



BUREAU
VERITAS

VERIFICATION REPORT

RME

“DONETSKTEPLOCOMUNENERGO”

VERIFICATION OF THE
“REHABILITATION OF THE DISTRICT HEATING
SYSTEMS IN MAKIIVKA, MARIUPOL,
ARTEMIVSK CITIES OF DONETSK REGION”

FIFTH PERIODIC FOR 2011
(01 JANUARY 2011 – 31 DECEMBER 2011)

REPORT No. UKRAINE-VER/0295/2011/4

REVISION No. 02

BUREAU VERITAS CERTIFICATION



VERIFICATION REPORT

Date of first issue: 14/05/2012	Organizational unit: Bureau Veritas Certification Holding SAS
Client: RME "Donetskteplocomunenergo"	Client ref.: Mr. Vasyi Vorotyntsev

Summary:

Bureau Veritas Certification has made the 5th periodic verification of the project "Rehabilitation of the District Heating Systems in Makiivka, Mariupol, Artemivsk Cities of Donetsk Region", JI Registration Reference Number UA 1000297, project of RME "Donetskteplocomunenergo" located in the Makiivka, Mariupol, Artemivsk Cities of Donetsk Region, Ukraine and applying JI specific approach, on the basis of UNFCCC criteria for the JI, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 6 of the Kyoto Protocol, the JI rules and modalities and the subsequent decisions by the JI Supervisory Committee, as well as the host country criteria.

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

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

In summary, Bureau Veritas Certification confirms that the project is implemented as per determined changes. 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 without material misstatements, and the ERUs issued totalize 140753 tonnes of CO₂ equivalent for the monitoring period from 01/01/2011 to 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.: UKRAINE-ver/0295/2011/4	Subject Group: JI
Project title: Rehabilitation of the District Heating Systems in Makiivka, Mariupol, Artemivsk Cities of Donetsk Region	
Work carried out by: Team Leader, Lead Verifier: Oleg Skoblyk Team Member, Verifier: Rostislav Topchiy Team Member, Verifier: Vitaliy Minyaylo	
Work reviewed by: Ivan Sokolov – Internal Technical Reviewer <input checked="" type="checkbox"/> No distribution without permission from the Vyacheslav Yeriomin - Technical Expert <input checked="" type="checkbox"/> Client or responsible organizational unit	
Work approved by: Ivan Sokolov – Operational Manger <input type="checkbox"/> Limited distribution	
Date of this revision: 17/05/2012	Rev. No.: 02
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1 INTRODUCTION

RME “Donetskteplocomunenergo” has commissioned Bureau Veritas Certification to verify the emissions reductions of its JI project “Rehabilitation of the District Heating Systems in Makiivka, Mariupol, Artemivsk Cities of Donetsk Region” (hereafter called “the project”) at Makiivka, Mariupol, Artemivsk Cities of Donetsk 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, monitoring plan and monitoring report, and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations.

The verification is not meant to provide any consulting towards the Client. However, stated requests for clarifications 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:

Skoblyk Oleg

Bureau Veritas Certification, Team Leader, Climate Change Lead Verifier

Topchiy Rostislav

Bureau Veritas Certification, Team Member, Climate Change Verifier



Minyaylo Vitaliy
Bureau Veritas Certification, Team Member, Climate Change Verifier

This verification report was reviewed by:

Ivan Sokolov
Bureau Veritas Certification, Internal Technical Reviewer

Vyacheslav Yeriomin
Bureau Veritas Certification, Technical Expert

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 01 of 30/03/2012, version 02 of 26/04/2012 and project as described in the determined PDD.

2.2 Follow-up Interviews

On 05/04/2012 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 RME “Donetskteplocomunenergo”, ME “Makiivteplomerezha”, MCE “Mariupolteplomerezha”, “Artemivsk-Energy”, Ltd. and Institute of Engineering Ecology were interviewed during site visit (see References for the list of interviewed persons). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
RME “Donetskteplocomunenergo”, ME “Makiivteplomerezha”, MCE “Mariupolteplomerezha”, “Artemivsk-Energy”, Ltd.	<ul style="list-style-type: none"> ➤ 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	<ul style="list-style-type: none"> ➤ 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 03 Corrective Action Requests, 04 Clarification Requests, and 01 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

Remaining issues and FARs from previous verification are absent.

3.2 Project approval by Parties involved (90-91)

Written project approval by the Host Party (Ukraine) has been issued by State Environmental Investment Agency of Ukraine # 2811/23/7 dated 28/09/2011, Letter of Approval by Netherlands # 2011JI33 was issued on 14/09/2011, 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 approvals are unconditional.

3.3 Project implementation (92-93)

The project “Rehabilitation of the District Heating Systems in Makiivka, Mariupol, Artemivsk Cities of Donetsk Region” provides for the increase of fuel and electricity consumption efficiency to reduce greenhouse gas emissions relative to current practice.

The project was initiated 15/03/2006. The following activities will ensure fuel saving:

- Replacement of old boilers by the new highly efficient boilers;
- Rehabilitation of boilers with increasing of their efficiency;
- Switching of load from boiler-houses with obsolete equipment to modern equipped boiler houses;
- Switching of boiler-houses from coal to natural gas;
- Burners replacement;
- Installation of heat utilizers;
- Improving of the network organization;
- Application of the pre-insulated pipes;
- Transition from the existing CHSS to IHSS;
- Installation of cogeneration units;
- Replacement of heat exchangers;
- Replacement of pumps;
- Installation of frequency controllers at electric drives of draught-blowing equipment and pumps.

Project provides installation of 174 new highly efficient boilers, modernization of 221 boilers, replacement of burners at 87 boilers, installation of 43 heat utilizers, replacement of 32 heat exchangers, implementation of frequency controllers at electric drives at 45 boiler-houses, replacement of 221 pumps, installation of 11 IHP, rehabilitation of 91.5 km of heat distributing networks (in the 2-pipe calculation), as well as other fuel and energy saving measures.

Project provides also installation of cogeneration units for electricity generation for own needs at 3 boiler-houses – 3 gas engine-generator machines "Caterpillar" (USA) G3520B (1 un.) with capacity 1460 kW, G3520C (1 un.) with capacity 2000 kW, and G3516B (1 un.) with capacity 1165 kW.

