VERIFICATION REPORT

MUNICIPAL COMMERCIAL ENTERPRISE "DONETSKMISKTEPLOMEREZHA"

VERIFICATION OF THE "REHABILITATION OF THE DISTRICT HEATING SYSTEM IN DONETSK CITY"

REPORT NO. UKRAINE/0173/2010/1

REVISION NO. 01

BUREAU VERITAS CERTIFICATION

Report No: UKRAINE/0173/2010/1

VERIFICATION REPORT

OF THE JI PROJECT " REHABILITATION OF THE DISTRICT HEATING SYSTEM IN DONETSK CITY"

Date of first issue: 17/11/2010	Organizational unit: Bureau Veritas Certification Holding SAS
Client: Municipal commercial enterprise "Donetskmiskteplomerezha"	Client ref.: Viktor Rogachov

Summary:

Bureau Veritas Certification has made the initial and 1st periodic verification of the "Rehabilitation of the District Heating System in Donetsk City" project of Municipal commercial enterprise (Commercial Utility Enterprise) "Donetskmiskteplomerezha" located in the city of Donetsk, 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 ready to generate GHG emission reductions. The GHG emission reduction is calculated without material misstatements, and the ERUs issued totalize 92863 tons of CO2eq for the monitoring period from 01/01/2008 till 30/09/2010.

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

Report No.: UKRAINE/0173/2010/1	Subject Group: JI	
Project title: "Rehabilitation of the District Heating System in Donetsk City "		
Work carried out by: Oleg Skoblyk – Team Leader, Verifier, Technical Specialist Svitlana Gariyenchyk – Team Member, Verifier Denis Pishchalov - Team Member, Financial Specialist		
Work reviewed by: Ivan Sokolov - Internal Technical Reviewer		☒ No distribution without permission from the Client or responsible organizational unit
Work approved by: Flavio Gomes - Operational Manager		☐ Limited distribution
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1 INTRODUCTION

Municipal commercial enterprise "Donetskmiskteplomerezha" has commissioned Bureau Veritas Certification to verify the emissions reductions of its JI project the "Rehabilitation of the District Heating System in Donetsk City" (hereafter called "the project") in the city of Donetsk.

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

1.1 Objective

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

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

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

1.2 Scope

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

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

1.3 Verification Team

The verification team consists of the following personnel:

Oleg Skoblyk
Bureau Veritas Certification Team Leader, Climate Change Verifier Technical Specialist

Svitlana Gariyenchyk
Bureau Veritas Certification Team Member, Climate Change Verifier

Denis Pishchalov

Bureau Veritas Certification, Financial Specialist

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 01.1 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 determination protocol is enclosed in Appendix A to this report.

2.1 Review of Documents

The Monitoring Report (MR) Monitoring report "Rehabilitation of the District Heating System in Donetsk City" version 01 dated 25/10/2010 submitted by Municipal commercial enterprise "Donetskmiskteplomerezha" and additional background documents related to the project design and baseline, i.e. country Law,) and/or Guidance on criteria for baseline setting and monitoring, Host party criteria, Kyoto Protocol, Clarifications on Verification Requirements to be Checked by an Accredited Independent Entity were reviewed.
To address Bureau Veritas Certification corrective action and clarification requests, prior to and following the site-visit PPs revised the MR and resubmitted them as version 02 dated 29/09/2010.

To address Bureau Veritas Certification further corrective action and clarification requests, Commercial Utility Enterprise "Donetskmiskteplomerezha" revised the MR and resubmitted it on15/11/2010, the latter MR version 03 is considered final.

The verification findings presented in this report relate to the Monitoring Reports versions 01, 02 and 03 and project as described in the determined PDD.

2.2 Follow-up Interviews

On 4-5 November 2010 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 Municipal commercial enterprise "Donetskmiskteplomerezha" and "VEMA S.A" were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
Municipal commercial enterprise "Donetskmiskteplomerezha"	• Project implementation status • Organizational structure • Responsibilities and authorities • Personnel training • Quality management procedures and technology • Records of equipment installation • Control of metering equipment • Metering record keeping system, database • Cross-check of the information provided in the MR with other sources
"VEMA S.A"	• Baseline methodology • Monitoring plan • Monitoring report • Deviations from PDD

2.3 Resolution of Clarification, Corrective and Forward Action Requests

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

If the Verification Team, in assessing the monitoring reports and supporting documents, identifies issues that need to be corrected,

clarified or improved with regard to the monitoring requirements, it should raise these issues and inform the project participants of these issues in the form of:

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

(b) Clarification request (CL), requesting the project participants to provide additional information for the AIE to assess compliance with the monitoring plan;

(c) Forward action request (FAR), informing the project participants of an issue, relating to the monitoring that needs to be reviewed during the next verification period.

To guarantee the transparency of the verification process, the concerns raised are documented in more detail in the verification protocol in Appendix A.

