on working etalon calibration

/153/ Certificate # 043П-07/11 dated 15/07/2011 on working etalon calibration

/154/ Certificate # 016П-01/11 dated 15/07/2011 on working etalon calibration

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/160/ Photo – gas meter type G100 ЛГ-К-80-1, serial # 6734

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/177/ List of buildings area (“17 Instrumentalna” boiler-house)

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/ Yurii Barbarov – Head of the board

/2/ Victor Oliinyk - Head of Production Department of the JSC “Chernigivoblteplocomunenergo”.

/3/ Oleksii Teteria – Head of the Technical Development Department of the JSC “Chernigivoblteplocomunenergo”

/4/ Oleksii Havrylenko – Deputy chief of board

/5/ Andrii Sokolenko - Head of division

/6/ Mykola Kolosok - Head of division

/7/ Volodymyr Barko - Head of division

/8/ Kateryna Korinchuk – Scientific researcher

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?	The Project was approved by the Host Party (Letter of Approval #/5411-k/10/3-10 dated 14/05/2007) and Sponsor Party (Letter of Approval # issued by Germany). CAR01 Please provide in the monitoring report reg. # of LoA issued by Germany	CAR01	OK
91	Are all the written project approvals by Parties involved unconditional?	All the written project approvals are unconditional	OK	OK
Project implementation				
92	Has the project been implemented in accordance with the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website?	The project has been implemented in accordance with the determined PDD. CL01 Please explain negative values of ERUs in the ERUs calculation Excel file.	CL01	OK
93	What is the status of operation of the project during the monitoring period?	The project equipment was in operation during the monitoring period.	CAR02	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		CAR02 Please indicate in the monitoring report if the project equipment wasn't in operation during the monitoring period.		
Compliance with monitoring plan				
94	Did the monitoring occur in accordance with the monitoring plan included in the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website?	The monitoring was implemented in accordance with the monitoring plan included in the determined 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?	All key factors influencing the baseline emissions and activity level of the project and the emissions as well as risks associated with the project taken into account as appropriate for calculating the emission reduction. CL02 Please clarify the substantial fluctuation of baseline emissions from year to year.	CL02	OK
95 (b)	Are data sources used for calculating emission reductions or enhancements of net removals clearly identified, reliable and transparent?	The data sources for ERUs calculation are clearly identified, reliable and transparent.	OK	OK
95 (c)	Are emission factors, including default emission factors, if used for calculating	CAR03 Carbon emission factors for different fuels were	CAR03 CL03	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	the emission reductions or enhancements of net removals, selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice?	taken from Table 1-2 of Volume 2, Energy of IPCC 1996 Guidelines for National Greenhouse Gas Inventories. Please use carbon emission factors that were designed by NEIA. CL03 Please clarify difference between amount of gas consumption by boiler-houses in Annex 2 and official report on results of usage of fuel, heat energy and electric energy for 2011 provided during the site visit.		
95 (d)	Is the calculation of emission reductions or enhancements of net removals based on conservative assumptions and the most plausible scenarios in a transparent manner?	The calculation of emission reduction is based on conservative assumptions in a transparent manner CAR04 Please add description for all components in formula # 4 at the end of page 6	CAR04	OK
Applicable to JI SSC projects only				
96	Is the relevant threshold to be classified as JI SSC project not exceeded during the monitoring period on an annual average basis? If the threshold is exceeded, is the maximum emission reduction level estimated in the PDD for the JI SSC	Not applicable	Not applicable	Not applicable

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	project or the bundle for the monitoring period determined?			
Applicable to bundled JI SSC projects only				
97 (a)	Has the composition of the bundle not changed from that is stated in F-JI-SSCBUNDLE?	Not applicable	Not applicable	Not applicable
97 (b)	If the determination was conducted on the basis of an overall monitoring plan, have the project participants submitted a common monitoring report?	Not applicable	Not applicable	Not applicable
98	If the monitoring is based on a monitoring plan that provides for overlapping monitoring periods, are the monitoring periods per component of the project clearly specified in the monitoring report? Do the monitoring periods not overlap with those for which verifications were already deemed final in the past?	Not applicable	Not applicable	Not applicable
Revision of monitoring plan				
Applicable only if monitoring plan is revised by project participant				
99 (a)	Did the project participants provide an appropriate justification for the proposed revision?	The project participants have not revised the monitoring plan during the proposed monitoring period	OK	OK
99 (b)	Does the proposed revision improve the accuracy and/or applicability of	Not applicable	Not applicable	Not applicable