Implementation of boiler houses equipment rehabilitation and network rehabilitation was realized mainly according to the project plan with some deviations from time-table.



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Reconstruction of boiler-houses sometimes has insignificant deviations from the project particularly in changes of installed boilers capacity. It was dictated by changes in heat energy demand. In several cases replacement of different (from planned before) diameters of network pipes took place.

Rehabilitation of boilers with using various technologies included, fully or separately, rehabilitation of screen (furnace and convective) tubes, including their replacement and cleaning (mechanical and chemical), burners and control automatic equipment replacement, extraplanned checking and adjusting of boilers' operation conditions.

In 2010 implementation of CHP units has been started. But no CHP unit has been putted into operation yet. Installation of IHSS is delayed.

The actual operation of the proposed project is presented bellow.

Implemented energy saving measures	Volume of performed works (number of boilers, length of network replacement, etc.)		
	2006-2010	2011	Total
ME "Makiivteplomerezha"			
Boilers replacement			
Super Rac 2330	5		5
KSVa-2	3		3
KSVa-0,63	2		2
KSVa -1,0	3		3
Kolvi-300	2		2
BGV-50E	12		12
Rac 1060	3		3
Sunier duval	3		3
REX-200	2		2
REX-100	7		7
Modul Bernard 120	10		10
Super Rac 465	2		2
Super Rac 2100	2		2
Super Rac 2910	3		3
Super Rac 345	4		4
KVT - 1	4		4
NIISTU-5	0	2	2
Total	67	2	69
Reconstruction of boilers	0	3	3



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Rehabilitation of network, m	8012	2690	10702
Switching of load to the more effective including the newly built boiler-houses	7		7
Replacement of pumps	0	12	12
MCE "Mariupolteplomerezh"			
Boilers replacement			
PTVM-30	2		2
PTVM-50	3		3
TVG-8M	9	1	10
E-1-09	1		1
KVG-6,5	4		4
VPR-500	1		1
NIISTU-5M	2	1	3
KVGM -50	1		1
NR-18	0	4	4
APK-2102	0	1	1
Total	23	7	30
Replacement of boiler burners			
SNG-33	81		81
MDGG 150	2		2
Total	83		83
Rehabilitation of network, m	123868	25930	149798
Replacement of pumps	6		6
Switching of load to the more effective boiler-houses	3	1	4
Replacement of heat exchangers	14		14
Reconstruction of boilers	6		6
Chemical flushing of boilers	9		9
Replacement of boiler convection part pipes	5		5
Frequency controllers installation	116	5	121
Implementation of heat utilizers	4		4
"Artemivsk-Energy", Ltd.			
Boilers replacement			
KVG-0,63	6		6
KV-GM-1,0	4		4
KV-GM-1,6	3		3
Viessmann	2		2
Riello	4		4



Loos		2	2
BERETTA		2	2
Total	19	4	23
Rehabilitation of network, m	6595	1142	7737
Frequency controllers installation	5		5
Replacement of pumps	22	31	53
Replacement of heat exchangers	0	2	2
Setting up of boilers	18	38	56
Switching of boiler-houses' load to the more effective ones	1	1	2

According to PDD version 04, emission reductions during 2011 monitoring period were expected 148426 tonnes of CO₂ equivalent. According Monitoring Report version 02 emission reductions achieved are 140753 tonnes of CO₂ equivalent.

The main reasons of the difference between the prognostic estimation of emission reductions in the PDD and the actual emission reductions in the Monitoring Report are:

- 1) Impossibility of taking into account in the PDD of the actual conditions in reported period.
- 2) Application in course of calculations in the Monitoring Report of the values of the carbon emission factors for fuels according to the valid "National inventory report of Ukraine for 1990 – 2009", which for the used fuels (natural gas and coal) are somewhat less than values used in the PDD according to the IPCC 1996 Guidelines for National Greenhouse Gas Inventories.

The identified areas of concern as to Project implementation, project participants response and BV Certification's conclusion are described in Appendix A Table 2 (refer to CL 01).

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

For calculating the emission reductions, key factors, such as natural gas consumption at boiler houses, coal consumption at boiler houses, average calorific value of natural gas, average calorific value of coal, average outside temperature during the heating period, average inside temperature during the heating period, number of customers of the hot water supply service, heated area (total), heat transfer factor of buildings, heated area of buildings (previously existed in the base year) with the



renewed (improved) thermal insulation in the reported year, heated area of newly connected buildings (assumed with the new (improved) thermal insulation) in the reported year, heat transfer factor of new buildings and buildings with new thermal insulation, heating period duration, duration of the hot water supply period, maximum connected load to a boiler-house, that is required for heating, connected load to a boiler-house, that is required for hot water supply service, standard specific discharge of hot water per personal account, natural gas carbon emission factor, coal carbon emission factor, reducing electricity consumption carbon emission factor, electricity consumption, fuel consumption by the cogeneration units, influencing the baseline emissions and the activity level of the project and the emissions as well as risks associated with the project were taken into account, as appropriate.

Data sources used for calculating emission reductions, such as Boilerhouse records, Statistics of ME "Makiivteplomerezha", MCE "Mariupolteplomerezha", "Artemivsk-Energy", Ltd., IPCC Guidelines for National Greenhouse Inventories, SNiP 2-3-79 (1998), State Buildings Norms B.2.6-31:2006, KTM 204 Ukraine 244-94, "National inventory report of Ukraine for 1990 – 2009", Order of the National Environmental Investment Agency of Ukraine #75 dated 12/05/2011 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.

The identified areas of concern as to Compliance of the monitoring plan with the monitoring methodology, project participants response and BV Certification's conclusion are described in Appendix A Table 2 (refer to CAR 01, CAR 02, CAR 03).

3.5 Revision of monitoring plan (99-100)

On 5th periodic verification of the project "Rehabilitation of the District Heating Systems in Makiivka, Mariupol, Artemivsk Cities of Donetsk Region" monitoring plan was revised. Verification Team reviewed the evidence justifying the necessity for revision of monitoring plan.

The project participants provided an appropriate justification for the proposed revision.



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According to the conditions described in the monitoring plan, section D.1.1 of the PDD, because of lack of veracious data in the base year, the calculations for the 5 boiler-houses of MCE “Mariupolteplomerezha” were not made, emission reductions for them are assumed equal to 0.