3 VERIFICATION CONCLUSIONS

In the following sections, the conclusions of the verification are stated.

The findings from the desk review of the original monitoring documents and the findings from interviews during the follow up visit are described in the Verification Protocol in Appendix A.

The Clarification, Corrective and Forward Action Requests are stated, where applicable, in the following sections and are further documented in the Verification Protocol in Appendix A. The verification of the Project resulted in 9 Corrective Action Requests, 12 Clarification Requests, and 1 Forward Action Requests.

3.1 Project approval by Parties involved (90-91)

Written project approvals by Switzerland and Ukraine have been issued by the DFPs of those Parties when submitting the first verification report for publication in accordance with paragraph 38 of the JI guidelines. (They are listed among Category 1 Documents in the Reference section of this report)

The abovementioned written approvals are unconditional.

3.2 Project implementation (92-93)

It was assessed by Bureau Veritas verification team during the site visit that the project has been implemented in accordance with the PDD regarding which the determination has been deemed final.
Implementation of the rehabilitation of boiler-houses and heating systems has been realized according to the project plan.
Project equipment has been installed with minor deviations from the schedule and is fully operational.
Sometimes rehabilitation of boiler-houses has some deviations from the project, namely in change of installed boilers' power. This was induced by change of needs in heat energy. In some cases there is replacement of other (in relation to planned) diameters of heating systems due to production necessity.

Outstanding issues related to the Project implementation, PP's response and BV Certification's conclusion is described in Appendix A (refer to CL 01-03).

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

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

For calculating the emission reductions key factors, such as:

- high priority of heat supply sector for the national energy saving policy declared by the Ukrainian Government of Ukraine and stated in the State Program of Communal Economics Restructuring and Development for 2004-2010 (Ukrainian Law "On heat supply" No. 2479-VI from 09.07.2010), Ukrainian Law "On energy saving" No. 74/94-VR from 01.07.1994 and Ukrainian Law "About amendments to the Ukrainian Law "On energy saving" No. 1026-V from 16.05.2007. New Law of Ukraine "On heat supply" No. 2633-IV from 02.06.2005 which regulate relations on the heat supply market and stipulates for the implementation of energy saving measures and more efficient technologies.
- high price of the fuel, in particular natural gas which is nearly 95 % of fuel type used in Ukraine for the needs of the municipal heat supply;
- the amount of fuel consumption is calculated for the conditions in which normative parameters of heat and hot water supply are provided. Implementation of continuous monitoring of its quality (measurement of internal temperature in the specific buildings as well as registration of residents' complaints for the poor-quality heat

supply) is foreseen. This increases the control for the qualitative heat supply for the consumers and excludes deliberate reduction of heat consumption, and, in such a way, of fuel consumption with the purpose of increasing generation of GHG emissions reduction units;

- lack of monitoring devices for heat and heat-carrier consumption in the municipal boiler-houses presents the main complication for implementation of the JI projects on district heating in Ukraine. In this context, and taking into consideration essential load changes in the boilers, constant fuel consumption measurement taken by the highly accurate measurement equipment, provides for more its more exact measurement

influencing the baseline emissions and the activity level of the project and the emissions or removals as well as risks associated with the project were taken into account, as appropriate.

Data sources used for calculating emission reductions such as:

- Fuel consumption by boiler-houses (Natural gas)
- Heat value of natural gas
- Average external temperature during heating season
- Average internal temperature during heating season
- Quantity of hot water supply consumers
- Total heating area
- Average heat-transfer factor of the buildings in base year
- Heating area of buildings (existed in base year) with improved heat insulation in reporting year
- Heating area of new buildings connected to the heat supply system Heat-transfer factor of the buildings with new thermal insulation
- Duration of heating period
- Duration of hot water supply period
- Maximal connected load for heating services
- Connected load for hot water supply
- Standard specific discharge of hot water at personal account
- Conversion factor for average load within heating period
- Electric energy consumption by the boiler-houses, wherein frequency regulation are planned
- CO2 emission factor for natural gas

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 relevant threshold to be classified as JI SSC project was not exceeded during the monitoring period under consideration on an annual average basis.

Outstanding issues related to the Compliance of the monitoring plan with the monitoring methodology, PP's response and BV Certification's conclusion is described in Appendix A (refer to CAR 01).

3.4 Revision of monitoring plan (99-100) "Not applicable"

3.5 Data management (101)

The implementation of data collection procedures is in accordance with the monitoring plan, including the quality control and quality assurance procedures. These procedures are specified in sections B and C of the MR version 03 and are also mentioned among the Category 2 Documents in Section 5 "References" of this report.
The function of the monitoring equipment, including its calibration status, is in order.

Verification team observed on site that the initial reporting documentation including logbooks comprising data for the years 2008-2009 at some project sites was not physically available. This forward action request remains open until the evidence and records used for the monitoring are maintained in a traceable manner. This issue is a subject to be checked during the subsequent verification.

