DETERMINATION REPORT
OJSC "OBLTEPLOCOMUNENERGO"

DETERMINATION OF THE "REHABILITATION OF DISTRICT HEATING SYSTEMS IN DNIPROPETROVSK REGION"

REPORT NO. UKRAINE-DET/0186/2010

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OJSC "Oblteplocomunenergo"	Mr Barbarov Yu.A

Summary:
Bureau Veritas Certification has made the determination of the "Rehabilitation of District Heating Systems in Dnipropetrovsk Region" project of OJSC "Oblteplocomunenergo" " located in Dnipropetrovsk Region, Ukraine, 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 determination scope is defined as an independent and objective review of the project design document, the project's baseline study, monitoring plan and other relevant documents, 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 determination report and opinion. The overall determination, from Contract Review to Determination Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

The first output of the determination process is a list of Clarification, Forward and Corrective Actions Requests (CL, FAR and CAR), presented in Appendix A. Taking into account this output, the project proponent revised its project design document.

In summary, it is Bureau Veritas Certification's opinion that the project correctly applies Guidance on criteria for baseline setting and monitoring and meets the relevant UNFCCC requirements for the JI and the relevant host country criteria.

Report No.:	Subject Group:
UKRAINE/0186/2010	JI
Project title:	
"Rehabilitation of District Heating Systems in Dnipropetrovsk Region"	
Work carried out by:	
Oleg Skoblyk – Team Leader, Lead Verifier Igor Kachan – Team Member, Verifier Denis Pishchalov - Team Member, Financial Specialist	
Work verified by:	
Ivan Sokolov - Internal Technical Reviewer	
Work signed by:	
Ivan Sokolov – Operational Manager	

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1 INTRODUCTION

OJSC "Oblteplocomunenergo"" has commissioned Bureau Veritas Certification to determinate its JI project "Rehabilitation of District Heating Systems in Dnipropetrovsk Region" (hereafter called "the project") in Dnipropetrovsk Region, Ukraine.

This report summarizes the findings of the determination 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

The determination serves as project design verification and is a requirement of all projects. The determination is an independent third party assessment of the project design. In particular, the project's baseline, the monitoring plan (MP), and the project's compliance with relevant UNFCCC and host country criteria are validated in order to confirm that the project design, as documented, is sound and reasonable, and meets the stated requirements and identified criteria. Determination is a requirement for all JI projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of emissions reductions units (ERUs).

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 determination 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 determination 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 design.

1.3 Determination team

The determination team consists of the following personnel:

Oleg Skoblyk
Bureau Veritas Certification Team Leader, Climate Change Verifier

Igor Kachan
Bureau Veritas Certification Team Member, Climate Change Verifier

Denis Pishchalov

Bureau Veritas Certification, Financial Specialist

This determination report was reviewed by:

Ivan Sokolov

Bureau Veritas Certification, Internal Technical Reviewer

2 METHODOLOGY

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

In order to ensure transparency, a determination 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 determination and the results from determining the identified criteria. The determination protocol serves the following purposes:

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

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

2.1 Review of Documents

The Project Design Document (PDD) submitted by OJSC "Oblteplocomunenergo" and additional background documents related to the project design and baseline, i.e. country Law, Guidelines for users of the joint implementation project design document form, Guidance on criteria for baseline setting and monitoring, Kyoto Protocol, Clarifications on Determination Requirements to be Checked by a Accredited Independent Entity were reviewed.

PDD "Rehabilitation of District Heating Systems in Dnipropetrovsk Region" project of OJSC "Oblteplocomunenergo" version 1 was submitted on 15/11/2010.

To address Bureau Veritas Certification corrective action and clarification requests the project participants revised the PDD and resubmitted it on 21/12/2010 as version 03.

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

2.2 Follow-up Interviews

On November 19, 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 RME "Dniproteploenergo" and Institute of Engineering Ecology were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
"Donetskmiskteplom erezha "	➢ Implementation schedule ➢ Local stakeholder's response. ➢ Metering equipment control ➢ Metering record keeping system, database ➢ Monitoring plan and procedures ➢ Organizational structure ➢ Permits and licenses ➢ Project approach ➢ Project boundary ➢ Project history ➢ Quality management procedures and technology ➢ Rehabilitation/Implementation of equipment (records) ➢ Responsibilities and authorities ➢ Technical documentation ➢ Training of personnel
CONSULTANT Institute of Engineering Ecology	➢ Applicability of methodology ➢ Baseline and project scenarios ➢ Barriers analysis ➢ Additionality justification ➢ Common practice analysis ➢ Monitoring plan ➢ Conformity of PDD to JI requirements ➢ Calculation of emission reduction.

2.3 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the determination 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 project design.

Corrective Action Requests (CAR) is issued, where:

(a) The project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions;
(b) The JI requirements have not been met;
(c) There is a risk that emission reductions cannot be monitored or calculated.

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 determination team may also use the term Clarification Request (CL), if information is insufficient or not clear enough to determine whether the applicable JI requirements have been met.

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

3 DETERMINATION CONCLUSIONS

In the following sections, the conclusions of the determination are stated. The findings from the desk review of the original project design documents and the findings from interviews during the follow up visit are described in the Determination Protocol in Appendix A.

The Clarification and Corrective Action Requests are stated, where applicable, in the following sections and are further documented in the Determination Protocol in Appendix A. The determination of the Project resulted in 39 Corrective Action Requests and 1 Forward Action Request

The numbers between brackets at the end of each section correspond to the DVM paragraph.

3.1 Project approvals by Parties involved (19-20)

The project has no final approval of the Government of the host Party (Ukraine), namely by the National Environmental Investment Agency of Ukraine.

The second party is not determined yet.

As the project has no approvals by the Parties involved, CAR06 remains pending and will be closed after report finalizing (refer to the Appendix A).

3.2 Authorization of project participants by Parties involved (21)

After receiving Determination Report from the Accredited Independent Entity the project documentation will be submitted to the Ukrainian Designated Focal Point (DFP) which is National Environmental Investment Agency of Ukraine, for receiving a Letter of Approval with authorization of Ukrainian project participant. The written approval by the sponsor Party will be obtained later on.

CAR06 remains pending and will be closed after report finalizing (refer to the Appendix A).

3.3 Baseline setting (22-26)

The PDD explicitly indicates that JI specific approach was the selected for identifying the baseline. It has been elaborated by the Institute of Engineering Ecology of Ukraine, approved by the International Academy of the Environment and applied in a number of JI projects "Rehabilitation of the District Heating System in Dnipropetrovsk Region", "Rehabilitation of the District Heating System in Chernigiv city», "Rehabilitation of the District Heating System in Crimea» and "Rehabilitation of the District Heating System in Kharkiv City», which received their final determination at JISC.

The PDD provides a detailed theoretical description in a complete and transparent manner, as well as justification, that the baseline is established:

(a) By listing and describing the following plausible future scenarios on the basis of conservative assumptions and selecting the most plausible one:

a. "Business as usual" with minimum reconstruction works;
b. Rehabilitation of the District Heating System in Dnipropetrovsk Region without Joint Implementation mechanism;
c. Exclusion of the non-key type activity such as, for example, elimination of frequency controllers, etc., installation from the project.

(b) Taking into account relevant national and sectoral policies and circumstances, such as sectoral reform initiatives, local fuel availability, power sector expansion plans, and the economic situation in the project sector. In this context, the following key factors that affect a baseline are taken into account:

- According to The Laws of Ukraine "On licensing of the separate types of activity" (№ 1775-III, from June 01, 2000) and "On heat energy supply" (№ 2633-IV from 02.06.2005); Ukrainian Government

Regulation "On introduction of changes to the Government Regulations №1698 from 14.11.2000 and №756 from 04.07.2001" №549 from 19.04.2006 and "On approval of the list of licensing bodies" №1698 from 14.11.2000, execution of economic activity in fields of heat energy production, distribution and supply require a license that is issued by Ministry of Housing and Municipal Economy of Ukraine. District heating enterprises that implement the project have such licenses. The Project "Rehabilitation of District Heating Systems in Dnipropetrovsk Region" has been prepared according to The Law of Ukraine from 01.07.1994 №74/94-VR "On energy saving" and The Law of Ukraine from 22.12.2005 №3260-IV "On changes in The Law of Ukraine "On energy saving".

- There is no local legislation regarding the time of boilers replacement and maximum lifetime permitted for boilers. It is common practice to exploit boilers which were installed 50-60 years ago in Ukraine, if they pass the technical examination by the authorized body.
- 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 suppl.
- The majority of boiler-houses in Ukraine are not equipped with devices for heat-carrier expenditure definition or heat meters. Fuel consumption is only one parameter, which is defined regularly and with high precision in the boiler houses.
- The specific project approach is based on the permanent measuring of the fuel consumption and amendments for possible parameters changes in baseline in comparison with reporting year. The variable parameters may are changes in Net Calorific Value of fuels, quality of heating service, weather changes, changes in customers' number, etc. Taking into account only equipment efficiency does not eliminate the possibilities of undersupply of heat to customers (deterioration of heat supply service), and possible weather warming in reported year, change in fuel quality, disconnection of some consumers, and other factors, and could lead to artificial overestimation of ERUs amount.

All explanations, descriptions and analysis pertaining to the baseline in the PDD are identified appropriately. The AIE confirms that the selected baseline methodology can be applicable to the project activity and established in transparent and conservative manner.

3.4 Additionality (27-31)

The most recent version of the "Tool for the demonstration and assessment of additionality" approved by the CDM Executive Board was used, in accordance with the JI specific approach, defined in paragraph 2 (c) of the annex I to the "Guidance on criteria for baseline setting and

monitoring". All explanations, descriptions and analyses are made in accordance with the selected tool.