The boiler-house Bahmutska str., 20a (# 82 in the Project) of MCE “Mariupolteplomerezha” is excluded from monitoring process because of implementation of measures that are not foreseen by project activity (heat pump is installed at the boiler-house).

In the reported period for several boiler-houses electricity meters have not been calibrated on time. Data on electricity consumption for the 20 boiler-houses of ME “Makiivteplomerezha” and 3 boiler-houses of MCE “Mariupolteplomerezha” is excluded from calculations in the current reported period.

Heated area, connected to the boiler-houses, usually varies insignificantly and mainly disconnection of consumers is observed caused by switching to individual heating. The changes (disconnections) of the heated area take place as a rule in summer, between the heating seasons. To simplify the monitoring of parameter “heated area”, data for monitoring report are taken for January, 01 of the next to reported year. This corresponds to the conservative approach, because in fact in the first half of a year fuel and electricity is consumed also for heating areas that are not taken into account for January, 01 of the next to reported year.

However, in 2011 in Artemivsk City the significant disconnection of heated areas from the district heating system took place (in particular, the microdistrict Zahidniy was completely disconnected from the district heating system as a result of implementation of the pilot project “Warm House” supported by Artemivsk City Council). Using in this case of the approach described above would lead to an artificial excessive lowering of fuel and electricity consumption efficiency. Therefore, for the boiler-houses of “Artemivsk-Energy”, Ltd. it is considered to take into account not the heated area as of January 1, 2012, but the averaged for the entire period of monitoring heated area, which also included consumers who have received heating services from 01 January to 15 April of 2011 reported year.

The verification team carried out a determination of these changes.

The proposed revision improves the applicability of information collected compared to the original monitoring plan without changing conformity with the relevant rules and regulations for the establishment of monitoring plans.



3.6 Data management (101)

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

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

Registration of Natural gas consumption at boiler houses of district heating enterprises that implement the project is carried out by the following scheme:

1. Natural gas consumption is measured by gas flow meter, installed at a boiler-house. All boiler-houses are equipped with gas flow meters.
2. The majority of boiler-houses are equipped with automatic correctors for temperature and pressure. Gas consumption is registered automatically. Every day operator of a boiler house makes registration of daily gas consumption in the special paper journal "Journal of registration of boiler-house's operation parameters".
3. At the boiler-houses that are not equipped with gas volume correctors, 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". These parameters are used to bring gas consumption to standard conditions.
4. Every day operators report values of gas consumption by phone to Production-Technical Department (PTD) of ME "Makiivteplomerezha", MCE "Mariupolteplomerezha" and "Artemivsk-Energy", Ltd., correspondingly, where they are storing and used for payments to gas suppliers.
5. Every month the account centers transfer data to gas suppliers.

Data monitored and required for emission reductions calculation and verification, according to paragraph 37 of the JI guidelines, are to be kept for two years after the last transfer of ERUs for the project. In accordance with this, the General director of RME "Donetskteplocomunenergo" has issued the Order dated 04/07/2011 "On creation of the operation team and period of storage of documents II project", in which the personnel of the created operation team is established, and keeping of the primary documentation for two years after the last transfer of ERUs for the project is appointed.

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



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Measurement equipment calibration was carried out by SE "Donetskstandartmetrology", SE "Kharkivkstandartmetrology", «Apator Metrix», Poland, PKF "KURS" Ltd., Artemivsk GPU, PJSC "Donetskoblenergo", PE Umantsev A.P.

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

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

Manager of the JI project, Deputy General Director on investments and strategic development Ms. Victoriya Kucherenko controls and checks up the adequacy of the data collection mechanism and the reliability of parameters of the Monitoring plan and other information on project implementation.

Any problem occurring that concerns this project is to be reported immediately to the project manager, who takes the appropriate measures.

The identified areas of concern as to Data management, project participants response and BV Certification's conclusion are described in Appendix A Table 2 (refer to CL 02, CL 03, CL 04, FAR 01).

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 project "Rehabilitation of the District Heating Systems in Makiivka, Mariupol, Artemivsk Cities of Donetsk Region" project of RME "Donetskteplocomunenergo" located in the Makiivka, Mariupol, Artemivsk Cities of Donetsk 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 monitoring report against the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification report and opinion.



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The management of Institute of Engineering Ecology 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 as per determined changes. 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.

According to the results of the Monitoring Report for the project “Rehabilitation of the District Heating Systems in Makiivka, Mariupol, Artemivsk Cities of Donetsk Region” for 2011, the actual achieved GHG emission reductions are lower than it was indicated as prognostic estimation in the PDD. According to PDD version 04, emission reductions during 2011 monitoring period were expected 148426 tonnes of CO₂ equivalent. According Monitoring Report version 02 emission reductions achieved are 140753 tonnes of CO₂ equivalent. The reasons of the difference between the prognostic estimation of emission reductions in the PDD and the actual emission reductions are explained in section D.3 of Monitoring Report.

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 per determined changes. 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 calculated without material 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 the following statement:

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

Baseline emissions	:	748907	tonnes of CO ₂ equivalent
Project emissions	:	608154	tonnes of CO ₂ equivalent
Emission Reductions	:	140753	tonnes of CO ₂ equivalent



5 REFERENCES

Category 1 Documents:

Documents provided by RME "Donetskteplocomunenergo" that relate directly to the GHG components of the project.

- /1/ Monitoring Report, version 01, dated 30 March 2012.
- /2/ Monitoring Report, version 02, dated 26 April 2012.
- /3/ Project Design Document, version 4, dated 02 August 2011.
- /4/ Letter of Approval from State Environmental Investment Agency of Ukraine # 2811/23/7 dated 28/09/2011.
- /5/ Letter of Approval by Netherlands # 2011JI33 dated 14/09/2011.
- /6/ Excel spreadsheet of the emission reductions calculation version 02
- /7/ Determination and Verification Manual, version 01.