Outstanding issues related to the Data management, PP's response and BV Certification's conclusion is described in Appendix A (refer to CAR 06-09, CL 11-12, FAR 01).

3.6 Verification regarding programmes of activities (102-110) "Not applicable"

4 VERIFICATION OPINION

Bureau Veritas Certification has performed the initial and 1st periodic verification of the "Rehabilitation of the District Heating System in Donetsk City" Project in Ukraine. 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 Municipal commercial enterprise "Donetskmiskteplomerezha" is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions of the project on the basis set out within the project Monitoring and Verification Plan indicated in the final PDD version 03 dated 18/10/2010. 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 03 dated 15/11/2010 for the reporting period as indicated below. Bureau Veritas Certification confirms that the project is implemented as planned and described in approved project design. 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 01/01/2008 to 30/09/2010

Baseline emissions	: 368 389	t CO2 equivalents.
Project emissions	: 275 526	t CO2 equivalents.
Emission Reductions	: 92 863	t CO2 equivalents.

5 REFERENCES

Category 1 Documents:
Documents provided by Type the name of the company that relate directly to the GHG components of the project.

/1/ PDD "Rehabilitation of the District Heating System in Donetsk City" version 03 dated 18/10/2010
/2/ Monitoring report "Rehabilitation of the District Heating System in Donetsk City" version 01 dated 25/10/2010
/3/ Monitoring report "Rehabilitation of the District Heating System in Donetsk City" version 02 dated 29/09/2010
/4/ Monitoring report "Rehabilitation of the District Heating System in Donetsk City" version 03 dated 15/11/2010
/5/ Excel spread sheet: Annex 2: Calculation of CO2 emission reductions in the system of Municipal commercial enterprise "Donetskmiskteplomerezha" and plan of project measures implementation
/6/ Annex 3: Project and monitoring equipment
/7/ Letter of Approval No 1833/23/7 dated 10/11/2010 issued by National Environmental Investment Agency of Ukraine, acting as the Ukrainian Designated Focal Point
/8/ Letter of Approval No J294-0485 dated 26/10/2010 issued by the Federal Office for the Environment, acting as the Swiss Designated Focal Point

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

/1/ Serial CS #007390. Ministry of Regional Development and Construction of Ukraine. State Enterprise "State specialized expert organization". The central department of the Ukrainian state building expertise. SE "UKRDERZHBUDEXPERTUZA". SE "UKRDERZHBUDEXPERTIZA" branch in Donetsk region. Positive conclusion of state comprehensive expertise # 05-01151-10 from 08/10/2010
/2/ Annex to positive conclusion of state comprehensive expertise # 05-01151-10 from 08/10/2010
/3/ Head department of public services improvement and utility service. Decree # 72 from 14/10/10. Donetsk city
/4/ Municipal commercial enterprise of Donetsk city council "Donetskmiskteplomerezha". Decree # 407 from 03/09/2010 as for realization of a joint implementation project "Rehabilitation of the district heating system in Donetsk city"
/5/ Reconstruction of boiler-houses with flue gas heat recovery implementation on

boilers PTVM-30M - 8 units and TVG-8M - 14 units, Donetsk city. Technical specification

/6/ Reconstruction of boiler-houses with flue gas heat recovery implementation on boilers PTVM-30M - 8 units and TVG-8M - 14 units, Donetsk city. Specification for materials

/7/ MCE "Donetskmiskteplomerezha". Annex to the project estimate documentation for comprehensive examination realization

/8/ Heated area

/9/ Project metering equipment

/10/ **Municipal commercial enterprise "Donetskmiskteplomerezha". Kyiv heat district. Boil. Ionina**

/11/ Gas volume meter. NVP "GREMPIS". Universal-01 № 5515. 2007

/12/ Pressure sensor "Safir M" Model 5430. # 101988831

/13/ Pressure sensor "Safir M" Model 5420. # 11422980

/14/ Pressure sensor "Safir M" Model 5430. # 10127892

/15/ Gas volume corrector V25. INV # 430753

/16/ Energy resources log book

/17/ Hot-water boiler # 3 KVGM-50. Serial # 5045. Register # 46936. INV # 414698

/18/ Hot-water boiler # 4 KVGM-50. Serial # 6046. Register # 46937. INV # 414699

/19/ Hot-water boiler TVG-8M. Register # 44321. INV # 410412. Burner # 2

/20/ Hot-water boiler DE-10/14. Register # 31141. INV # 414651

/21/ **MCE "Donetskmiskteplomerezha". Kyiv heat district. Boiler qr. # 287**

/22/ Boiler-room address (Chapaeva Str.)