The PDD provides a justification of the applicability of the approach with a clear and transparent description.
Three alternatives to the project activity consistent with current laws and regulations were identified in the project design.
The first alternative is the continuation of the current situation (no project activity or other alternatives undertaken), i.e. business-as-usual scenario with minimum reconstruction works, approximately balanced by overall degradation of the district heating system.
The second alternative is to make reconstruction works (the proposed project activity) without JI mechanism.
The third alternative is the shortened project activity, without any of the non-key type of activities.
It is clearly demonstrated in the section B.2. that all the alternatives are in compliance with the mandatory laws and regulations.

PDD includes barrier analysis to provide justification of additionality. Identification of barriers that would prevent the implementation of the proposed project activity is included in the section B.2. of the PDD:
- investment barrier;
- technological barrier;
- organizational barrier (the detailed information can be found in the section B of the PDD).
All explanations, descriptions and analyses with regard to additionality are made in accordance with the selected methodology. It is shown that the identified barriers would not prevent the implementation of one of the defined alternatives - business-as-usual scenario. However, the proposed project activity as well as the other alternatives faces strong barriers preventing their implementation.

The common practice is an essential part of addidionality assessment process. A common practice for district heating enterprises in Ukraine is only a necessary repair of the old equipment, mainly in emergency cases, and not the renewal. JI incentive makes possible to obtain the necessary additional funds for real rehabilitation of the district heating system. This is confirmed by the present situation that the real comprehensive rehabilitation of the district heating systems in Ukraine is performed only by the enterprises participating in JI projects. There are at least seven District Heating Rehabilitation Projects with JI mechanism in Ukraine at advanced stages beside the project: for DH systems in Chernihiv region, Donetsk region, AR Crimea, Kharkiv city, Rivne region, Luhansk city, Sevastopol city.

Thus based on the due analysis provided in the PDD it can be concluded that the approach applied sufficiently demonstrates project's additionality and the necessary proofs are provided.

3.5 Project boundary (32-33)

The project boundary defined in the PDD, encompasses all anthropogenic emissions by sources of greenhouse gases (GHGs) that are:

(i) Under the control of the project participants:
- CO_2 emissions from natural gas combustion in boilers

(ii) Reasonably attributable to the project:
- CO_2 emissions from power stations due to electricity production to the grid, that consumed by boiler houses.
-

(iii) Significant, i.e., as a rule of thumb, would by each source account on average per year over the crediting period for more than 1 per cent of the annual average anthropogenic emissions by sources of GHGs, or exceed an amount of 2,000 tonnes of CO_2 equivalent, whichever is lower.

The delineation of the project boundary and the gases and sources included are appropriately described and justified in the PDD

3.6 Crediting period (34)

The PDD states the starting date of the project as the date on which the implementation, construction or real action of the project will begin or began, and the starting date is 01/01/2003, which is after the beginning of 2000.

The PDD states the expected operational lifetime of the project in years and months, which is 28 years or 336 months.

The PDD states the length of the crediting period in years and months, which is 28 years or 336 months, and its starting date as 01/01/2003, which is the date the first emission reductions or enhancements of net removals are generated by the project.

The PDD states that the crediting period for the issuance of ERUs starts only after the beginning of 2008 and does not extend beyond the operational lifetime of the project.

The PDD states that the extension of its crediting period beyond 2012 is subject to the host Party approval, and the estimates of emission reductions or enhancements of net removals are presented separately for those until 2012 and those after 2012 in all relevant sections of the PDD.

3.7 Monitoring plan (35-39)

The PDD, in its monitoring plan section, indicates that JI specific approach was the selected.

The monitoring plan describes all relevant factors and key characteristics that will be monitored, and the period in which they will be monitored, in particular also all decisive factors for the control and reporting of project performance, such as fuel saving.

The monitoring plan specifies the indicators, constants and variables that are reliable (i.e. provide consistent and accurate values), valid (i.e. be clearly connected with the effect to be measured), and that provide a transparent picture of the emission reductions or enhancements of net removals to be monitored such as:

1. Fuel consumption by boiler-houses (natural gas and coal)
2. Heating value of natural gas
3. Average external temperature during heating season
4. Average internal temperature during heating season
5. Quantity of hot water supply consumers
6. Total heating area
7. Average heat-transfer factor of the buildings in base year
8. Heating area of buildings (existed in base year) with improved heat insulation in reporting year
9. Heating area of new buildings connected to the heat supply system (it is conceded that such buildings have new improved heat insulation) in reporting year
10. Heat-transfer factor of the buildings with new thermal insulation
11. Duration of heating period
12. Duration of hot water supply period
13. Maximal connected load for heating services
14. Connected load for hot water supply
15. Standard specific discharge of hot water at personal account
16. CO_2 emission factor
17. Conversion factor for average load within heating period
18. Electric energy consumption by the boiler-houses, wherein frequency regulation are planned

The monitoring plan explicitly and clearly distinguishes:

- Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), and that are available already at the stage of determination, such as

For parameters of the baseline year:
1. Fuel consumption at boiler houses
2. Power consumption

3. Average annual Calorific Value
4. Carbon emission factors
5. Carbon emission factor for electricity consumption
6. Daily outside temperature in the heating season
7. Average inside temperature in the heating season
8. Number of customers of hot water supply service
9. Heating area
10. Average heat transfer factor of heated buildings
11. Heating period duration
12. Duration of period of hot water supply service
13. Connected load to the boiler-house, that is required for heating
14. Connected load to the boiler-house, that is required for hot water supply service
15. Standard specific discharge of hot water per personal account

(iii) Data and parameters that are monitored throughout the crediting period, such as:

For parameters of the project year:
1. Fuel consumption at boiler houses
2. Power consumption
3. Average annual Calorific Value
4. Carbon emission factors
5. Carbon emission factor for electricity consumption
6. Daily outside temperature in the heating season
7. Average inside temperature in the heating season
8. Number of customers of hot water supply service
9. Heating area
10. Average heat transfer factor of heated buildings
11. Heating period duration
12. Duration of period of hot water supply service
13. Connected load to the boiler-house, that is required for heating
14. Connected load to the boiler-house, that is required for hot water supply service
15. Standard specific discharge of hot water per personal account
16. Heating area of buildings (previously existed in the base year) with the renewed (improved) thermal insulation in the reported year
17. Heating area of newly connected buildings (assumed with the new (improved) thermal insulation) in the reported year
18. Heat transfer factor of buildings with new thermal insulation

The monitoring plan describes the methods employed for data monitoring (including its frequency) and recording depending on its kind. It is provided in comprehensive manner in Tables in the Section D of the PDD.

The monitoring plan elaborates all algorithms and formulae used for the estimation of baseline emissions and project emissions/removals or direct

monitoring of emission reductions from the project, leakage, as appropriate, such as:

Project emissions:

$E_i^r = E_{1i}^r + E_{cons\ i}^r$
where:
E_{1i}^r – CO_2 emissions due to fuel consumption for heating and hot water supply service for an i boiler-house in the reported year, tCO_2eq;
$E_{cons\ i}^r$ – CO_2 emissions due to electric power consumption from greed by the i boiler-house in the reported year, tCO_2eq.

$E_{1i}^r = NCV^r * Cef^r * B^r_i$
where:
NCV^r_i – Average annual Net Calorific value, MJ/m^3 (MJ/kg)
Cef – carbon emission factor, $ktCO_2/TJ$;
B^r_i – amount of fuel consumed by a boiler-house in the reported year, ths m^3 or tonns;

$E_{cons\ i}^r = P^r * CEFc$;
where:
P_r – electric power consumption by the boiler-houses and central heating points with energy saving measures implemented in the reported year, MWh;
CEFc – Carbon Emission factors for reducing electricity consumption in Ukraine, tCO_2eq/MWh;
[r] index – related to the reporting year

Baseline emissions:

$E_i^b = E_{1i}^b + E_{cons\ i}^b$
E_i^b – baseline emissions, tCO_2eq
E_{1i}^b– CO_2 emissions due to fuel consumption for heating and hot water supply service for an i boiler-house in the baseline year, tCO_2eq;
$E_{cons\ i}^b$ – CO_2 emissions due to electric power consumption from greed by the i boiler-house in the baseline year, t CO_2eq.

For the case when in the baseline year the hot water supply service was provided (independent of this service duration, $(1-a_b) \neq 0$), the formulae for E_1^b is:

$E_1^b = NCV_b * Cef_b * [B_b * a_b * K_1 * K_h + B_b * (1-a_b) * K_1 * K_w]$,
where the first term in brackets describes fuel consumption for heating, and the second one – fuel consumption for hot water supply.

For the case when in the baseline year the hot water supply service was absent at all ((1-a_b) = 0), and in the reported year this service was provided (due to improvement of heat supply service quality for population), the formulae for E_1^b is:

$E_1^b = NCV_b*Cef_b*[B_b*a_b*K_1*K_h + B_r*(1-a_r)*K_1*K_{w0}]$.
where:
NCV_b – Average annual Net Calorific value in the baseline year, MJ/m^3 (MJ/kg);
Cef – carbon emission factor, $KtCO_2/TJ$;
B_b – amount of fuel consumed by a boiler-house in the baseline year, ths m^3 or tonns;

K_1, $K_h = K_2* K_3* K_4$; $K_w=K_5*K_6*K_7$ – adjustment factors;
a_b – portion of fuel (heat), consumed for heating purposes in the baseline year;
(1-a_b) – portion of fuel (heat), consumed for hot water supply services in the baseline year;
a_r – portion of fuel (heat), consumed for heating purposes in the reported year.