Category 2 Documents:

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

MCE "Mariupolteplomerezha"

1. License №347000. Heat production, its transportation by trunk and local (distributing) heating networks, heat supply (except certain kinds of business activities in the area of heat supply, in case if heat is produced by cogeneration plants and plants using alternative or renewable energy sources) (31.03.2008-31.03.2013). Municipal commercial enterprise "Mariupolteplomerezha"
2. Order of the Mayor №441 of 04.10.2010 "On the beginning of the heating period 2010-2011"
3. Order №489 of 04.10.2010 "On the beginning of the heating period 2010-2011"
4. Order №494 of 06.10.2010 " On the beginning of the heating period 2010-2011 supplement order №489"
5. Order of the Mayor №167 of 12.04.2011 "About the end of the heating period 2010-2011"
6. Order №226 of 14.04.2010 "About the end of the heating period 2010-2011"
7. Order of the Mayor №433 of 30.09.2011 "On the beginning of the heating period 2011-2012"
8. Order №557 of 30.09.2011 "On the beginning of the heating period 2011-2012"
9. A working project "Zhovtneviy heat district №3. Boiler house,

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- Kazantseva, 17. The project to install a boiler VPR-500". Impacts on the environment. LLC "NPP" Stalker". 2008
- The positive conclusion of the public examination №05-01573-10 of 15.11.2010 to estimate documents "Reconstruction of the boiler house on Kazantseva str., 17 with the installation of boilers, Mariupol". Branch SE "Ukrderdbudekspertyza" in Donetsk region
10. Permission №1412336600-24 on pollutants emissions into the atmosphere by stationary sources MCE "Mariupolteplomerezha" (30.01.2009-30.01.2014)
 11. Permission №1412336600-23 on pollutants emissions into the atmosphere by stationary sources MCE "Mariupolteplomerezha" (29.12.2008-29.12.2013)
 12. Permission №1412336900-17 on pollutants emissions into the atmosphere by stationary sources MCE "Mariupolteplomerezha" (10.11.2008-10.11.2013)
 13. Permission №1412337200-13 on pollutants emissions into the atmosphere by stationary sources MCE "Mariupolteplomerezha" (10.10.2008-10.10.2013)
 14. Permission №1412365300-3 on pollutants emissions into the atmosphere by stationary sources MCE "Mariupolteplomerezha" (12.02.2009-12.02.2014)
 15. Permission №1412365600-1 on pollutants emissions into the atmosphere by stationary sources MCE "Mariupolteplomerezha" (12.02.2009-12.02.2014)
 16. Report on air protection form 2-TP "air" in 2011 MCE "Mariupolteplomerezha"
 17. Register of stationary pollution sources and their characteristics. POD-1
 18. Register of measures to protect the air. POD-2
 19. Plan for environmental measurements in 2011
 20. Report on the inventory of emissions of pollutants at MCE "Mariupolteplomerezha" Primorskiy district. LLC "Ukrainian Centre of Ecology and heat" Mariupol. 2008
 21. Report on the inventory of emissions of pollutants at MCE "Mariupolteplomerezha" Illichivskiy district. LLC "Ukrainian Centre of Ecology and heat". Mariupol. 2008
 22. Report on the inventory of emissions of pollutants at MCE "Mariupolteplomerezha" Zhovtneviy district. LLC "Ukrainian Centre of Ecology and heat" Mariupol. 2008
 23. Report on the inventory of emissions of pollutants at MCE "Mariupolteplomerezha" Ordzhonikidze area. LLC "Ukrainian Centre of Ecology and heat" Mariupol. 2008
 24. Letter №18-80/16c of 02.02.2011. Average daily temperatures in Mariupol in January. Mariupol Hydrometeorological Observatory
 25. Letter №18-149/30c of 04.03.2011. Average daily temperatures in Mariupol in February. Mariupol Hydrometeorological Observatory
 26. Letter №18-206/43c of 01.04.2011. Average daily temperatures in
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- Mariupol in March. Mariupol Hydrometeorological Observatory
Letter №18-255/54c of 18.04.2011. Average daily temperatures in
28. Mariupol in April (01-15). Mariupol Hydrometeorological
Observatory
Letter №18-261/56c of 20.04.2011. Average daily temperatures in
29. Mariupol in April (16-18). Mariupol Hydrometeorological
Observatory
Letter №18-725/118c of 01.11.2011. Average daily temperatures in
30. Mariupol in October (15-31). Mariupol Hydrometeorological
Observatory
Letter №18-809/130c of 06.12.2011. Average daily temperatures in
31. Mariupol in November. Mariupol Hydrometeorological Observatory
Letter №18-9/3c of 04.01.2012. Average daily temperatures in
32. Mariupol in December. Mariupol Hydrometeorological Observatory
33. Contract №06/10-2467 TE-9 of 20.12.2010 for the purchase of
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34. Contract №06/10-2468 BO-9 of 20.12.2010 for the purchase of
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35. Contract №14/2532/11 of 30.09.2011 on the purchase and sale of
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36. Contract №14/2313/11 of 30.09.2011 on the purchase and sale of
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66. Act of 29.09.2011 of the working committee of reception to the operation of the heating boiler at OШ №8 - D/C 166 MCE "Mariupolteplomerezha"
67. Act of 24.11.2011 of the working committee of reception to the operation of heating main at Kazantseva str, 23 MCE "Mariupolteplomerezha"
68. Act of 23.11.2011 of the working committee of reception to the operation of heating main at Artema str, 90 MCE "Mariupolteplomerezha"
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87. Protocol № 65 of 13.07.2011 of commission meeting on testing of
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88. Protocol № 21 of 15.03.2011 of commission meeting on testing of
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89. Protocol № 22 of 17.03.2011 of commission meeting on testing of
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91. Protocol № 26 of 24.03.2011 of commission meeting on testing of knowledge on labour safety
 92. Protocol № 29 of 05.04.2011 of commission meeting on testing of knowledge on labour safety
 93. Protocol № 30 of 06.04.2011 of commission meeting on testing of knowledge on labour safety
 94. Resolution № 1052 of 13.08.1998 "On the procedure of determining the classes of consumers." National Electricity Regulatory Commission of Ukraine
 95. Passport. Gas meter LGK-200 №7110, Metalurgiv str, 53/55
 96. Passport. Gas meter LGK-80 №8691, Metalurgiv str, 53/55
 97. Passport. Gas meter RGK-250 №2587, Lenina str, 14
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 99. Passport. Gas meter RGK-100 №10155, Kamensk
 100. Passport. Gas meter RGK-100 №10114, Sartana
 101. Certificate of verification of the working measuring instrument №1596. Complex of commercial metering of natural gas "Potok-DH-03» №03/02, boiler Kazantseva str, 17
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 105. Passport. Electricity meter three-phase electronic Alpha A1140 №05014538, Sartana
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 110. Certificate №003787 Baturina V.I. - Operator of boiler house Metalurgiv str, 53/55
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117. Certificate №44/8 Avramenko T.P. - Operator of boiler house, Satrana
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119. Certificate №48/10 Frantsuzhan L.I. - Operator of boiler house, Lenina str, 14
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165. Order of Makeyevka City Council №1094 of 28.09.2011 "About the beginning of heating period 2011-2012"
166. Permission №1413537200-77 on pollutants emissions into the atmosphere by stationary sources ME "Makiivteplomerezha" (12.05.2008-12.05.2013)
167. Permission №1413536900-120 on pollutants emissions into the atmosphere by stationary sources ME "Makiivteplomerezha" (07.10.2008-07.10.2013)
168. Report on air protection form 2-TP "air" in 2011 ME "Makiivteplomerezha"
169. Register of stationary pollution sources and their characteristics. POD-1
170. Report on inventory of sources of pollutants in the atmosphere of ME "Makiivteplomerezha" Krasnogvardeisky area (3 thermal area). Results of measurements. 2007
171. Report on inventory of sources of pollutants in the atmosphere of ME "Makiivteplomerezha" Central Urban District (1 thermal area). Results of measurements. 2007
172. Information on the heating area of consumers in 2011 by ME "Makiivteplomerezha"
173. Reference with the actual outside air temperature in Makiivka in 2011
174. Letter of 03.02.2011 №11.24/49. Average daily temperatures in Makiivka in January. Donetsk Regional Centre of Hydrometeorology
175. Letter of 01.03.2011 №11.24/98. Average daily temperatures in Makiivka in February. Donetsk Regional Centre of