/23/ Hot-water boiler # 1 TVG-8M. Register # 43997. INV # 410175

/24/ Hot-water boiler # 2 TVG-8M. Register # 44964. INV # 412813

/25/ Hot-water boiler # 3 TVG-8M. Register # 43999. INV # 414706

/26/ Boiler-room register on gas expenses

/27/ Pressure sensor "Safir M" Model 5415. # 10521738

/28/ Pressure sensor "Safir M" Model 5051. # 10140797

/29/ Pressure sensor "Safir M" Model 5420. # 10293818. INV # 432719

/30/ Gas volume corrector V25

/31/ Gas meter G-650 # 8768

/32/ Gas volume meter. NVP "GREMPIS". Universal-01 # 2256. INV # 433413. 2007

/33/ **MCE "Donetskmiskteplomerezha" KHR. Boil. of Kyiv microdistrict. Tel. 258-01-96**

/34/ Hot-water boiler TVG-8M. Register # 44603. INV # 410769

/35/ Hot-water boiler TVG-8M. Register # 44604. INV # 419775

/36/ Hot-water boiler TVG-8M. Register # 45748. INV # 414132

/37/ Energy resources log book of KMD boiler-room

/38/ Pressure sensor "Safir M" Model 5051. # 10149803

/39/ Pressure sensor "Safir M" Model 5415. # 10456710

/40/ Pressure sensor "Safir M" Model 5415. # 10514751

/41/ Gas meter G-650 # 8752

/42/ Gas volume corrector V25. INV# 04154

/43/ Gas volume meter. NVP "GREMPIS". Universal-01 # 5657. 2007
/44/ **MCE "Donetskmiskteplomerezha". Voroshulovskyi heat district. Boiler qr. # 191a**
/45/ Boiler-room address (72a R.Luxemburg, Str. INV # 110267)
/46/ Hot-water boiler # 1 TVG-8M. Register # 45281. INV # 414001
/47/ Hot-water boiler # 2 TVG-8M. Register # 45280. INV # 414002
/48/ Energy resources log book of boiler-room kv.191a
/49/ Fuel energy recourses log book. Boiler kv. 191. TP 192
/50/ Pressure sensor "Safir M" Model 5430. # 12682439. INV # 430021
/51/ Pressure sensor "Safir M" Model 5420. # 12472451. INV # 430184
/52/ Pressure sensor "Safir M" Model 5051. # 11162201. INV # 430103
/53/ Gas volume meter. NVP "GREMPIS". Universal-01 # 6719. 2008
/54/ Gas volume corrector V25. INV # 430886
/55/ Gas meter G 400 RGK-01
/56/ **MCE "Donetskmiskteplomerezha". Voroshulovskyi heat district. Boiler # 289**
/57/ Hot-water boiler # 1 TVG-8M. Register # 44218. INV # 4140120
/58/ Hot-water boiler # 2 TVG-8M. Register # 44201. INV # 4140121
/59/ Hot-water boiler # 3 TVG-8M. Register # 44202. INV # 4140122
/60/ Hot-water boiler # 4 TVG-8M. Register # 44219. INV # 4140123
/61/ Hot-water boiler # 5 TVG-8M. Register # 44203. INV # 4140124
/62/ Energy recourses log book
/63/ Gas volume meter. NVP "GREMPIS". Universal-01 # 3810. 2007
/64/ Pressure sensor "Safir M" Model 5420. # 10302821
/65/ Pressure sensor "Safir M" Model 5415. # 10312780
/66/ Pressure sensor "Safir M" Model 5051. # 10138795
/67/ Pressure sensor "Safir M" Model 5051. # 10138798
/68/ E/e meter # 648506
/69/ E/e meter # 970080
/70/ E/e meter. Type SA4U-I672M
/71/ E/e meter # 860984
/72/ E/e meter # 014700
/73/ E/e meter # 964187
/74/ E/e meter # 883941
/75/ E/e meter "Energomira". CE 68038 # 53012431
/76/ Bureau Veritas verificator and VEMA S.A. project developers
/77/ **MCE "Donetskmiskteplomerezha". Boil. qr. DPI/245. Tel. 305-46-59**
/78/ Hot-water boiler # 4 TVG-8M. Serial # 44201. INV # 4140121
/79/ Hot-water boiler # 3 TVG-8M. Register # 44388. INV # 413355
/80/ Hot-water boiler # 2 TVG-8M. Register # 44587. INV # 410692
/81/ Hot-water boiler # 1 TVG-8M. Register # 44586. INV # 419909
/82/ Energy recourses log book of qua. 245
/83/ Gas volume meter. NVP "GREMPIS". Universal-01 # 6717. 2008
/84/ Gas volume corrector V25. INV # 05142
/85/ Pressure sensor "Safir M" Model 5051. # 1115791