$a_b= L_h^b*g*N_h^b/ (L_h^b*g*N_h^b+L_w^b*N_w^b)$;
where:
L_h^b– maximum connected load required for heating in the baseline year, MW;
L_w^b– connected load required for hot water supply service in the baseline year, MW;
g – recalculating factor for average load during heating period
N_h^b– duration of heating period in the baseline year , hours
N_w^b – duration of hot water supply service in the baseline year, hours

$a_r= L_h^r*g*N_h^r/ (L_h^r*g*N_h^r+L_w^r*N_w^r)$
where:
L_h^r– maximum connected load required for heating in the reported year, MW;
L_w^r– connected load required for hot water supply service in the reported year, MW;
g – recalculating factor for average load during heating;
N_h^r– duration of heating period in the reported year, hours,
N_w^r– duration of hot water supply service in the reported year, hours.

$K_1=NCV_b/NCV_r$;
where:
NCV_b – Average annual Net Calorific value in the baseline year, MJ/m^3 (MJ/kg);
NCV_r – Average annual Net Calorific value in the reported year, MJ/m^3 (MJ/kg)

$K_2 = (T_{in\ r} - T_{out\ r}) / (T_{in\ b} - T_{out\ b})$;
where:
$T_{in\ r}$ – average inside temperature for the heating period in the reported year, K (or ^{0}C);
$T_{in\ b}$ – average inside temperature for the heating period in the baseline year, K (or ^{0}C);
$T_{out\ r}$– average outside temperature for the heating period in the reported year , K (or ^{0}C);
$T_{out\ b}$– average outside temperature for the heating period in the reported year , K (or ^{0}C)

$K_3 = [(F_{h\ r} – F_{h\ t\ r} – F_{h\ n\ r})*k_{h\ b} + (F_{h\ n\ r} + F_{h\ t\ r})*k_{h\ n}] / F_{h\ b}*k_{h\ b}$;
where:
$F_{h\ b}$ – heating area in the baseline year, m^2;
$F_{h\ r}$ – heating area in the reported year, m^2;
$F_{h\ n\ r}$ – heating area of new buildings connected to DH system (assumed with the new (improved) thermal insulation) in the reported year, m^2;
$F_{h\ t\ r}$ – heating area of buildings (previously existed in the baseline year) in reported year with the renewed (improved) thermal insulation, m^2;
$k_{h\ b}$ – average heat transfer factor of heated buildings in the baseline year, W/m^2*K;
$k_{h\ n}$ – heat transfer factor of heated buildings with the new thermal insulation (new buildings or old ones with improved thermal insulation), W/m^2*K.

$K_4=N_{hr}/N_{hb}$;
where:
N_{hb},– duration of heating period in the baseline year, hours
N_{hr} – duration of heating period in the reported year, hours

$K_5 =n_{wr} / n_{wb;}$
where:
N_{wb},– number of customers in the baseline year;
N_{wr} – number of customers in the reported year

$K_6 = v_{w\ r} / v_{w\ b}$;
where:
$v_{w\ r}$ – standard specific discharge of hot water per personal account in the reported year, (in heat units, kWh/h);
$v_{w\ b}$ – standard specific discharge of hot water per personal account in the baseline year, (in heat units, kWh/h).

$K_7 = N_{wr}/ N_{wb}$;
where:
N_{wr}– duration of hot water supply service in the reported year, hours.
N_{wb} – duration of hot water supply service in the baseline year, hours.

The monitoring plan presents the quality assurance and control procedures for the monitoring process. The PDD provides information about type of equipment, calibration procedure and procedure of actions in case of malfunction.

The monitoring plan clearly identifies the responsibilities and the authority regarding the monitoring activities. The roles and responsibilities of the persons involved to monitoring process are described in the Annex 3. On the whole, the monitoring plan reflects good monitoring practices appropriate to the project type.

The monitoring plan provides, in tabular form, a complete compilation of the data that need to be collected for its application, including data that are measured or sampled and data that are collected from other sources (e.g. official statistics, IPCC, commercial and scientific literature etc.) but not including data that are calculated with equations.

3.8 Leakage (40-41)

The PDD appropriately describes an assessment of the potential indirect emissions of CO_2, CH_4, N_2O generated by fuel production and its transportation and appropriately explains that they are neglected, as they are not under the direct control of the enterprise.

3.9 Estimation of emission reductions or enhancements of net removals (42-47)

The PDD indicates assessment of emissions in the baseline scenario and in the project scenario as the approach chosen to estimate the emission reductions generated by the project.

The PDD provides the ex ante estimates of:

(a) Emissions for the project scenario (within the project boundary).

There are two kinds of emissions which are included in the project scenario:
1) Emissions of CO_2 from heat generation sources operated by systems of heat supply of Dnipropetrovsk region (E_1^r).
2) Emissions of CO_2 due to electricity production to the grid, that consumed by boiler houses and heating points (E_2^r).

Project annual CO_2 emissions after project implementation (from 2013) are presented in the Table below.

Project emissions		Project emissions, t CO_2

Emissions of CO2 from heat generation sources operated by systems of heat supply of Dnipropetrovsk region	E_1^r	338356
Emissions of CO_2 due to electricity production to the grid, that consumed by boiler houses and heating points	E_2^r	44436
Total	E^r	382792

The detailed calculations and the estimates of project emissions from the beginning until the end of the crediting period for each year can be found in the section E.6 of the PDD and the Appendix 4 (Excel file "Rehabilitation of District Heating Systems in Dnipropetrovsk Region CO_2").

(b) Leakage, which is considered equal zero tons of CO_2eq;

(c) Emissions for the baseline scenario (within the project boundary)

Baseline emissions consist of two types of GHG emissions:
1) Emissions of CO_2 from heat generation sources operated by systems of heat supply of cities of Dnipropetrovsk region (E_1^b);
2) Emissions of CO_2 due to electricity production to the grid, that consumed by boiler houses and heating points (E_2^b).

Baseline annual CO_2 emissions after project implementation (from 2013) are presented in the Table below.

Baseline emissions by the sources of GHG emission		Baseline emissions, t CO_2
Emissions of CO_2 from heat generation sources operated by systems of heat supply of cities of Dnipropetrovsk region	E_1^b	410253
Emissions of CO_2 due to electricity production to the grid, that consumed by boiler houses and heating points	E_2^b	46766
Total	E^b	457019

More detailed calculation of resulting annual baseline emissions that would take place during typical heating season (if DH systems of district heating enterprises that implement the project remains unchanged) are presented in the section B of the PDD and the Appendix 4 (Excel file "Rehabilitation of District Heating Systems in Dnipropetrovsk Region CO_2".

(d) Emission reductions adjusted by leakage (based on (a)-(c) above)

Year	Estimated project emissions (tonnes of CO_2 equivalent)	Estimated leakage (tonnes of CO_2 equivalent)	Estimated baseline emissions (tonnes of CO_2 equivalent)	Estimated emission reduction (tonnes of CO_2 equivalent)
2003	444221	0	459107	14886
2004	438064	0	458063	19999
2005	432082	0	457019	24937
2006	429581	0	457019	27438
2007	424592	0	457019	32427
Subtotal 2003 - 2007	2168539	0	2288226	119687
2008	418489	0	457019	38530
2009	413958	0	457019	43061
2010	412000	0	457019	45019
2011	395124	0	457019	61895
2012	382792	0	457019	74227
Subtotal 2008 - 2012	2022363	0	2285095	262732
2013	382792	0	457019	74227
2014	382792	0	457019	74227
2015	382792	0	457019	74227
2016	382792	0	457019	74227
2017	382792	0	457019	74227
2018	382792	0	457019	74227
2019	382792	0	457019	74227
2020	382792	0	457019	74227
2021	382792	0	457019	74227
2022	382792	0	457019	74227
2023	382792	0	457019	74227
2024	382792	0	457019	74227
2025	382792	0	457019	74227
2026	382792	0	457019	74227
2027	382792	0	457019	74227
2028	382792	0	457019	74227
2029	382792	0	457019	74227
2030	382792	0	457019	74227
Subtotal 2013 - 2030	6890254	0	8226340	1336086
Total (tonnes of CO_2 equivalent)	11081156	0	12799661	1718505

The estimates referred to above are given:

(a) On a periodic basis;

(b) From 01/01/2003 to 31/12/2030, covering the whole crediting period;

(c) On a source-by-source basis;

(d) For each GHG gas, which is CO_2;

(e) In tonnes of CO_2 equivalent, using global warming potentials defined by decision 2/CP.3 or as subsequently revised in accordance with Article 5 of the Kyoto Protocol;

GHG emission reductions from the project are estimated by means of the following formulae:
$ERUs = E_b - E_r$
where:
ERUs – emission reduction units, tCO_2eq
E_r – project emissions, tCO_2eq
E_b – baseline emissions, tCO_2eq

The formulas used for calculating the estimates referred above are the same as those used for project monitoring and consistent throughout the PDD. Data sources used for calculating the estimates referred to above are clearly identified, reliable and transparent.
Emission factors, such as grid emission factor for electricity consumption, carbon emission factor for fuels, were selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice.
The estimation referred to above is based on conservative assumptions and the most plausible scenarios in a transparent manner.
The estimates referred to above are consistent throughout the PDD.

3.10 Environmental impacts (48)

The PDD lists and attaches documentation on the analysis of the environmental impacts of the project, including transboundary impacts, in accordance with procedures as determined by the host Party.
According to the Ukrainian rules, the design documentation for the new building, reconstruction and technical re-equipment of industrial and civil objects must include the environmental impact assessment, the main requirements for which are listed in the State Building Norms of Ukraine A.2.2-1-2003.
Overall, the project "Rehabilitation of District Heating Systems in Dnipropetrovsk Region" will have a positive effect on environment. Following points will give detailed information on environmental benefits.