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176. Letter of 04.04.2011 №11.24/140. Average daily temperatures in Makiivka in March. Donetsk Regional Centre of Hydrometeorology
177. Letter of 05.05.2011 №11.24/195. Average daily temperatures in Makiivka in April. Donetsk Regional Centre of Hydrometeorology
178. Letter of 02.11.2011 №11.24/450. Average daily temperatures in Makiivka in October. Donetsk Regional Centre of Hydrometeorology
179. Letter of 01.12.2011 №11.24/480. Average daily temperatures in Makiivka in November. Donetsk Regional Centre of Hydrometeorology
180. Letter of 03.01.2012 №23/11.24/6. Average daily temperatures in Makiivka in December. Donetsk Regional Centre of Hydrometeorology
181. Reference of calorific capacity of fuel ME "Makiivteplomerezha" in 2011
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221. Contract №13 of 12/01/2008 for the supply of electricity JSC
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 License №345158. Heat production, its transportation by trunk and local (distributing) heating networks, heat supply (except certain kinds of business activities in the area of heat supply, in case if heat is produced by cogeneration plants and plants using alternative or renewable energy sources) (19.09.2007-19.09.2012).
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245. Permission №1410300000-25 on pollutants emissions into the atmosphere by stationary sources "Artemivsk-Energy", Ltd (13.08.2008-13.08.2013)
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251. Report of inventory adjustments of pollutants in "Artemivsk-Energy", Ltd. 2008
252. Order of Artemivsk City Council №130 of 13.04.2011 "On the end of heating season 2010-2011"
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254. Contract №06/10-2791 TE-6 of 20.12.2010 for the purchase of natural gas "Naftogaz of Ukraine"
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258. Reference of calorific value of gas in 2011 "Artemivsk-Energy", Ltd
259. Reference №19 of 02/03/2011 on the average air temperature in Artemivsk in January 2011. Meteorological station Artemivsk
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263. Reference №137 of 09.11.2011 on the average air temperature in Artemivsk in October 2011. Meteorological station Artemivsk
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297. Protocol №5 of 31.01.2011 on measuring the content of pollutants in organized emissions from stationary sources
298. Plan-schedule of planned repairs of gas equipment in 2010-2011
299. Plan-schedule of planned repairs of gas equipment in 2011-2012
300. Plan-schedule of planned repairs of boiler equipment in 2011-2012
301. Aggregate register, Zelena str, 41
302. Passport to gas industry, Zelena str, 41
303. Act of reception and transmission of equipment of 29.11.2011. Pump Volol LM-125-250. Boiler house №16, Artema str, 41
- Act of reception and transmission of fixed equipment of
304. 29.11.2011. Pump KVC 45-120 M. Boiler house №16, Artema str, 41
- Act of reception and transmission of fixed equipment of
305. 29.11.2011. Pump WILO IPL 100/165. Boiler house №16, Artema str, 41
- Act of reception and transmission of fixed equipment of
306. 29.11.2011. Pump WILO IPL 100/145. Boiler house №16, Artema str, 41
- Act of reception and transmission of fixed equipment of
307. 29.09.2011. Heating main from TK to TK-4-8. Boiler house №16, Artema str, 41