/86/ Pressure sensor "Safir M" Model 5430. # 12414424
/87/ Pressure sensor "Safir M" Model 5420. # 11296252
/88/ Gas meter
/89/ E/e meter # 323775
/90/ E/e meter # 003533
/91/ E/e meter # 199102
/92/ E/e meter # 846075
/93/ E/e meter # 227473
/94/ E/e meter # 416177
/95/ E/e meter "Energomira". CE68038 # 53006360
/96/ Gas meter. INV # 431948
/97/ Gas volume corrector V 25
/98/ E/e meter # 666372
/99/ E/e meter # 327528
/100/ E/e meter # 884107
/101/ E/e meter # 10218
/102/ **MCE "Donetskmiskteplomerezha". Kaluninskyi heat district. Boil. qr. 138. Tel. 295-55-45**
/103/ Hot-water boiler # 1 TVG-8M. Serial # 912. INV # 410413
/104/ Hot-water boiler # 2 TVG-8M. Serial # 891. INV # 410414
/105/ Pressure sensor "Safir M" Model 5051. # 10134794
/106/ Pressure sensor "Safir M" Model 5415. # 10507742
/107/ Pressure sensor "Safir M" Model 5420. # 10290814
/108/ Energy resources log book of small boiler-
/109/ E/e meter # 770898
/110/ E/e meter # 50964
/111/ E/e meter # 006121
/112/ E/e meter # 892352
/113/ E/e meter # 059209
/114/ E/e meter # 770901
/115/ E/e meter "Energomira". CE68038 # 71018412
/116/ Gas volume meter. NVP "GREMPIS". Universal-01 # 3012. 2007
/117/ Energy recourses log book
/118/ **MCE "Donetskmiskteplomerezha". Budenivskyi heat district. Boiler "GB-2". Tel. 201-96-25**
/119/ Boiler # 1 NIISTU-5. Register # 29. INV # 414476
/120/ Boiler # 2 NIISTU-5. Register # 30. INV # 414533
/121/ Boiler # 3 NIISTU-5. Register # 31. INV # 414558
/122/ Boiler # 4 NIISTU-5. Register # 32. INV # 419821
/123/ Boiler # 5 NIISTU-5. Register # 33. INV # 414609
/124/ Energy recourses log book. G/B # 2
/125/ Register. Gas expenses per day
/126/ Gas volume corrector V 25. # 05147. INV # 430462
/127/ Gas meter G-250. RGK-01
/128/ E/e meter

/129/ Lead-in II registration shield. Electric meter. Active. # 118554
/130/ Lead-in I registration shield. Electric meter. Active. # 355391
/131/ **MCE "Donetskmiskteplomerezha". Budenisvkyi heat district. Boiler "SENB". Tel. 201-92-12**
/132/ Boiler # 1 KV-GM-1,1/95. INV # 415246
/133/ Boiler # 2 KV-GM-1,1/95. INV # 415247
/134/ Boiler # 3 KV-GM-1,1/95. INV # 415248
/135/ Boiler # 4 KV-GM-1,1/95. INV # 415306
/136/ Register. Energy recourses
/137/ Gas meter RGK-400-0,1 # 5909
/138/ Gas volume meter. NVP "GREMPIS". Universal-01 # 555. 2001
/139/ Lead-in registration shield. INV # 451702. Lead-in I. Electric meter. Reactive. Consumption. # 254600, # 940512
/140/ Lead-in registration shield. INV # 451702. Lead-in II. Electric meter. Reactive. Consumption. # 721649, # 330668
/141/ **MCE "Donetskmiskteplomerezha". VHR network. Boil. Artema-43. Tel. 305-51-34**
/142/ Boiler # 1 VIESSMANN. Vitoplex 100
/143/ Gas volume corrector V 25. # 06054
/144/ Gas meter GSM-G # 101164
/145/ E/e meter # 037708406
/146/ **MCE "Donetskmiskteplomerezha". Voroshulovskyi district. Boil. Artema-45 Tel. 311-62-89**
/147/ Boiler # 1 NIISTU-5. INV # 415072
/148/ Boiler # 2 NIISTU-5. INV # 415337
/149/ Gas volume corrector V25. # 05132. INV # 430878
/150/ Fuel energy recourses log book (Artema-45)
/151/ Fuel energy recourses log book (Artema-45)
/152/ E/e meter "Energomira". CE68038 # 53006167
/153/ Gaz meter G-100 RGK-1/30-01 # 0621
/154/ Enterprise Diploma in the category "Innovative industry eco-efficient technologies"
/155/ Winner Diploma of Terra Viva 2010 International Environmental Competition Team
/156/ UKRSEPRO certification system certificate
/157/ **MCE "Donetskmiskteplomerezha". Kuybushevskyi district. Boil. RSVD. Tel. 311-57-95**
/158/ Hot-water boiler # 1 REX 40 - K 40 # 06824 57997014
/159/ Hot-water boiler # 2 REX 40 - K 40 # 06824 57997012
/160/ Block installation "MINI-DON" BN - 120
/161/ Gas volume corrector V25. # 04012. INV # 430547
/162/ Gas meter GSM-G # 118964
/163/ Heat meter SA-94/2M
/164/ Energy recourses log book of small boiler-rooms (boil. qr. RSVD)
/165/ E/e meter