1. Project implementation will allow saving about 36.5 million Nm^3 of natural gas, 708 t of coal and 2600 MWh per year after project complete implementation. Natural gas and coal are non-renewable resources and their saving is important.
2. Project implementation is expected to reduce direct CO_2 emissions from city and regional boilers about 74.2 thousand tonnes per year after project complete implementation due to increased boilers efficiencies, achieved through installation of up-to-date boiler equipment, particularly new boilers, heat utilizers and new boiler burners, and installation of pre-insulated network pipes instead of existing regular network pipes.
3. Due to fuel saving and the new environmentally friendlier technologies of fuel combustion, project implementation will reduce emissions of SOx, NO_x, CO and particulate matter (co-products of combustion).
4. It is expected that due to a better DH service Dnipropetrovsk region population will reduce electricity consumption from electric heaters thus reducing power plants emissions of CO_2, SO_x, NO_x, CO and particulate matter.
The transboundary effects are not considered (no effect can be deduced). Emissions are mainly localised not far from the source sites. The transboundary effects may appear only in the case of maximum permissible emissions of contaminant to atmosphere exceeding. There were no maximum permissible emissions exceeding fixed at the district heating enterprises that implement the project.

3.11 Stakeholder consultation (49)

No stakeholders' comments were received.

4 SUMMARY AND REPORT OF HOW DUE ACCOUNT WAS TAKEN OF COMMENTS RECEIVED PURSUANT TO PARAGRAPH 32 OF THE JI GUIDELINES

No comments, pursuant to paragraph 32 of the JI Guidelines, were received.

5 DETERMINATION OPINION

Bureau Veritas Certification has performed a determination of the "Rehabilitation of District Heating Systems in Dnipropetrovsk Region" project of OJSC "Oblteplocomunenergo" located in Dnipropetrovsk Region, Ukraine. The determination 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 determination consisted of the following three phases: i) a desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) the resolution of

outstanding issues and the issuance of the final determination report and opinion.

Project participants used the latest tool for demonstration of the additionality. In line with this tool, the PDD provides analysis of investment, technological and other barriers to determine that the project activity itself is not the baseline scenario.

By the rehabilitation of boilers and heat distribution networks the project is likely to result in reductions of GHG emissions partially. An analysis of the investment and technological barriers demonstrates that the proposed project activity is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. Given that the project is implemented and maintained as designed, the project is likely to achieve the estimated amount of emission reductions.

The review of the project design documentation "Rehabilitation of District Heating Systems in Dnipropetrovsk Region" versions 03 and the interviews have provided Bureau Veritas Certification with sufficient evidence to determine the fulfillment of stated criteria. In our opinion, the project correctly applies and meets the relevant UNFCCC requirements for the JI and the relevant host country criteria.
The determination is based on the information made available to us and the engagement conditions detailed in this report.

6 REFERENCES

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

/1/ PDD "Rehabilitation of District Heating Systems in Dnipropetrovsk Region" version 01 dated 15/11/2010
/2/ PDD "Rehabilitation of District Heating Systems in Dnipropetrovsk Region" version 02 dated 06/12/2010
/3/ PDD "Rehabilitation of District Heating Systems in Dnipropetrovsk Region" version 03 dated 15/12/2010
/4/ Excel file "Rehabilitation of District Heating Systems in Dnipropetrovsk Region CO_2"
/5/ Guidelines for Users of the Joint Implementation Project Design Document Form/Version 04, JISC.
/6/ JISC Guidance on criteria for baseline setting and monitoring. Version 02.
/7/ Tool for the demonstration and assessment of additionality, Version 05.2.

Category 2 Documents:

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

/1/	Power of attorney, Dnipropetrovsk, 2010, Regional Municipal Enterprise "Dniproteploenergo" gives the right to OJSC "Oblteplokomunenergo" to provide all necessary actions.
/2/	Decision #1 contracting parties on joint activity # 353/1 from 18.08.2010 about about opening a bank account and identifying the persons who is entitled to sign the preliminary and operations on the account, Dnipropetrovsk
/3/	Material of 16th conference of UN with international participation (July, 06-10 2006, Sevastopol), Kyiv, 2006
/4/	State Department of Intellectual Property, Declaration Patent # 33892 A
/5/	Small size hot-water boiler, КВ-ГМ-58-115СН МВ К-5, Manufactured in Ukraine, Zaporizhzhya
/6/	Contact # 476, Kyiv, 20.06.2002, Institute of industrial ecology and ''Dniproteploenergo''
/7/	Protocol of the agreement about agreed price on scientific-technical materials for request formation on the project CO_2 emission reduction due to fuel economy in system ''Dniproteploenergo'' according to contract # 476 from 20.06.2002
/8/	Planned schedule of operation according to contract # 476 from 20.06.2002. Preparation of initial materials for request formation on the project CO_2 emission reduction due to fuel economy in system ''Dniproteploenergo''
/9/	Protocol of divergences to contract # 476 from 20.06.2002 from Preparation of initial materials for request formation on the project CO2 emission reduction due to fuel economy in system ''Dniproteploenergo''
/10/	Additional agreement to contract # 476 from 20.06.2002 from Preparation of initial materials for request formation on the project CO_2 emission reduction due to fuel economy in system ''Dniproteploenergo''
/11/	Corrected planned schedule of operation to Additional agreement # 6 to contract # 476 from 20.06.2002
/12/	Statement of Admission Committee on acceptance of the construction completion, Dnipropetrovsk, 04.02.2003
/13/	Statement of Admission Committee on acceptance of the construction completion, Dnipropetrovsk, 18.06.2003
/14/	Statement of Admission Committee on acceptance of the construction completion, Dnipropetrovsk, 18.09.2003
/15/	Statement of Admission Committee on acceptance of the construction completion, Dnipropetrovsk, 22.09.2003
/16/	Statement of Admission Committee on acceptance of the construction completion, Dnipropetrovsk, 15.09.2003
/17/	Statement of Admission Committee on acceptance of the construction completion, Dnipropetrovsk, 10.09.2003

/18/ Statement of Admission Committee on acceptance of the construction completion, Dnipropetrovsk, 12.09.2003
/19/ Statement of Admission Committee on acceptance of the construction completion, Dnipropetrovsk, 09.09.2003
/20/ Statement of Admission Committee on acceptance of the construction completion, Dnipropetrovsk, 05.09.2003
/21/ Statement of Admission Committee on acceptance of the construction completion, Dnipropetrovsk, 03.09.2003
/22/ Statement of Admission Committee on acceptance of the construction completion, Dnipropetrovsk, 02.09.2004
/23/ Statement of Admission Committee on acceptance of the construction completion, Dnipropetrovsk, 31.08.2005
/24/ Statement of Admission Committee on acceptance of the construction completion, Dnipropetrovsk, 02.10.2006
/25/ Statement of Admission Committee on acceptance of the construction completion, Dnipropetrovsk, 24.10.2006
/26/ Statement of Admission Committee on acceptance of the construction completion, Dnipropetrovsk, 27.10.2006
/27/ Statement of Admission Committee on acceptance of the construction completion, Dnipropetrovsk, 24.11.2007
/28/ Statement of Admission Committee on acceptance of the construction completion, Dnipropetrovsk, 22.11.2007
/29/ Statement of Admission Committee on acceptance of the construction completion, Dnipropetrovsk, 26.11.2007
/30/ Statement of Admission Committee on acceptance of the construction completion, Dnipropetrovsk, 25.11.2008
/31/ Statement of Admission Committee on acceptance of the construction completion, Dnipropetrovsk, 27.11.2008
/32/ Statement of Admission Committee on acceptance of the construction completion, Dnipropetrovsk, 25.11.2008
/33/ Statement of Admission Committee on acceptance of the construction completion, Dnipropetrovsk, 06.10.2009
/34/ Statement of Admission Committee on acceptance of the construction completion, Dnipropetrovsk, 07.10.2009
/35/ Statement of Admission Committee on acceptance of the construction completion, Dnipropetrovsk, 09.10.2009
/36/ Environmental Impact Assessment "Ekopron Yug", 2003
/37/ Note about monthly average air temperature in Dnepropetrovsk and water temperature in Dnipro river during 2001, # 01.06/09 from 31.01.2002, ''Dniproteploenergo''
/38/ Note about monthly average air temperature in Dnepropetrovsk and water temperature in Dnipro river during 2002, # 01.07/59 from 31.01.2003, ''Dniproteploenergo''
/39/ Note about monthly average air temperature in Dnepropetrovsk and water temperature in Dnipro river during 2003, # 02.27/62 from 01.02.2004, ''Dniproteploenergo''
/40/ Consumed gas volume by ''Dniproteploenergo'' during 2002
/41/ Heat load for boiler houses "Dniproteploenergo" during 2002

/42/ Actual values for boiler houses "Dniproteploenergo" during 2002
/43/ Information about length of boiler houses operation on heating and hot water supply during 2002
/44/ Note about converting of bad heat supply
/45/ Energy expense on "Dniproteploenergo" in 2002

Persons interviewed:

List persons interviewed during the determination or persons that contributed with other information that are not included in the documents listed above.