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308. Register of electricity consumption, Artema str, 41
309. Register of gas consumption, Artema str., 41
310. Protocol №34 of 23.09.2011 of commission meeting on testing of knowledge on labour safety
311. Plan of localization and liquidation of emergencies and accidents. Boiler house №16
312. Schedule of classes to eliminate accidents in 2011-2012
313. Register of training classes, Artema str, 41
314. Passport. Electricity meter Delta-8010 №13210, Artema str, 41
315. Passport. Gas meter LGK-150 №6323, Artema str, 41
316. Passport. Gas volume corrector B25 №2192, Artema str, 41
317. Register of stationary pollution sources and their characteristics. POD-1
318. Protocol №23 of measuring the content of pollutants in organized emissions from stationary sources
319. Plan-schedule of planned repair of gas equipment in 2011
320. Plan-schedule of planned repair of boiler equipment in 2011-2012
321. Aggregate register, Artema str, 41
322. Passport to gas mining, Artema str, 41
Act of reception and transmission of fixed equipment of
323. 28.03.2011. Boiler-water LOOS №1. Boiler house №33 Yuvileyna str, 117
Act of reception and transmission of fixed equipment of
324. 28.03.2011. Boiler-water LOOS № 2. Boiler house №33 Uvileyna str, 117
Act of reception and transmission of fixed equipment of
325. 28.03.2011. Pumping station of recirculated line №1. Boiler house №33, Uvileyna str, 117
Act of reception and transmission of fixed equipment of
326. 28.03.2011. Pumping station of recirculated line №2. Boiler house №33, Yuvileyna str, 117
Act of reception and transmission of fixed equipment of
327. 28.03.2011. Pumping station of recirculated line №3. Boiler house №33, Yuvileyna str, 117
Act of reception and transmission of fixed equipment of
328. 28.03.2011. Pumping station of water supply. Boiler house №33, Yuvileyna str, 117
Act of reception and transmission of fixed equipment of
329. 28.03.2011. Pumping station of thermal networks. Boiler house №33, Yuvileyna str, 117
Act of reception and transmission of fixed equipment of
330. 28.03.2011. Dosing pump with motor №1. Boiler house №33, Yuvileyna str, 117
Act of reception and transmission of fixed equipment of
331. 28.03.2011. Dosing pump with motor №2. Boiler house №33, Yuvileyna str, 117
332. Act of reception and transmission of fixed equipment of



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- 30.06.2011. Heating main from Yuvileyna str, 2 to Tchaikovsky str., 34. Boiler house №33, Yuvileyna str, 117
Act of reception and transmission of fixed equipment of
333. 29.07.2011. Heating main from TK-28 to TK-29. Boiler house №33, Yuvileyna str, 117
334. Register of electricity consumption, Yuvileyna str, 117
335. Register of gas consumption, Yuvileyna str, 117
336. The act of acceptance-transmission of commercial products of "Artemivsk-Energy", Ltd 23.10.2011-24.10.2011
337. The act of acceptance-transmission of commercial products of "Artemivsk-Energy", Ltd 13.11.2011-14.11.2011
338. The act of acceptance-transmission of commercial products of "Artemivsk-Energy", Ltd 16.12.2011-17.12.2011
339. Expert report of 25.05.2010 №14-02-11-1709.10 conformity of project documentation to legal acts on labour safety and fire security. Working project "Reconstruction of boiler house №33, Yuvileyna str, 117"
340. Expert opinion №10 07 0025 0191 40.21 P of 4/19/2010 Working project "Reconstruction of boiler house №33, Yuvileyna str, 117", State Inspection on Energy
341. Letter № 15-6/06-107-1142 of 15.06.2010 of project examination "Reconstruction of boiler house №33, Yuvileyna str, 117", State Inspection on Energy
342. Working project "Reconstruction of boiler №33 on Uvileyna str, 117" Volume 3. Impacts on the environment. JSC "Institute Ukrsvetmetobrobka." 2010
343. Protocol №27 dated 20.09.2011 of commission meeting on testing of knowledge on labour safety
344. Certificate №49/8 Boyko N.M. - Operator of boiler house №33
345. Certificate №16/16 Molodorya V. - Operator of boiler house №33
346. Certificate №49/1 Kolesnikova O.E. - Operator of boiler house №33
347. Plan of localization and liquidation of emergencies and accidents. Boiler house №33
348. Register of training classes, Yuvileyna str.
349. Register of stationary pollution sources and their characteristics. POD-1
350. Protocol №1 of 31.01.2011 of measuring content of pollutants in organized emissions from stationary sources
351. Plan-schedule of planned repair of gas equipment in 2011
352. Plan-schedule of planned repair of boiler equipment in 2011
353. Aggregate register, Yuvileyna str., 117
354. Passport to gas mining, Yuvileyna str, 117
355. Passport. Electricity meter multi SL 7000 Smart № 53095273, Yuvileyna str, 117
356. Passport. Electricity meter multi SL 7000 Smart № 53095274 Yuvileyna str, 117

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- 357. Passport. Gas meter AHC-200 №5982, Yuvileyna str, 117
- 358. Passport. Gas volume corrector B25 № 08801, Yuvileyna str, 117
- 359. Passport. -Water -boiler LOOS №105706, Yuvileyna str, 117
- 360. Passport. -Water -boiler LOOS №106512, Yuvileyna str, 117
- 361. Photo. Water -boiler LOOS №105706, Yuvileyna str, 117
- 362. Photo. Water -boiler LOOS №106512, Yuvileyna str, 117

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/ Kucherenko V.M. – deputy director on investments and strategic development of RME "Donetskteplokomunenergo"
- /2/ Pahomova K.I. - engineer of generation department of RME "Donetskteplokomunenergo"
- /3/ Shamsheiev I.A. - Chief Engineer, MCE "Mariupolteplomerezha"
- /4/ Klochko O.O. - Head of the Production-Technical Department, MCE "Mariupolteplomerezha"
- /5/ Dohaev V.M. - Head Illichivskogo thermal area №2, MCE "Mariupolteplomerezha"
- /6/ Yermishyn V.B. - Head of the Zhovtneвого heat area №1, MCE "Mariupolteplomerezha"
- /7/ Avramenko T.P. - operator of boiler room, Sartana, OШ №8, MCE "Mariupolteplomerezha"
- /8/ Ponkrashkina N.V. – operator of chemical water treatment, Sartana, OШ №8, MCE "Mariupolteplomerezha"
- /9/ Horonzhaia A.M. - operator of boiler room, Kamensky, Park lane, 1a, MCE "Mariupolteplomerezha"
- /10/ Dolhova O.I. - operator of boiler room, Lenina st., 42, MCE "Mariupolteplomerezha"
- /11/ Sushko T.O. - operator of boiler room, Lenina st. , 42, MCE "Mariupolteplomerezha"
- /12/ Kravtsova L.M. - head of the Production-Technical Department, "Artemivsk-Energy", Ltd.
- /13/ Popova M.A. - Senior Engineer of labor protection department
- /14/ Riazantseva N. - senior engineer of exploitation service, ME "Makiivteplomerezha"
- /15/ Kateryna Korinchuk – Scientific researcher of Institute of Engineering Ecology



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APPENDIX A: VERIFICATION PROTOCOL