/166/ E/e meter # 318242
/167/ E/e meter # 145271
/168/ **MCE "Donetskmiskteplomerezha". Kuybushevskyi district. Boil. qr. 756. Tel. 53-02-32**
/169/ Steam-boiler # 3. Type APK-2102. Registration # D.0505/ks. Serial # 0094
/170/ Steam-boiler # 4. Type APK-2102. Registration # D.0506/ks. Serial # 0092
/171/ Hot-water boiler # 2 REX-95. Serial # 0662738467001. Registration # D 0504/KSM
/172/ Boiler # 2
/173/ Hot-water boiler REX - 95. Serial # 0662740609003. Register # D 0503/KSM.
/174/ Boiler # 1. 06627 40609003
/175/ Block installation "MINI-DON"
/176/ Circulating pump DAV VRN 120/340/63T
/177/ Gas meter G-100 RGK-1/30-01 # 0664
/178/ Gas volume corrector V25. # 05360. INV # 430205
/179/ Gas volume corrector V25. # 02289. INV # 430206
/180/ GDS scheme. Boil. qr. 756
/181/ Gas meter GSM-G # 118960
/182/ E/e meter NIK 2303 ARP # 0026346
/183/ Energy recourses log book of small boiler-rooms (qr. 756)
/184/ Municipal commercial enterprise of Donetsk city council "Donetskmiskteplomerezha". Decree from 03.09.2010 # 408 as for realization of a joint implementation project "Rehabilitation of the district heating system in Donetsk city"

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/ Skoryk Valentina – Engineer of production-and-technical department, MCE "Donetskmiskteplomerezha"
/2/ Borovskyy Vadym Vyacheslavovych - Manager of production-and-technical department, MCE "Donetskmiskteplomerezha"
/3/ Yevgeniy Vorobyov – engineer, "VEMA S.A."
/4/ Kucherenko Karina - engineer, "VEMA S.A."
/5/ Zheleznova Olga – boiler-house machinist
/6/ Solovyova Tatyana – boiler-house master
/7/ Dragan Aleksandr – boiler-house master
/8/ Perepelitsa Marina – boiler-house operator
/9/ Savenkova Nataliya – boiler-house master
/10/ Khomenko Valentina – boiler-house machinist
/11/ Parada Elena – boiler-house operator
/12/ Osmolovsky Sergey – boiler-house master
/13/ Kurevsky Sergey – boiler-house mechanic
/14/ Miroshnichenko Igor – boiler-house master
/15/ Seluneva Lyubov – boiler-house operator

/16/ Shkolnaya Lyliya – boiler-house operator
/17/ Repnaya Galina – boiler-house machinist
/18/ Yefremov Anatoly – boiler-house master
/19/ Shchuplina Nataliya – boiler-house machinist
/20/ Lukyanchikova Nataliya – boiler-house operator
/21/ Panasovsky Aleksandr – boiler-house master
/22/ Naumenko Larisa – boiler-house machinist
/23/ Sidorkina Irina – boiler-house master
/24/ Matveyeva Lyubov - boiler-house machinist

APPENDIX A: COMPANY PROJECT VERIFICATION PROTOCOL

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

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
Project approvals by Parties involved					
90	Has the DFPs of at least one Party involved, other than the host Party, issued a written project approval when submitting the first verification report to the secretariat for publication in accordance with paragraph 38 of the JI guidelines, at the latest?	Written project approvals by Switzerland and Ukraine have been issued by the DFPs of those Parties when submitting the first verification report for publication in accordance with paragraph 38 of the JI guidelines. (They are listed among Category 1 Documents in the Reference section of this report)			OK
91	Are all the written project approvals by Parties involved unconditional?	The abovementioned written approvals are unconditional constituting the			OK

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
		authorization by the DFPs of the legal entity to participate in the JI project under consideration			
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 implementation schedule contained in the PDD includes the rehabilitation of the heat distribution networks during the period from 01/2005 to 12/2011. It is stated in the PDD that it is planned to install the	**CL 01.** Please, explain why the emission reductions to be achieved from the implementation of that activity are not taken into account in the MRs Please, amend the explanation to the MR . **CL 02.** Please, provide explanations for this and include it in the respective	The implementation of all activities are taken into account in the MRs. In the PDD, amount of emission reductions is calculated on the basis of implementation of the project activities, but in the MRs calculations are based on fuel and electric power consumption. Implementation of the rehabilitation of heating systems is	OK

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
		heat recovery units during the period from 06/2009 to 12/2010. It was observed by the verification team during the on site visit that they has not be installed yet	MR.	realized mainly according to the project plan with some deviations from the schedule. It was induced by change of needs in heat energy. Heat recovery units will be installed due to production and technical necessity.	
		It is stated in the PDD that it is planned to install the frequency controllers during the period from 06/2010 to 12/2011. It was observed by the verification team during the on site visit that they has not be installed yet. Please, provide explanations for this and include it in the	**CL 03.** Please, provide explanations for this and include it in the respective MR.	Implementation of the rehabilitation of heating systems is realized mainly according to the project plan with some deviations from the schedule. Frequency controllers will be installed due to production and technical necessity.	