Donetskmiskteplomerezha

/1/ Derevianko V.I. - general director of RME "Dniproteploenergo"
/2/ Mazurkevich T.P. – chief power engineer
/3/ Derevyanko N.I. – plant-operating engineer
/4/ Derkach L.V. – engineer of production and technical department
/5/ Novgorodova V.I. – engineer of production and technical department
/6/ Severin R.P. - engineer of production and technical department
/7/ Zajchuk S.V. - deputy head of thermal energy accounting and sales department

Institute of Engineering Ecology

/8/ Korniychuk K. – JI consultant

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BUREAU VERITAS CERTIFICATION

DETERMINATION PROTOCOL
Check list for determination, according to
JOINT IMPLEMENTATION DETERMINATION AND VERIFICATION MANUAL (Version 02)

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
Guidelines for JI PDD Form Users Section A General description of the project					
A.1. Title of the project					
A.1	Is the title of the project presented? Is the sectoral scope to which project pertains presented? Is the current version number of the document presented? Is the date when the document was completed presented?	The title is stated in the section A.1. of the PDD: "Rehabilitation of District Heating Systems in Dnipropetrovsk Region" Sectoral scopes: 1.Energy industries (renewable / non-renewable sources); 2. Energy distribution; 3. Energy demand. Version number and the date of completion is also	N/A	N/A	OK

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
		presented the in the section A.1. of the PDD.			
A.2 Description of the project					
A.2	Is the purpose of the project included with a concise, summarizing explanation (max. 1-2 pages) of the: a) Situation existing prior to the starting date of the project; b) Baseline scenario; and c) Project scenario (expected outcome, including a technical description). Is the history of the project (incl. its JI component) briefly summarized?	No, the information regarding baseline scenario and situation existing prior to the starting date of the project is missing. **CAR01** Please include the description of baseline scenario and the situation existing prior to the starting date of the project in the section A.2. of the PDD as per *Guidelines for users of the JI PDD form, ver.04.*	This is provided in the PDD version 03.	The issue is closed based due corrections made to in the PDD.	OK
A.3 Project participants					

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
A.3	Are project participants and Party(ies) involved in the project listed? Is contact information provided in Annex 1 of the PDD?	Yes, the project participants, Party(ies) involved and contact information is provided.	N/A	N/A	OK
A.4 Technical description of the project					
A.4.1	Location of the project	See section A.4. of the PDD	N/A	N/A	OK
A.4.1.1	Host Party(ies)	The project is located in Ukraine.	N/A	N/A	OK
A.4.1.2	Region/State/Province etc.	The Project is situated in Dnipropetrovsk Region.	N/A	N/A	OK
A.4.1.3	City/Town/Community etc.	The information is included in the section A.4.1.3 of the PDD. **CAR02** Please provide the interpretation for the contraction "t." and "v." in the section A of the PDD.	This is provided in the PDD version 03.	The issue is closed based due corrections made to in the PDD.	OK
A.4.1.4	Detail of the physical location, including information allowing	The district heating systems from almost all the territorial districts of the	N/A	N/A	OK

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
	the unique identification of the project. (This section should not exceed one page)	Dnipropetrovsk region are involved in the project. Places involved in the project are marked in the map (section A.4.1.4. of the PDD).			
A.4.2. Technologies to be employed, or measures, operations or actions to be implemented by the project					
A.4.2	Are the technology(ies) to be employed, or measures, operations or actions to be implemented by the project, including all relevant technical data and the implementation schedule described?	The technologies to be employed and actions to be implemented by the project are sufficiently described in the PDD. **CAR03** It is stated in the PDD (p.9) that the efficiency of distribution networks system will be considerably increased by "improving of pipes". Please clarify **in the PDD** what is meant under the measure mentioned. **CAR04** The information concerning	This is clarified in the PDD version 03	PDD was checked. The issue is closed based due corrections made to in the PDD.	OK

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
		an implementation schedule for the measures to be implemented is missing in the section A.4.2. Please add the appropriate information as per *Guidelines for users of the JI PDD form, ver.04.*			
A.4.3. Brief explanation of how the anthropogenic emissions of greenhouse gases by sources are to be reduced by the proposed JI project, including why the emission reductions would not occur in the absence of the proposed project, taking into account national and/or sectoral policies and circumstances					
A.4.3	Is it explained briefly how anthropogenic GHG emission reductions are to be achieved? (This section should not exceed one page.)	The project activities will increase energy efficiency of Dnipropetrovsk Region system, thus enabling it to produce the same amount of heat energy with less fuel consumed. This will lead to emission reduction.	N/A	N/A	OK
A.4.3.1. Estimated amount of emission reductions over the crediting period					
A.4.3.1	Is the length of the crediting period Indicated?	**CAR05** Please provide formatting of the Table A.4.3.1 of the	This is provided in the PDD version 03.	The issue is closed based due	OK

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
	Are estimates of total as well as annual and average annual emission reductions in tonnes of CO2 equivalent provided?	PDD in line with *Guidelines for users of the JI PDD form, ver.04.* Please provide the estimates of emission reductions separately for the period until and after 2012.		corrections made to in the PDD.	
A.5. Project approval by the Parties involved					
A.5	Is written project approvals by the Parties involved attached?	**CAR06** The project has no approval of the host Party and the sponsor Party. Please provide Letters of Approval.	After finishing project determination report, the PDD and Determination Report will be presented to National Environmental Investments Agency of Ukraine for receiving the Letter of Approval. The Letter of Approval from the country - investor will be	The conclusion on this CAR is pending the written project approvals by the Parties involved.	Pending

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
			provided after approval of project by Ukraine.		
DVM					
Project approvals by Parties					
19	Have the DFPs of all Parties listed as "Parties involved" in the PDD provided written project approvals?	See CAR from the section A.5. above.	-	Pending	Pending
19	Does the PDD identify at least the host Party as a "Party involved"?	Ukraine is identified as the Host Party.	N/A	N/A	OK
19	Has the DFP of the host Party issued a written project approval?	See CAR from the section A.5. above.	Ukrainian project participant is preliminary authorized by Ukrainian DFP through Letter of Endorsement for this JI project	Pending	Pending

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
			(#1901/23/7 dated 16.11.2010)		
20	Are all the written project approvals by Parties involved unconditional?	Conclusion is pending a response to CAR06 above.	-	Pending	Pending
Authorization of project participants by Parties involved					
21	Is each of the legal entities listed as project participants in the PDD authorized by a Party involved, which is also listed in the PDD, through: − A written project approval by a Party involved, explicitly indicating the name of the legal entity? or − Any other form of project participant authorization in writing, explicitly indicating the	Conclusion is pending a response to CAR from the section A.5.	-	Pending	Pending

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
	name of the legal entity?				
Baseline setting					
22	Does the PDD explicitly indicate which of the following approaches is used for identifying the baseline? − JI specific approach − Approved CDM methodology approach	PDD explicitly indicates that the JI specific approach is used for identifying a baseline. **CAR07** Please indicate if the entities indicated in the section B.4. of the PDD are the project participants listed in Annex I.	This is indicated in the PDD version 03.	PDD was checked. The issue is closed based due corrections made to in the PDD.	OK
JI specific approach only					
23	Does the PDD provide a detailed theoretical description in a complete and transparent manner?	The sufficient description is provided in a complete and transparent manner in the section B.1. of the PDD. **CAR08** Annex 2 shall contain a **summary of the key elements** in tabular form. Please provide.	This is provided in the PDD version 03.		

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
23	Does the PDD provide justification that the baseline is established: (a) By listing and describing plausible future scenarios on the basis of conservative assumptions and selecting the most plausible one? (b) Taking into account relevant national and/or sectoral policies and circumstance? − Are key factors that affect a baseline taken into account? (c) In a transparent manner with regard to the choice of approaches, assumptions, methodologies,	**CAR09** Please add all key parameters to the section B.1. in tabular form in line with *Guidelines for users of the JI PDD form, ver.04.* **CAR10** The CO_2 emission factors for the fuels were taken form *IPCC 2006 Guidelines for National Greenhouse Gas Inventories Volume 2 Energy*. The source mentioned is irrelevant. Please use the data form the *IPCC 1996 Guidelines for National Greenhouse Gas Inventories* and take it into consideration for ERU calculations. **CAR11** Please make consistent the values of physical quantities	This is provided in the PDD version 03. Response to CAR12 For boiler houses that were taken to balance of district heating enterprises after starting of the project and if data for 2002 are unavailable, the Base year for these boiler houses is established as the year previous to the first year in which an enterprise started to operate a boiler house. This is clarified in the PDD version 03.	PDD was checked. The issue is closed based due corrections made to in the PDD.	OK

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
	parameters, date sources and key factors? (d) Taking into account of uncertainties and using conservative assumptions? (e) In such a way that ERUs cannot be earned for decreases in activity levels outside the project or due to force majeure? (f) By drawing on the list of standard variables contained in appendix B to "Guidance on criteria for baseline setting and monitoring", as appropriate?	in the conversion factors of CO_2 calculations (17 p.). **CAR12** The data concerning baseline annual consumption of natural gas and baseline power consumption by boiler houses and heating points of RME "Dniproteploenergo" (PDD p.18 and Excel file Appendix_1_3_4_Dnepr_v02) do not correspond to the data provided by the enterprise onsite. Please correct/clarify.			
24	If selected elements or combinations of	The own developed approach is used to	N/A	N/A	OK

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
	approved CDM methodologies or methodological tools for baseline setting are used, are the selected elements or combinations together with the elements supplementary developed by the project participants in line with 23 above?	establish a baseline.			
25	If a multi-project emission factor is used, does the PDD provide appropriate justification?	N/A	N/A	N/A	OK
Approved CDM methodology approach only					
26 (a)	Does the PDD provide the title, reference number and version of the approved CDM methodology used?	N/A	N/A	N/A	OK

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
26 (a)	Is the approved CDM methodology the most recent valid version when the PDD is submitted for publication? If not, is the methodology still within the grace period (was the methodology revised to a newer version in the past two months)?	N/A	N/A	N/A	OK
26 (b)	Does the PDD provide a description of why the approved CDM methodology is applicable to the project?	N/A	N/A	N/A	OK
26 (c)	Are all explanations, descriptions and analyses pertaining to the baseline in the PDD made in	N/A	N/A	N/A	OK