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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?	DFP of Netherlands have issued written project approval (LoA) when submitting the first verification report to the secretariat for publication in accordance with paragraph 38 of the JI guidelines.	OK	OK
91	Are all the written project approvals by Parties involved unconditional?	Yes, all the written project approvals by Parties involved are unconditional.	OK	OK
Project implementation				
92	Has the project been implemented in accordance with the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website?	<p>Implementation of boiler houses equipment rehabilitation and network rehabilitation was realized mainly according to the project plan with some deviations from time-table.</p> <p>Reconstruction of boiler-houses sometimes has insignificant deviations from the project particularly in changes of installed boilers capacity. It was dictated by changes in heat energy demand. In several cases replacement of different (from planned before) diameters of network pipes took place.</p> <p>Rehabilitation of boilers with using various technologies included, fully or separately, rehabilitation of screen (furnace and convective) tubes, including their replacement and cleaning (mechanical and chemical), burners and control automatic equipment replacement, extraplanned checking</p>	OK	OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		and adjusting of boilers' operation conditions. In 2010 implementation of CHP units has been started. But no CHP unit has been putted into operation yet. Installation of IHSS is delayed.		
93	What is the status of operation of the project during the monitoring period?	Monitoring report indicated the current status of the project activity implementation. Based on provided materials, there is known that all project equipment were operational in the reporting period. CL 01. Please explain at what stage is the implementation of measures to insallation of IHSS.	CL 01	OK
Compliance with monitoring plan				
94	Did the monitoring occur in accordance with the monitoring plan included in the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website?	In order to improve the accuracy and applicability of data and calculations the revisions were made to the registered monitoring plan.	OK	OK
95 (a)	For calculating the emission reductions or enhancements of net removals, were key factors, e.g. those listed in 23 (b) (i)-(vii) above, influencing the baseline emissions or net removals and the activity level of the project and the emissions or removals as well as risks associated with the project taken into account, as appropriate?	All key factors influencing the baseline emissions or net removals and the activity level of the project and the emissions as well as risks associated with the project were taken into account, as appropriate for calculating the emission reductions or enhancements of net removals.	OK	OK
95 (b)	Are data sources used for calculating emission reductions or enhancements of net removals clearly identified, reliable and transparent?	The data sources used for calculating emission reductions are clearly identified, reliable and transparent. Data sources include calibrated measuring equipment, Boilerhouse records, Statistics of ME "Makiivteplomerezha", MCE	OK	OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		"Mariupolteplomerezha", "Artemivsk-Energy", Ltd., IPCC Guidelines for National Greenhouse Inventories, SNiP 2-3-79 (1998), State Buildings Norms B.2.6-31:2006, KTM 204 Ukraine 244-94, "National inventory report of Ukraine for 1990 – 2009", Order of the National Environmental Investment Agency of Ukraine # 75 dated 12/05/2011.		
95 (c)	Are emission factors, including default emission factors, if used for calculating the emission reductions or enhancements of net removals, selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice?	<p>Emission factors, including default emission factors are presented in Section B.2.1 and Annex 1 of the MR. Values of the carbon emission factors for natural gas and coal are set according to the valid "National inventory report of Ukraine for 1990 – 2009".</p> <p>CAR 01. Please provide information confirms that all boiler-houses are referred to the second class of electricity consumers.</p> <p>CAR 02. Carbon emission factors for different fuels used in the PDD and MR do not match.</p>	CAR 01 CAR 02	OK OK
95 (d)	Is the calculation of emission reductions or enhancements of net removals based on conservative assumptions and the most plausible scenarios in a transparent manner?	<p>The calculation of emission reductions is based on conservative assumptions and the most plausible scenarios in a transparent manner. As a result of documents revision, all data connected with estimation of emission reduction are consistent through the Monitoring report and excel spreadsheets with calculation.</p> <p>CAR 03. The numbering of tables is not correct. Please make appropriate correction.</p>	CAR 03	OK
Applicable to JI SSC projects only				
96	Is the relevant threshold to be classified as JI	N/a	N/a	N/a



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	SSC project not exceeded during the monitoring period on an annual average basis? If the threshold is exceeded, is the maximum emission reduction level estimated in the PDD for the JI SSC project or the bundle for the monitoring period determined?			
Applicable to bundled JI SSC projects only				
97 (a)	Has the composition of the bundle not changed from that is stated in F-JI-SSCBUNDLE?	N/a	N/a	N/a
97 (b)	If the determination was conducted on the basis of an overall monitoring plan, have the project participants submitted a common monitoring report?	N/a	N/a	N/a
98	If the monitoring is based on a monitoring plan that provides for overlapping monitoring periods, are the monitoring periods per component of the project clearly specified in the monitoring report? Do the monitoring periods not overlap with those for which verifications were already deemed final in the past?	N/a	N/a	N/a
Revision of monitoring plan				
Applicable only if monitoring plan is revised by project participant				
99 (a)	Did the project participants provide an appropriate justification for the proposed revision?	On 5th periodic verification monitoring plan was revised. Some boiler-houses is excluded from calculations in the current reported period and also the amendments made as a result of changes in the heated area were taken into account. The project participants provided an appropriate justification for the proposed revision.	OK	OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
99 (b)	Does the proposed revision improve the accuracy and/or applicability of information collected compared to the original monitoring plan without changing conformity with the relevant rules and regulations for the establishment of monitoring plans?	The proposed revision improves the applicability of information collected compared to the original monitoring plan without changing conformity with the relevant rules and regulations for the establishment of monitoring plans.	OK	OK
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?	<p>All data necessary for the CO₂ emission reductions calculation is collected. The scheme of data flow and a description of reporting procedures is provided in Monitoring report.</p> <p>The implementation of data collection procedures are in accordance with the monitoring plan included in the determined PDD.</p> <p>Position and roles of person in the GHG data management process are defined in the monitoring report and are implemented on-site.</p>	OK	OK
101 (b)	Is the function of the monitoring equipment, including its calibration status, is in order?	<p>All monitoring equipments have calibration. It is calibrated with periodic frequency (passport states the calibration frequency for every device) according to the national regulations.</p> <p>During site visit verifiers received and reviewed passports and/or certificates on calibration of all measurement equipments.</p> <p>CL 02. According to the information in Annex 5 of MR electricity meters was not calibrated on time. Please explain this.</p> <p>CL 03. Please provide explanations why electricity meter NIK 2303 # 0071696 (Soniachniy -1) is absent in Annex 5.</p>	CL 02 CL 03 CL 04	OK OK OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		CL 04. Please provide explanations why electricity meter NIK 2303 # 0074576 (Soniachniy -1) is absent in Annex 5.		
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 on site of some devices and in responsible departments in a traceable manner.	OK	OK
101 (d)	Is the data collection and management system for the project in accordance with the monitoring plan?	<p>The data collection and management system for the project is in accordance with the approved monitoring plan. Implementation of monitoring system was checked through site visit, and concluded that monitoring system is completely in accordance with the monitoring plan. This fact is also confirmed by the documents.</p> <p>FAR 01. In the report 2-TP "Air" for 2011 there is no information about the measures to reduce emissions of pollutants and greenhouse gases (ME "Makiivteplomerezha", MCE "Mariupolteplomerezha", "Artemivsk-Energy", Ltd.)</p>	FAR 01	Issues to be checked during the next verification
Verification regarding programs of activities (additional elements for assessment)				
102	Is any JPA that has not been added to the JI PoA not verified?	N/A	N/A	N/A
103	Is the verification based on the monitoring reports of all JPAs to be verified?	N/A	N/A	N/A
103	Does the verification ensure the accuracy and conservativeness of the emission reductions or enhancements of removals generated by each JPA?	N/A	N/A	N/A
104	Does the monitoring period not overlap with	N/A	N/A	N/A