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
		respective MR.			
93	What is the status of operation of the project during the monitoring period?	Project equipment has been installed with minor deviations from the schedule and is fully operational. It has been seen on site and can be proved by the verification team.			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?		**CAR 01.** Please correct the baseline year for annual gas consumption in the excel spread sheets	The baseline year for annual gas consumption in the excel spread sheets was corrected.	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?	Among the key factors that were taken into account for calculating the emission reductions there are: • high priority of heat supply			OK

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
		sector for the national energy saving policy • high price of the fuel, in particular natural gas • lack of monitoring devices for heat and heat-carrier consumption in the municipal boiler-houses, and others (For more detailed information, please, refer to Section 3.3 of the present report)			
95 (b)	Are data sources used for calculating		**CL 04.** Please provide	Marketing service	OK

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
	emission reductions or enhancements of net removals clearly identified, reliable and transparent?		evidences or proofs that the heating area has not changed during the monitoring periods	department of enterprise carries out an annual accounting of the heating area. Supporting documents that the heating area has not changed during the monitoring periods can be issued by this department.	
			CL 05. Please explain what measurement units were used to calculate the number of hot water consumers.	Personal account of enterprise determines the number of hot water consumers. It is measured in thousands of people. Due corrections were amended to the excel file.	
			CL 06. Please provide evidences or proofs that the number of hot water	Information about the number of tenants is provided by the Housing Operations	

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
			consumers has not changed during the monitoring periods	Committee. Supporting documents that the number of hot water consumers has not changed during the monitoring periods can be issued by this department.	
			CL 07. Please explain how the volume of performed works was calculated	The volume of performed works was calculated according to production and technical necessity, needs in heat energy and financial revenues of the enterprise.	
			CL 08. Please, provide evidences or proofs that duration of the periods of hot water supply service was unchanged during the	Annual duration of the periods of hot water supply service makes 351 days and doesn't change in course of time.	

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
			monitoring periods	Supporting documentation can be provided by the marketing service department of enterprise.	
			CL 09. Please, explain what 23 in the formula for calculation of conversion factor for the average load within the heating period	Maximal connected load for heating services shall be measured by MCE "Donetskmiskteplmerezha" for each heating period. It shall be calculated for necessary heat energy under the temperature of (-23)^{o}C (for Donetsk region, According to the Construction norms and specifications 2.01.01-84 (Climatology in thermal power engineering)). See Annex 1.	

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
			CL 10. There is a determined portion of fuel consumed for heating purposes. Please, explain why the portion for the hot water supply purposes is not determined	There is no need to determined the portion for the hot water supply purposes additionally, because it's calculated like: (1 – a_b), where a_b - portion of fuel consumed for heating purposes.	
			CAR 02. Please, explain what the abbreviation FER (p.11 in both MRS) stands for and make appropriate amendments in the MRs	FER stands for Fuel and Energy Resources. Appropriate amendments were made in the MRs.	
			CAR 03. Please, remove the columns that doesn't refer to the current project from the excel spread sheets	The columns that doesn't refer to the current project from the excel spread sheets were	

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
				removed.	
			CAR 04. Please correct the boiler-houses addresses in the excel files	The boiler-houses addresses in the excel files were corrected.	
			CAR 05. Please, check and correct LHV coefficient used for calculations for the year 2010.	LHV used for calculations for the year 2010 is checked and corrected.	
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?	CO2 emission factor for natural gas is used for calculating the emission reductions. Its choice has been appropriately justified			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	The relevant threshold to be classified as JI SSC project was not exceeded during the monitoring period			OK

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
	PDD for the JI SSC project or the bundle for the monitoring period determined?	under consideration on an annual average basis.			
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	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	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	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?	N/A	N/A	N/A	N/A
99 (b)	Does the proposed revision improve the accuracy and/or applicability of information	N/A	N/A	N/A	N/A

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
	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?		**CAR 06.** Please add the gas supplier, independent chemical laboratory to Section B.1.3.(Involvement of Third Parties) of the MRs. **CAR 07.** Please, list in Section B.6. of the MRs the types, source and access to the external data that will be used in the course of emission reductions monitoring **CAR 08.** Please insert the third parties to be involved in the project to Section C.2 **CAR 09.** Please, describe in Section C.3. (It should be	The gas supplier, independent chemical laboratory was added to Section B.1.3. (Involvement of Third Parties) of the MRs. The types, source and access to the external data that is used in the course of emission reductions monitoring were listed. The third parties are inserted in Section B.1.3 The internal verifications	OK