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	information collected compared to the original monitoring plan without changing conformity with the relevant rules and regulations for the establishment of monitoring plans?			
Data management				
101 (a)	Is the implementation of data collection procedures in accordance with the monitoring plan, including the quality control and quality assurance procedures?	The implementation of data collection procedures is in accordance with the monitoring plan, including the quality control and quality assurance procedures. CAR05 Please provide information on the frequency/ periodicity of recording of monitoring parameters.	CAR05	OK
101 (b)	Is the function of the monitoring equipment, including its calibration status, is in order?	CAR06 Please correct link # 6 that is stated at page 17 of Monitoring Report. CAR 07 Please provide correct information in Annex # 4 (Excel file) on meters type GMS-G100-8—1,0-Y2-HU; type РГК—К-250-0.1-01-Х-10-Ex; РГ-К-600-0.1-01-Х-5-Ex and add their appropriate serial numbers. CL04	CAR06 CAR07 CL04	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		Please explain absence of next gas correctors in Annex_2-4: OE-22LA; Flowtec; Etna-sigma and KPLG-2.01R. If needed add appropriate information about these correctors.		
101 (c)	Are the evidence and records used for the monitoring maintained in a traceable manner?	The evidence and records used for the monitoring are maintained in a traceable manner. All information needed for monitoring of emission reductions is stored in paper and/or electronic formats. CAR08 Information provided by Chernihiv "Obleteplocomunenergo" on boilers heated area does not contain next addresses: Haljavyno; Volkovycha, 2 (roof); Eskova, 10 (roof). But these addresses are contained in ANNEX 2. Please explain situation mentioned above.	CAR08	OK
101 (d)	Is the data collection and management system for the project in accordance with the monitoring plan?	All data necessary for the CO_2 emission reductions calculation is collected. The scheme of data flow is introduced in Monitoring report.		OK
Verification regarding programs of activities (additional elements for assessment)				
102	Is any JPA that has not been added to the JI PoA not verified?	Not applicable	Not applicable	Not applicable
103	Is the verification based on the	Not applicable	Not	Not

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	monitoring reports of all JPAs to be verified?		applicable	applicable
103	Does the verification ensure the accuracy and conservativeness of the emission reductions or enhancements of removals generated by each JPA?	Not applicable	Not applicable	Not applicable
104	Does the monitoring period not overlap with previous monitoring periods?	Not applicable	Not applicable	Not applicable
105	If the AIE learns of an erroneously included JPA, has the AIE informed the JISC of its findings in writing?	Not applicable	Not applicable	Not applicable
Applicable to sample-based approach only				
106	Does the sampling plan prepared by the AIE: (a) Describe its sample selection, taking into account that: (i) For each verification that uses a sample-based approach, the sample selection shall be sufficiently representative of the JPAs in the JI PoA such extrapolation to all JPAs identified for that verification is reasonable, taking into account differences among the characteristics of JPAs, such as:	Not applicable	Not applicable	Not applicable

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	− The types of JPAs; − The complexity of the applicable technologies and/or measures used; − The geographical location of each JPA; − The amounts of expected emission reductions of the JPAs being verified; − The number of JPAs for which emission reductions are being verified; − The length of monitoring periods of the JPAs being verified; and − The samples selected for prior verifications, if any?			
107	Is the sampling plan ready for publication through the secretariat along with the verification report and supporting documentation?	Not applicable	Not applicable	Not applicable
108	Has the AIE made site inspections of at least the square root of the number of total JPAs, rounded to the upper whole 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	Not applicable	Not applicable	Not applicable

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	number, then does the AIE provide a reasonable explanation and justification?			
109	Is the sampling plan available for submission to the secretariat for the JISC.s ex ante assessment? (Optional)	Not applicable	Not applicable	Not applicable
110	If the AIE learns of a fraudulently included JPA, a fraudulently monitored JPA or an inflated number of emission reductions claimed in a JI PoA, has the AIE informed the JISC of the fraud in writing?	Not applicable	Not applicable	Not applicable

Table 2 Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1	Summary of project participant response	Verification team conclusion
CAR01 Please provide in the monitoring report reg. # of LoA issued by Germany	90	The reg. # of LoA issued by Germany is added in MR version 02.	Issue is closed.
CL01 Please explain negative values of ERUs in the ERUs calculation Excel file.	92	The negative values of amounts of ERUs show that actual efficiency of some boiler-houses in reported year, with taking into account the actual external conditions (weather conditions, connected load, etc.) was lower then in base year even despite of implementation of energy saving measures.	Issue is closed based on provided information