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	previous monitoring periods?			
105	If the AIE learns of an erroneously included JPA, has the AIE informed the JISC of its findings in writing?	N/A	N/A	N/A
Applicable to sample-based approach only				
106	Does the sampling plan prepared by the AIE: (a) Describe its sample selection, taking into account that: (i) For each verification that uses a sample-based approach, the sample selection shall be sufficiently representative of the JPAs in the JI PoA such extrapolation to all JPAs identified for that verification is reasonable, taking into account differences among the characteristics of JPAs, such as: – The types of JPAs; – The complexity of the applicable technologies and/or measures used; – The geographical location of each JPA; – The amounts of expected emission reductions of the JPAs being verified; – The number of JPAs for which emission reductions are being verified; – The length of monitoring periods of the JPAs being verified; and – The samples selected for prior verifications, if any?	N/A	N/A	N/A
107	Is the sampling plan ready for publication through the secretariat along with the verification report and supporting documentation?	N/A	N/A	N/A
108	Has the AIE made site inspections of at least	N/A	N/A	N/A



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	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?			
109	Is the sampling plan available for submission to the secretariat for the JISC.s ex ante assessment? (Optional)	N/A	N/A	N/A
110	If the AIE learns of a fraudulently included JPA, a fraudulently monitored JPA or an inflated number of emission reductions claimed in a JI PoA, has the AIE informed the JISC of the fraud in writing?	N/A	N/A	N/A



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Table 2 Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests by verification team	Ref. to checklist question in table 1	Summary of project participant response	Verification team conclusion
CL 01. Please explain at what stage is the implementation of measures to insallation of IHSS.	93	According to the PDD installation of IHSSs at boiler-houses Karpinskogo str.,1-10a and Uvileyna str.,117 of "Artemivsk-Energy", Ltd. In 2011 was planed. At present for implementation of this measure "Artemivsk-Energy", Ltd. has documentation for 6 IHSSs at boiler-house Uvileyna str.,117 (see letter #04/934 dated 20.04.2012).	Based on the information received, CL 01 is closed.
CAR 01. Please provide information confirms that all boiler-houses are referred to the second class of electricity consumers.	95 (c)	References #14-3092 submitted by ME "Makiivteplomerezha", #1945/05 submitted by MCE "Mariupolteplomerezha" and #04/947 submitted by "Artemivsk-Energy", Ltd are provided.	CAR 01 is closed.
CAR 02. Carbon emission factors for different fuels used in the PDD and MR do not match.	95 (c)	According to the registered monitoring plan Carbon emission factors for different fuels are taken from normative documents (see sections D.1.1.1. and D.1.1.3. of PDD), valid for reported period. In the current reported period the newly developed officially approved valid country-specific values of Carbon emission factors for natural gas and coal were used for calculations – according to the "National inventory report of Ukraine for 1990 – 2009".	CAR 02 is closed.
CAR 03. The numbering of tables is not correct. Please make appropriate correction.	95 (d)	This is corrected in MR version 02.	Issue is closed due to the amendments made in the MR.



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<p>CL 02. According to the information in Annex 5 of MR electricity meters was not calibrated on time. Please explain this.</p>	101 (b)	<p>Data on electricity consumption by objects, electricity meters of which have not been calibrated on time, is excluded from calculations in MR. Situation is reflected in section A.8 in MR version 02.</p>	<p>Based on the information received, CL 02 is closed.</p>
<p>CL 03. Please provide explanations why electricity meter NIK 2303 # 0071696 (Soniachniy -1) is absent in Annex 5.</p>	101 (b)	<p>The serial number of electricity meter NIK 2303 (boiler-house Soniachniy-1) was mistakenly provided in Annex 5. The serial number is corrected in MR version 02.</p>	<p>CL 03 is closed due to the amendments made in the MR.</p>
<p>CL 04. Please provide explanations why electricity meter NIK 2303 # 0074576 (Soniachniy -1)) is absent in Annex 5.</p>	101 (b)	<p>Information for electricity meter NIK 2303 #0074576 is added to Annex 5 in MR version 02.</p>	<p>CL 04 is closed due to the amendments made in the MR.</p>
<p>FAR 01. In the report 2-TP "Air" for 2011 there is no information about the measures to reduce emissions of pollutants and greenhouse gases (ME "Makiivteplomerezha", MCE "Mariupolteplomerezha", "Artemivsk-Energy", Ltd.)</p>	101 (d)	<p>The measures for ensuring proper reporting documentation management have been provided at ME "Makiivteplomerezha", MCE "Mariupolteplomerezha" and "Artemivsk-Energy", Ltd. Respectively, orders #№48-од, #40 and #14 are provided.</p>	<p>FAR 01 remains open till the next periodic verification. On the 6th of verification period is necessary to check the registration of measures to reduce greenhouse gas emissions in the form 2-TP.</p>