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
			called External and Internal audits and control measures) the internal verifications procedure including the GHG data management systems to ensure consistent application of calculation methods existing at the enterprise. **CL 11.** Please, explain whether the protection measures for databases are in place (access restrictions and editor rights). **CL 12.** Please, provide the description of the IT systems used for GHG monitoring and reporting, explain whether they are tested and documented.	procedure was described in Section C.2. Databases of enterprise are not sensitive commercial information and may be obtained by other companies or individuals. There are no the IT systems used for GHG monitoring and reporting at the enterprise	
101 (b)	Is the function of the monitoring equipment, including its calibration status, is in order?	Control and monitoring comes to measurement of fuel and energy			OK

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
		consumption.Measuring equipment was calibrated by Donetsk center of standardization, metrology and certification of meters.			
101 (c)	Are the evidence and records used for the monitoring maintained in a traceable manner?		**FAR 01.** Verification team observed on site that the initial reporting documentation including logbooks comprising data for the years 2008-2009 at some project sites was not physically available.	The initial reporting documentation including logbooks comprising data for the years 2008-2009 will be physically available during the following periodic verification.	To be checked during the following periodic verification.
101 (d)	Is the data collection and management system for the project in accordance with the monitoring plan?	The implementation of data collection procedures is in accordance with the monitoring plan, including the quality control and quality assurance procedures.			OK
Verification regarding programs of activities (additional elements for assessment)					

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
102	Is any JPA that has not been added to the JI PoA not verified?	N/A	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	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	N/A
104	Does the monitoring period not overlap with previous monitoring periods?	N/A	N/A	N/A	N/A
105	*If the AIE learns of an erroneously included JPA,* has the AIE informed the JISC of its findings in writing?	N/A	N/A	N/A	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;	N/A	N/A	N/A	N/A

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
	− The amounts of expected emission reductions of the JPAs being verified; − The number of JPAs for which emission reductions are being verified; − The length of monitoring periods of the JPAs being verified; and − The samples selected for prior verifications, if any?				
107	Is the sampling plan ready for publication through the secretariat along with the verification report and supporting documentation?	N/A	N/A	N/A	N/A
108	Has the AIE made site inspections of at least the square root of the number of total JPAs, rounded to the upper whole 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?	N/A	N/A	N/A	N/A
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	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	N/A

Appendix B: Verifiers CV's

Work carried out by:

Oleg Skoblyk, Power Management Specialist
Climate Change Verifier
Bureau Veritas Ukraine HSE Department project manager.
Oleg Skoblyk has graduated from National Technical University of Ukraine 'Kyiv Polytechnic University" with specialty Power Management. He has successfully completed IRCA registered Lead Auditor Training Course for Environment Management Systems and Quality Management Systems. Oleg Skoblyk has undergone intensive training on Clean Development Mechanism /Joint Implementation and he is involved in the determination/verification of 9 JI projects.

Svitlana Gariyenchyk, Ecology Specialist
Team Member, Climate Change Verifier
Bureau Veritas Ukraine Health, Safety and Environment Department, Project Manager.

She has 8 year working experience as a Project Manager, Head of Investment, Environmental Programs and Training Department in the company operating in the sphere of ecological audit, management and certification. She is experienced in European Union programs as an environmental protection expert.
She followed study and training course within TACIS program on training of managers in the sphere of environmental protection. She has completed intensive training course "Lead verifier of JI projects". She is involved in the determination/verification of 9 JI projects.

Denis Pishchalov (specialist in economics)

Team member, Financial Specialist
Bureau Veritas Ukraine, Specialist in economics

Master of foreign trade, he has more than five year of experience in foreign trade and procurement. In particular one year as foreign trade manager in the Engineering Corporation (manufacturer and contractor in the municipal sector) and one year in the NIKO publishing house, one year as sales manager in the ITALCOM srl. In addition Denis has spent four years working as procurement specialist in Ukrainian Energy Service Company and two years as chief product manager in the Altset JSC. At the moment Denis is deputy director for finance and economy in the SUD of UTEM JSC.

The determination report was reviewed by:

Ivan G. Sokolov, Dr. Sci. (biology, microbiology)
Climate Change Lead Verifier
Bureau Veritas Ukraine Health, Safety and Environment Department Manager.
Ivan Sokolov has over 25 years of experience in Research Institute in the field of biochemistry, biotechnology, and microbiology. He is a Lead Auditor of Bureau Veritas Certification for Environment Management Systems (IRCA registered), Quality Management Systems (IRCA registered), Occupational Health and Safety Management Systems, and Food Safety Management Systems. Mr. I.Sokolov has performed over 140 audits since 1999. He is a Lead Tutor of IRCA registered ISO 14000 EMS Lead Auditor Training Course, Lead Tutor of IRCA registered ISO 9000 QMS Lead Auditor Training Course. Ivan Sokolov is also a Tutor of Join Implementation/Clean Development Lead Verifier Training Course and has performed determination/verification of more that 50 JI projects.