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
	accordance with the referenced approved CDM methodology?				
26 (d)	Is the baseline identified appropriately as a result?	N/A	N/A	N/A	OK
Additionality					
JI specific approach only					
28	Does the PDD indicate which of the following approaches for demonstrating additionality is used? (a) Provision of traceable and transparent information showing the baseline was identified on the basis of conservative assumptions, that the project scenario is not part of the identified baseline scenario and	It is demonstrated that the project scenario is not part of the identified baseline scenario and that the project will lead to emission reductions. The developer used "Tool for demonstration and assessment of additionality" ver 05.2. A barriers analysis and a common practice analysis were used to demonstrate additionality of the project.	Investment analysis, barriers analysis and common practice analysis were used to demonstrate additionality of the project activity. The developer has grounded and conducted the simple cost investment analysis.	The developer re-introduced step-2 Investment analysis. In this step the developer is using simple cost analysis which is consistent with nature of the project and existing	OK

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
	that the project will lead to emission reductions or enhancements of removals; (b) Provision of traceable and transparent information that an AIE has already positively determined that a comparable project (to be) implemented under comparable circumstances has additionality; (c) Application of the most recent version of the "Tool for the demonstration and assessment of additionality. (allowing for a two-month grace	The developer does not conduct investment analysis thereby bypassing step 2 as allowed by the Tool. Among the barriers identified at the Step3 the Developer is referring to the investment barrier as one of the key factors preventing the project from implementation in absence of JI activity providing extensive justification for this statement. When proving the additionality of the project the developer is using latest version of the Tool for the demonstration and assessment of additionality version 05.2 (hereinafter referred as the Tool) but there is minor deviation from	Electricity and natural gas tariff data are taken as average for region from history information of project partners. The reference is provided in the PDD v.03. Appendix 5 is removed in the PDD v.03. Only the simple cost investment analysis is provided in the PDD v.03. Appendix_5_BP_Dnepr_v02.xls file is removed.	legislation regulations in force mentioned on the page 26 of the PDD. The additionality is now well established from the point of financial analysis.	

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
	period) or any other method for proving additionality approved by the CDM Executive Board".	the form prescribed by the document: **CAR13** The developer omitted sub-step 4b where the relevant statement regarding similar JI projects shall be moved from sub-step 4a. **CAR14** Please pay attention that the common practice of the investment analysis requires the fair value of the assets at the end of the end of assessment period to be included to the cash flow for the final year of the financial model. It can be calculated as the residual value of the project assets. For the present project the operational lifespan of the assets is indicated to be 28			

Guidelines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
		years (page 31 of the PDD), consequently for example after 14 years of operation the value of the assets may be determined as 50% of their initial value. Please note that "tax" depreciation method will not be proper measure for estimate of the residual value as it is not based on the service period of particular equipment. **CAR15** Please provide the reference for the source of electricity and natural gas tariff data. **CAR16** Appendix 5 indicates on sheet "Economic input" that operational expenses are linked only to JI project. At the same time they are			

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
		included in the calculations of the cash flow for "without ERU" scenario. Please clarify/correct. **CAR17** IRR calculations in the present financial model currently account for the period of 2003-2013. Taking into account the fact that major components of the project assets are commissioned as late as 2011 and 2012 it means that the model account for only 1-2 years of operation of the major part of the equipment. This period is obviously to short for the proper financial analysis. Please extend the evaluation period until 2023 which is quite easily attainable as the necessary			

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
		inputs are already present in Appendix_5_BP_Dnepr_v02. xls file. **CAR18** Financial model currently does not account for inflation during the future periods, which is not acceptable for development of the long term financial model. For example for proper adjustment of the future cash flows we may use expected inflation rate derived from 10 years average inflation index for EuroZone (we apply EuroZone inflation because financial calculations are made in Euros). For the period of 2000-2009 it is 2,1%. Source is Eurostat http://epp.eurostat.ec.europ			

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
		a.eu/tgm/table.do?tab=table&language=en&pcode=tsieb060&tableSelection=1&footnotes=yes&labeling=labels&plugin=1. **CAR19** Please note that the current model does not account for payment of the VAT generated from the operational activities. While it is understandable for the period of 2003-2012 due to the excessive VAT receivables from investment purchases, starting from 2013 the VAT tax obligations will exceed the receivables accumulated before, so the company will have to start VAT payments. Thereby operational cash flow shall be calculated with			

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
		VAT excluded starting from 2013. Another option is to calculate all cash flows without VAT in order to simplify the model. **CAR20** The profit tax is overestimated as the pre-tax profit shall be calculated basing on the revenues VAT excluded while currently the revenues are calculated with VAT included.			
29 (a)	Does the PDD provide a justification of the applicability of the approach with a clear and transparent description?	The necessary justification is included in the section B.2. of the PDD.	N/A	N/A	OK
29 (b)	Are additionality proofs provided?	Yes. See section B.2. of the PDD.	N/A	N/A	OK
29 (c)	Is the additionality demonstrated	Yes.	N/A	N/A	OK

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
	appropriately as a result?				
30	If the approach 28 (c) is chosen, are all explanations, descriptions and analyses made in accordance with the selected tool or method?	Yes, all explanations, descriptions and analyses made in accordance with the Tool for demonstration and assessment of additionality ver 05.2.	N/A	N/A	OK
Approved CDM methodology approach only					
31 (a)	Does the PDD provide the title, reference number and version of the approved CDM methodology used?	N/A	N/A	N/A	OK
31 (b)	Does the PDD provide a description of why and how the referenced approved CDM methodology is applicable to the project?	N/A	N/A	N/A	OK

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
31 (c)	Are all explanations, descriptions and analyses with regard to additionality made in accordance with the selected methodology?	N/A	N/A	N/A	OK
31 (d)	Are additionality proofs provided?	N/A	N/A	N/A	OK
31 (e)	Is the additionality demonstrated appropriately as a result?	N/A	N/A	N/A	OK
Project boundary (applicable except for JI LULUCF projects JI specific approach only					
32 (a)	Does the project boundary defined in the PDD encompass all anthropogenic emissions by sources of GHGs that are: (i) Under the control of the project participants?	**CAR21** The Fig. 9 of the PDD is named "Project boundaries for Baseline scenario". Please clarify how the project boundaries can be applied to Baseline scenario.	This is provided in the PDD version 03.	PDD was checked. The issue is closed based due corrections made to in the PDD.	OK

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
	(ii) Reasonably attributable to the project? (iii) Significant?				
32 (b)	Is the project boundary defined on the basis of a case-by-case assessment with regard to the criteria referred to in 32 (a) above?	Yes, the project boundary defined on the basis of a case-by-case assessment with regard to the criteria referred to in 32 (a) above.	N/A	N/A	OK
32 (c)	Are the delineation of the project boundary and the gases and sources included appropriately described and justified in the PDD by using a figure or flow chart as appropriate?	**CAR22** Please indicate what is marked with the black arrow in the flow (Figure 10 of the PDD).	This is indicated in the PDD version 03.	PDD was checked. The issue is closed based due corrections made to in the PDD.	OK
32 (d)	Are all gases and sources included explicitly stated, and	Yes. All emissions sources are clearly justified. Only CO_2 emissions were taken	N/A	N/A	OK

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
	the exclusions of any sources related to the baseline or the project are appropriately justified?	into account.			
Approved CDM methodology approach only					
33	Is the project boundary defined in accordance with the approved CDM methodology?	N/A	N/A	N/A	OK
Crediting period					
34 (a)	Does the PDD state the starting date of the project as the date on which the implementation or construction or real action of the project will begin or began?	The starting date of the project is accepted as the agreement #476 between RME "Dniproteploenergo" and the Institute of Engineering Ecology on preparation of project documentation was signed.	N/A	N/A	OK
34 (a)	Is the starting date after the beginning of 2000?	Yes.	N/A	N/A	OK
34 (b)	Does the PDD state the	**CAR23**	This is provided in	PDD was	OK

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
	expected operational lifetime of the project in years and months?	Please provide the expected operational lifetime of the project in years and months.	the PDD version 03.	checked. The issue is closed based due corrections made to in the PDD.	
34 (c)	Does the PDD state the length of the crediting period in years and months?	Yes. See section C.3. of the PDD.	N/A	N/A	OK
34 (c)	Is the starting date of the crediting period on or after the date of the first emission reductions or enhancements of net removals generated by the project?	Yes, the starting date of the crediting period is after the date of the first emission reductions generation.	N/A	N/A	OK
34 (d)	Does the PDD state that the crediting period for issuance of ERUs starts only after	Yes, ERUs generation starts on the 1st of January of 2008 and does not extend beyond the operational	N/A	N/A	OK

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
	the beginning of 2008 and does not extend beyond the operational lifetime of the project?	lifetime of the project.			
34 (d)	If the crediting period extends beyond 2012, does the PDD state that the extension is subject to the host Party approval? Are the estimates of emission reductions or enhancements of net removals presented separately for those until 2012 and those after 2012?	See CAR from the section A.4.3.1 above.	-	Pending	OK
Monitoring plan					
35	Does the PDD explicitly indicate which of the following approaches is used? −JI specific approach	The own developed JI specific approach was used to establish the monitoring plan. **CAR24**	Corresponding corrections were made in the PDD version 03.	PDD was checked. The issue is closed based due	OK