		Also, some boiler-houses may deliver excess (more than normative) heat.	
CAR02 Please indicate in the monitoring report if the project equipment wasn't in operation during the monitoring period.	93	All the project equipment has been in work during the monitoring period. This information is added in MR version 02 (Section A.6).	Necessary information is provided. The issue is closed.
CL02 Please clarify the substantial fluctuation of baseline emissions from year to year.	95 (a)	For any project year, the baseline is different due to the influence of external factors such as weather conditions, possible changes of the Net Calorific Value of fuel(s), number of customers, heated area, etc. The Baseline and the amount of ERUs for each project year (period) should be corrected with taking into account these and some other factors (the Dynamic Baseline). The Dynamic Baseline is used in the project (see description in PDD Section B, Section D.1.1., Section D.1.1.4. and Section A.5.2. of MR).	Issue is closed, taking into account provided information
CAR03 Carbon emission factors for different fuels were taken from Table 1-2 of Volume 2, Energy of IPCC 1996 Guidelines for National Greenhouse Gas Inventories. Please use	95 (C)	Carbon emission factors for different fuels that were designed by NEIA [National inventory report of Ukraine for 1990 – 2009] are used in MR version 02. Corresponding link is	Carbon emission factors were used as they should be according to National inventory report of Ukraine for 1990 – 2009. Issue is closed.

carbon emission factors that were designed by NEIA.		provided.	
CL03 Please clarify difference between amount of gas consumption by boiler-houses in Annex 2 and official report on results of usage of fuel, heat energy and electric energy for 2011 provided during the site visit.	95 (C)	Not all boiler-houses of Chernihiv city are included into the project and thus in Annex 2. And the official report on results of usage of fuel, heat energy and electric energy contains information for all boiler-houses of Chernihiv city.	The explanation is clear. The issue is closed.
CAR04 Please add description for all components in formula # 4 at the end of page 6	95 (D)	This information is added in MR version 02.	The issue is closed.
CAR05 Please provide information on the frequency/ periodicity of recording of monitoring parameters.	101 (A)	Recording frequency for every monitoring parameter is provided in Annex 1 “Data”.	The issue is closed.
CAR06 Please correct link # 6 that is stated at page 17 of Monitoring Report.	101 (B)	The link is changed to http://oscill.com/files/27082006.pdf in MR version 02.	The Issue is closed based on provided information.
CAR 07 Please provide correct information in Annex # 4 (Excel file) on meters type GMS-G100-8—1,0-Y2-HU; type РГК—К-250-0.1-01-Х-10-Ех; РГ-К-600-0.1-01-Х-5-Ех and add their appropriate serial numbers.	101 (B)	This information is corrected in MR version 02.	Annex #4 contains appropriate technical description. The issue is closed.

CL04 Please explain absence of next gas correctors in Annex_2-4: OE-22LA; Flowtec; Etna-sigma and KPLG-2.01R. If needed add appropriate information about these correctors.	101 (B)	All types of correctors, provided in Section B.2.1 of MR, are used at boiler-houses that are included in the project, and are provided in Annex 4 for relevant boiler-houses. All types of correctors as well as gas flow meters are provided in Annex 4 accordingly to their passports (with using Cyrillic letters), and in Section B.2.1 of MR in English they were translated and provided with using the Latin alphabet.	All data are provided. The issue is closed.
CAR08 Information provided by Chernihiv "Obleteplocomunenergo" on boilers heated area does not contain next addresses: Haljavyno; Volkovycha, 2 (roof); Eskova, 10 (roof). But these addresses are contained in ANNEX 2. Please explain situation mentioned above.	101 (C)	The boiler-houses Volkovycha, 2 (roof); Eskova, 10 (roof) in 2011 were in operation only till the end of heating season 2010-2011 (till April), and then, from the beginning of new 2011-2012 heating season in October, loads from these boiler-houses were switched to boiler-houses Starokazarmenna, 13 (#17) and Eskova, 8 (#39). Chernihiv OJSC "Oblteplocomunenergo" has provided information on boilers heated area for January 1, 2012. Thus for January 1, 2012 boiler-house Starokazarmenna, 13 contains heated area of boiler-house Volkovycha, 2 (roof); and boiler-house Eskova, 8 – of boiler-house Eskova, 10 (roof), respectively.	Provided information justifies existence of mentioned above heated areas. The issue is closed.

		The boiler-house Haljavyno is not a boiler-house of Chernihiv city but Chernihiv district. But it is of municipal property of Chernihiv city and that's why is included into the list of boiler-houses of Chernihiv city in Annex 2, as it was in PDD.	