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
	−Approved CDM methodology approach	All equations in the section D should be numbered as per *Guidance on criteria for baseline setting and monitoring (version 02).* Please make corresponding corrections.		corrections made to in the PDD.	
JI specific approach only					
36 (a)	Does the monitoring plan describe: − All relevant factors and key characteristics that will be monitored? − The period in which they will be monitored? − All decisive factors for the control and reporting of project performance?	**CAR25** Please provide the interpretation for each of the symbol in the section D **when first mentioned** in the text: - Ei^b, Ei^r - p.32 - a – p.35 - $Q_{h\ r}$ – p.35… **CAR26** Two different formulas are indicated on the p.33 and p.34 of the PDD for calculation of $E_1{}^b$ parameter. Please correct/clarify.	Corresponding corrections were made for symbols Ei^b, Ei^r, $Q_{h\ r}$ and others in the PDD version 03. The interpretation for the symbol a was provided below equation D.1.1-13. Section D.1.1 describes the monitoring specific project approach	PDD was checked. The issue is closed based due corrections made to in the PDD.	OK

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
		CAR27 Please indicate in the Tables D.1.1.1. and D.1.1.3 if the coal consumption will be measured, calculated or estimated. **CAR28** The information concerning sources of data indicated in the section D.1.1.3. does not correspond to the situation observed onsite. Please make corresponding adjustments.	developed for "District Heating" projects in Ukrainian conditions. Equation D.1.1-4 is the general type equation though the Equations D.1.1-11 and D.1.1-12 are used for different cases according to the Dynamic Baseline assumption as it is indicated in PDD above. Corresponding adjustments were made in the PDD version 03.		
36 (b)	Does the monitoring	See CARs from the item	-	Pending	OK

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
	plan specify the indicators, constants and variables used that are reliable, valid and provide transparent picture of the emission reductions or enhancements of net removals to be monitored?	36(a) above.			
36 (b)	If default values are used: − Are accuracy and reasonableness carefully balanced in their selection? − Do the default values originate from recognized sources? − Are the default values supported by statistical analyses providing reasonable	**CAR29** Please add to the Table D.1.1.1. of the PDD all data necessary to establish the project emissions, including Cef carbon emission factor and CEF_c Carbon Emission factor for reducing electricity consumption in Ukraine. **CAR30** The Emission Factors for the Ukrainian grid used is	This was added in the PDD version 03.	PDD was checked. The issue is closed based due corrections made to in the PDD.	OK

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
	confidence levels? − Are the default values presented in a transparent manner?	valid only till 2012. Please explicitly distinguish in the PDD which value of Carbon Emission factor will be used for ERU calculations after 2012 till the end of crediting period.			
36 (b) (i)	For those values that are to be provided by the project participants, does the monitoring plan clearly indicate how the values are to be selected and justified?	Yes. The appropriate information can be found in the section D of the PDD.	N/A	N/A	OK
36 (b) (ii)	For other values, − Does the monitoring plan clearly indicate the precise references from which these values are taken? − Is the conservativeness of	Yes, all necessary references are presented in the section D of the PDD.	N/A	N/A	OK

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
	the values provided justified?				
36 (b) (iii)	For all data sources, does the monitoring plan specify the procedures to be followed if expected data are unavailable?	**CAR31** Please specify in the monitoring plan the procedures to be followed if expected monitored data are unavailable.	This was specified in the PDD version 03.	PDD was checked. The issue is closed based due corrections made to in the PDD.	OK
36 (b) (iv)	Are International System Unit (SI units) used?	No.	N/A	N/A	OK
36 (b) (v)	Does the monitoring plan note any parameters, coefficients, variables, etc. that are used to calculate baseline emissions or net removals but are obtained through monitoring?	Yes. See sections D.1.1.1-D.1.1.4.	N/A	N/A	OK

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
36 (b) (v)	Is the use of parameters, coefficients, variables, etc. consistent between the baseline and monitoring plan?	The use of parameters, coefficients, variables, etc. is consistent between the baseline and monitoring plan.	N/A	N/A	OK
36 (c)	Does the monitoring plan draw on the list of standard variables contained in appendix B of "Guidance on criteria for baseline setting and monitoring"?	Some variables contained in appendix B of "Guidance on criteria for baseline setting and monitoring" were included in the monitoring plan.	N/A	N/A	OK
36 (d)	Does the monitoring plan explicitly and clearly distinguish: (i) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus	**CAR32** No. Explicitly and clearly distinguish in the section D of the PDD which of the parameters to be monitored: (i) are not monitored throughout the crediting period, but are determined only once (and thus remain	This was specified in the PDD version 03.	PDD was checked. The issue is closed based due corrections made to in the PDD.	OK

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
	remain fixed throughout the crediting period), and that are available already at the stage of determination? (ii) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), but that are not already available at the stage of determination? (iii) Data and parameters that are monitored throughout the crediting period?	fixed throughout the crediting period), and that are available already at the stage of determination? (ii) are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), but that are not already available at the stage of determination? (iii) are monitored throughout the crediting period.			
36 (e)	Does the monitoring	Yes.	N/A	N/A	OK

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
	plan describe the methods employed for data monitoring (including its frequency) and recording?				
36 (f)	Does the monitoring plan elaborate all algorithms and formulae used for the estimation/calculation of baseline emissions/removals and project emissions/ removals or direct monitoring of emission reductions from the project, leakage, as appropriate?	Yes, all necessary algorithms and formulae are provided.	N/A	N/A	OK
36 (f) (i)	Is the underlying rationale for the algorithms/formulae explained?	Yes, all necessary algorithms and formulae are clearly described.	N/A	N/A	OK

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
36 (f) (ii)	Are consistent variables, equation formats, subscripts etc. used?	Yes, all variables, equation format, subscripts etc. used are consistent.	N/A	N/A	OK
36 (f) (iii)	Are all equations numbered?	No see CAR from the item 35 above.	N/A	N/A	OK
36 (f) (iv)	Are all variables, with units indicated defined?	Yes.	N/A	N/A	OK
36 (f) (v)	Is the conservativeness of the algorithms/procedures justified?	Used algorithms/procedures are in line with the state norms and used in conservative manner.	N/A	N/A	OK
36 (f) (v)	To the extent possible, are methods to quantitatively account for uncertainty in key parameters included?	Yes.	N/A	N/A	OK
36 (f) (vi)	Is consistency between the elaboration of the baseline scenario and the procedure for	Yes. The consistency between the elaboration of the baseline scenario and the procedure for calculating	N/A	N/A	OK

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
	calculating the emissions or net removals of the baseline ensured?	the emissions or net removals of the baseline is ensured.			
36 (f) (vii)	Are any parts of the algorithms or formulae that are not self-evident explained?	All algorithms and formulas are clearly explained.	N/A	N/A	OK
36 (f) (vii)	Is it justified that the procedure is consistent with standard technical procedures in the relevant sector?	The procedure is consistent with standard technical procedures in the relevant sector and is well justified.	N/A	N/A	OK
36 (f) (vii)	Are references provided as necessary?	All necessary references are provided.	N/A	N/A	OK
36 (f) (vii)	Are implicit and explicit key assumptions explained in a transparent manner?	All implicit and explicit assumptions are explained in a transparent manner.	N/A	N/A	OK
36 (f) (vii)	Is it clearly stated which assumptions and procedures have	**CAR33** Please add all variables to be monitored to the table	This was added in the PDD version 03.	PDD was checked. The issue is	OK

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
	significant uncertainty associated with them, and how such uncertainty is to be addressed?	D.2. and estimate level of uncertainty associated with them.		closed based due corrections made to in the PDD.	
36 (f) (vii)	Is the uncertainty of key parameters described and, where possible, is an uncertainty range at 95% confidence level for key parameters for the calculation of emission reductions or enhancements of net removals provided?	See CAR form the item 36 36 (f) (vii) above.	-	Pending	OK
36 (g)	Does the monitoring plan identify a national or international monitoring standard if such standard has to be and/or is applied to certain aspects of the	The monitoring plan is in line with the relevant national standards.	N/A	N/A	OK

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
	project? Does the monitoring plan provide a reference as to where a detailed description of the standard can be found?				
36 (h)	Does the monitoring plan document statistical techniques, if used for monitoring, and that they are used in a conservative manner?	N/A	N/A	N/A	OK
36 (i)	Does the monitoring plan present the quality assurance and control procedures for the monitoring process, including, as appropriate, information on calibration and on how	Yes.	N/A	N/A	OK

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
	records on data and/or method validity and accuracy are kept and made available upon request?				
36 (j)	Does the monitoring plan clearly identify the responsibilities and the authority regarding the monitoring activities?	**CAR34** Please state in the PDD (section D.3.) scheme identifying the responsibilities and the authority regarding the monitoring activities for each parameter to be monitored.	This is provided in the PDD version 03.	PDD was checked. The issue is closed based due corrections made to in the PDD.	OK
36 (k)	Does the monitoring plan, on the whole, reflect good monitoring practices appropriate to the project type? If it is a JI LULUCF project, is the good practice guidance developed by IPCC	The monitoring plan reflects good monitoring practices appropriate to the project type.	N/A	N/A	OK

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
	applied?				
36 (l)	Does the monitoring plan provide, in tabular form, a complete compilation of the data that need to be collected for its application, including data that are measured or sampled and data that are collected from other sources but not including data that are calculated with equations?	Yes.	N/A	N/A	OK
36 (m)	Does the monitoring plan indicate that the data monitored and required for verification are to be kept for two years after the last transfer of ERUs for the project?	**FAR01** Please submit any documented instruction which indicates that the data monitored and required for verification are to be kept for two years after the crediting period as per *JI*	The instruction is indicated in monitoring plan in the PDD version 03 and will be sand as instruction for project partners during preparation	Pending	This issue must be checked during verifica

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
		determination and verification manual.	of monitoring report.		tion.
37	If selected elements or combinations of approved CDM methodologies or methodological tools are used for establishing the monitoring plan, are the selected elements or combination, together with elements supplementary developed by the project participants in line with 36 above?	No any selected elements or combinations of approved CDM methodologies or methodological tools used in the monitoring plan.	N/A	N/A	OK
Approved CDM methodology approach only					
38 (a)	Does the PDD provide the title, reference number and version of the approved CDM methodology used?	N/A	N/A	N/A	OK

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
38 (a)	Is the approved CDM methodology the most recent valid version when the PDD is submitted for publication? If not, is the methodology still within the grace period (was the methodology revised to a newer version in the past two months)?	N/A	N/A	N/A	OK
38 (b)	Does the PDD provide a description of why the approved CDM methodology is applicable to the project?	N/A	N/A	N/A	OK
38 (c)	Are all explanations, descriptions and analyses pertaining to monitoring in the PDD made in accordance	N/A	N/A	N/A	OK

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
	with the referenced approved CDM methodology?				
38 (d)	Is the monitoring plan established appropriately as a result?	N/A	N/A	N/A	OK
Applicable to both JI specific approach and approved CDM methodology approach					
39	If the monitoring plan indicates overlapping monitoring periods during the crediting period: (a) Is the underlying project composed of clearly identifiable components for which emission reductions or enhancements of removals can be calculated independently? (b) Can monitoring be	There are no overlapping monitoring periods during the crediting period.	N/A	N/A	OK

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
	performed independently for each of these components (i.e. the data/parameters monitored for one component are not dependent on/effect data/parameters to be monitored for another component)? (c) Does the monitoring plan ensure that monitoring is performed for all components and that in these cases all the requirements of the JI guidelines and further guidance by the JISC regarding monitoring are met? (d) Does the				

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
	monitoring plan explicitly provide for overlapping monitoring periods of clearly defined project components, justify its need and state how the conditions mentioned in (a)-(c) are met?				
Leakage					
JI specific approach only					
40 (a)	Does the PDD appropriately describe an assessment of the potential leakage of the project and appropriately explain which sources of leakage are to be calculated and which can be neglected?	**CAR35** It is stated in the section E.2. that possible leakage is negligible (less than 1% of the total direct emissions) and indirect emissions are not under control of project developer. However project participants must undertake an assessment of the potential leakage of the proposed JI	This section was reworked. No leakage is expected in proposed project activity	PDD was checked. The issue is closed based due corrections made to in the PDD.	OK

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
		project and explain which sources of leakage are to be calculated, and which can be neglected as per *Guidance on criteria for baseline setting and monitoring* Please add the appropriate assessment to the section B of the PDD.			
40 (b)	Does the PDD provide a procedure for an ex ante estimate of leakage?	No leakage is expected for the proposed project activity.	N/A	N/A	OK
Approved CDM methodology approach only					
41	Are the leakage and the procedure for its estimation defined in accordance with the approved CDM methodology?	N/A	N/A	N/A	OK
Estimation of emission reductions or enhancements of net removals					
42	Does the PDD indicate which of the following	The assessment of emissions in the baseline	N/A	N/A	OK

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
	approaches it chooses? (a) Assessment of emissions or net removals in the baseline scenario and in the project scenario (b) Direct assessment of emission reductions	scenario and in the project scenario was used.			
43	If the approach (a) in 42 is chosen, does the PDD provide ex ante estimates of: (a) Emissions or net removals for the project scenario (within the project boundary)? (b) Leakage, as applicable? (c) Emissions or net removals for the baseline scenario (within the project	The estimation of emissions for the project, baseline scenario and emission reductions ex ante is provided in the section E of the PDD.	N/A	N/A	OK

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
	boundary)? (d) Emission reductions or enhancements of net removals adjusted by leakage?				
44	If the approach (b) in 42 is chosen, does the PDD provide ex ante estimates of: (a) Emission reductions or enhancements of net removals (within the project boundary)? (b) Leakage, as applicable? (c) Emission reductions or enhancements of net removals adjusted by leakage?	N/A	N/A	N/A	OK
45	For both approaches in 42	**CAR36** The estimates of GHG	Corresponding corrections are	PDD was checked. The	OK

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
	(a) Are the estimates in 43 or 44 given: (i) On a periodic basis? (ii) At least from the beginning until the end of the crediting period? (iii) On a source-by-source/sink-by-sink basis? (iv) For each GHG? (v) In tones of CO2 equivalent, using global warming potentials defined by decision 2/CP.3 or as subsequently revised in accordance with Article 5 of the Kyoto Protocol? (b) Are the formula used for calculating the	emissions must be stated from the beginning until the end of the crediting period for each year. **CAR37** The estimates of GHG emissions are provided for two sources: E1r - emissions of CO_2 from heat generation sources operated by systems of heat supply of Dnipropetrovsk region, E2r - emissions of CO_2 due to electricity production to the grid, that consumed by boiler houses and heating points. However Table 10 contains estimated amount of Emission Reductions for three sources. Please correct/clarify.	made in the Excel Annexes 3, Annexes 4 and the PDD version 03.	issue is closed based due corrections made to in the PDD and the supplementing Excel file.	

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
	estimates in 43 or 44 consistent throughout the PDD? (c) For calculating estimates in 43 or 44, are key factors influencing the baseline emissions or removals and the activity level of the project and the emissions or net removals as well as risks associated with the project taken into account, as appropriate? (d) Are data sources used for calculating the estimates in 43 or 44 clearly identified, reliable and transparent?	**CAR38** The estimates of ERUs in the Excel Annexes 3, Annexes 4 and the PDD are not consistent. Please make corresponding corrections.			

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
	(e) Are emission factors (including default emission factors) if used for calculating the estimates in 43 or 44 selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice? (f) Is the estimation in 43 or 44 based on conservative assumptions and the most plausible scenarios in a transparent manner? (g) Are the estimates in 43 or 44 consistent throughout the PDD? (h) Is the annual average of estimated				

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
	emission reductions or enhancements of net removals calculated by dividing the total estimated emission reductions or enhancements of net removals over the crediting period by the total months of the crediting period and multiplying by twelve?				
46	If the calculation of the baseline emissions or net removals is to be performed ex post, does the PDD include an illustrative ex ante emissions or net removals calculation?	Yes, illustrative ex ante emissions calculations are presented in the PDD.	N/A	N/A	OK
Approved CDM methodology approach only					
47 (a)	Is the estimation of emission reductions or	N/A	N/A	N/A	OK

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
	enhancements of net removals made in accordance with the approved CDM methodology?				
47 (b)	Is the estimation of emission reductions or enhancements of net removals presented in the PDD: − On a periodic basis? − At least from the beginning until the end of the crediting period? − On a source-by-source/sink-by-sink basis? − For each GHG? − In tones of CO2 equivalent, using global warming potentials defined by decision 2/CP.3 or as	N/A	N/A	N/A	OK

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
	subsequently revised in accordance with Article 5 of the Kyoto Protocol? − Are the formula used for calculating the estimates consistent throughout the PDD? − Are the estimates consistent throughout the PDD? − Is the annual average of estimated emission reductions or enhancements of net removals calculated by dividing the total estimated emission reductions or enhancements of net removals over the crediting period by the				

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
	total months of the crediting period and multiplying by twelve?				
Environmental impacts					
48 (a)	Does the PDD list and attach documentation on the analysis of the environmental impacts of the project, including transboundary impacts, in accordance with procedures as determined by the host Party?	District heating enterprises that implement the project have the necessary Environmental Impact Assessment for its activity according to Ukrainian legislation. The documentation was submitted to AIE.	N/A	N/A	OK
48 (b)	If the analysis in 48 (a) indicates that the environmental impacts are considered significant by the project participants or the host Party, does the PDD provide	The information on environmental impact is sufficiently described in the section F.2. of the PDD.	N/A	N/A	OK

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
	conclusion and all references to supporting documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party?				
Stakeholder consultation					
49	If stakeholder consultation was undertaken in accordance with the procedure as required by the host Party, does the PDD provide: (a) A list of stakeholders from whom comments on the projects have been received, if any?	**CAR39** The information concerning stakeholder consultation process conducted for EIA of the proposed project is missing in the PDD. Please clarify in the PDD if any comments on the project have been received. Please state the nature of comments and the description on whether and	No comments have been received.	OK	OK

Guide lines for JI PDD Form Users or DVM Paragraph	Check Item	Initial finding	Response from project participants	Review of project Participants' action	Conclusion
	(b) The nature of the comments? (c) A description on whether and how the comments have been addressed?	how the comments have been addressed.			

Appendix B: Verifiers CV's

Work carried out by:
Oleg Skoblyk, Power Management Specialist
Team Leader, Climate Change Lead Verifier
Bureau Veritas Ukraine
Health, Safety and Environment Department project manager
Oleg Skoblyk has graduated from the National Technical University of "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 was involved in the determination/verification of 20 JI projects.

Igor Kachan, Ph.D. (chemistry)
Team Member, Climate Change Verifier
Bureau Veritas Ukraine,
Health, Safety and Environment Department Project Manager
Igor Kachan has graduated from Kyiv National Taras Shevchenko University and defended a PhD thesis in analytical chemistry speciality. He has successfully completed IRCA registered Lead Auditor Training Course for Environment Management Systems and Quality Management Systems. Igor Kachan has undergone a training course on Clean Development Mechanism/Joint Implementation and participated in determination/verification of more then 20 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, Internal Technical Reviewer, Bureau Veritas Certification Holding SAS Operational Manager, Local Climate Change Manager for Ukraine

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.