DETERMINATION REPORT
CEP CARBON EMISSIONS PARTNERS S.A.

DETERMINATION OF THE

Energy efficiency improvement at Novoyavorivska TPP by re-equipment thereof

REPORT NO. UKRAINE-DET/0532/2012

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BUREAU VERITAS CERTIFICATION

DETERMINATION REPORT

Date of first issue: 08/06/2012	Organizational unit: Bureau Veritas Certification Holding SAS
Client: CEP CARBON EMISSIONS PARTNERS S.A.	Client ref.: Fabian Knodel

Summary:
Bureau Veritas Certification has made the determination of the "Energy efficiency improvement at Novoyavorivska TPP by re-equipment thereof" project of CEP CARBON EMISSIONS PARTNERS S.A. located in Novoyavorivsk city of Lviv 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 and Corrective Actions Requests (CL 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.: URKAINE-det/0532/2012	Subject Group: JI
Project title: "Energy efficiency improvement at Novoyavorivska TPP by re-equipment thereof"	
Work carried out by: Oleg Skoblyk – Team Leader, Climate Change Lead Verifier	
Work reviewed by: Ivan Sokolov - Internal Technical Reviewer Vyacheslav Yeriomin – Technical expert	
Work approved by: Ivan Sokolov - Operational Manager	
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1 INTRODUCTION

CEP CARBON EMISSIONS PARTNERS S.A. has commissioned Bureau Veritas Certification to determine its JI project “Energy efficiency improvement at Novoyavorivska TPP by re-equipment thereof” (hereafter called “the project”) in Novoyavorivsk city, Lviv 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 determined 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 Lead Verifier

This determination report was reviewed by:

Ivan Sokolov

Bureau Veritas Certification, Internal Technical Reviewer

Vyacheslav Yeriomin
Bureau Veritas Certification, Technical expert

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 CEP CARBON EMISSIONS PARTNERS S.A. 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, approved CDM methodology and/or Guidance on criteria for baseline setting and monitoring, Kyoto Protocol, Clarifications on Determination Requirements to be Checked by an Accredited Independent Entity were reviewed.

To address Bureau Veritas Certification corrective action and clarification requests, CEP CARBON EMISSIONS PARTNERS S.A. revised the PDD version 01 dated April 25, 2012 and resubmitted it on May 22, 2012 and June 6, 2012 as versions 02 and 03 respectively.

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 07/06/2012 Bureau Veritas Certification performed on-site interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of SPE «Energiya-Novoyavorivsk» LLC and CEP CARBON EMISSIONS PARTNERS S.A. were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
SPE «Energiya-Novoyavorivsk» LLC	➢ Project History ➢ Project approach ➢ Project boundary ➢ Schedule of implementation ➢ Organizational Structure ➢ Responsibilities and obligations ➢ Training ➢ Quality control procedures and technologies ➢ Modernization / installation of equipment (records) ➢ Control over measuring equipment ➢ The system of keeping records of measurements, the database ➢ Technical Documentation ➢ Monitoring Plan and procedures ➢ Permits and licenses ➢ Environmental Impact Assessment ➢ Answers of stakeholders
CEP CARBON EMISSIONS PARTNERS S.A.	➢ Baseline methodology ➢ Monitoring Plan ➢ Additionality proofs ➢ The calculations of emission reductions ➢ Project design ➢ Legal issues relating to the project ➢ Environmental Impacts ➢ Approval of the host party

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 Request (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.

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

The determination team may also issue Forward Action Request (FAR), informing the project participants of an issue that needs to be reviewed during the verification.

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

3 PROJECT DESCRIPTION

The purpose of this project is the reduction of anthropogenic greenhouse gas (GHG) emissions by implementation of combined heat and power production at the existing boiler house in Novoiavorivsk city, Lviv region, Ukraine.
This joint implementation (JI) project provides for the implementation of combined heat and power production at the existing boiler house in Novoiavorivsk city, Lviv region, Ukraine.

The project provides for the commissioning of a new R-4-21/3 No.1 steam turbine with T4-2UZ generator, R-6-35/3M No.2 steam turbine with T6-2UZ generator and gas turbine unit (GTU) with DZh59LZ engine and T202UZ generator. The commissioning of these steam turbines and the GTU would allow of generation of heat as by-product of combined power generation. Thus, the project activity will result in substantial GHG emission reductions due to the substitution of electricity from the power grid of Ukraine and the use of heat as by-product of combined heat and power production.
The project will also bring environmental benefits by reducing emissions of SO_2, NO_X and dust into the air from old thermal power plants.

Prior to the start of the Project, natural-gas fired steam and hot water boilers at the existing boiler house in Novoiavorivsk, Lviv region, generated only thermal energy for heat and hot water supply to consumers. The total pre-Project heat capacity was 59.9 Gcal/h.

The Project scenario envisages switching of the existing boiler house in Novoiavorivsk to combined heat and power generation through implementation of new power generating units, namely: a new R-4-21/3 No.1 steam turbine with T4-2UZ generator, R-6-35/3M No.2 steam turbine with T6-2UZ generator and gas turbine unit (GTU) with DZh59LZ engine and T202UZ generator. Upon the implementation of the Project, Novoyavorivska TPP will reach the total electrical capacity of 25 MW and heat capacity of about 59.9 Gcal/h.

The project will also bring experience of implementation of modern cogeneration technologies of heat and electric energy production.

Implementation of combined heat and power production under the proposed JI Project will improve energy efficiency at Novoyavorivska TPP. The TPP reconstruction will cause a major reduction of natural gas consumption in the course of heat and power generation, as well as a lower on-site consumption of electricity, which will lead to lower GHG emissions into the atmosphere.

24/12/2003 – the date when investment project “Electricity and thermal energy cogeneration in Novoiavorivsk” was registered;

07/07/2011 - Signing of the emission reductions purchase agreement relating to the joint implementation project by and between Biecas Investment Industries Limited and SPE “Energiya-Novoyavorivsk” LLC;

13/09/2011 – Signing of an assignment agreement between Biecas Investment Industries Limited and ORELAC GmBH;

26/12/2003 – starting date of the project design document development for the JI project “Energy efficiency improvement at Novoyavorivska TPP by re-equipment thereof”

16/02/2012 – Preparation and submission of the project idea note that provides justification of anthropogenic GHG emission reductions to the State Environmental Investment Agency of Ukraine.

26/04/2012 – the State Environmental Investment Agency of Ukraine issued a Letter of Endorsement No. 1096/23/7 for the Joint Implementation project “Energy efficiency improvement at Novoyavorivska TPP by re-equipment thereof”.

Determination Protocol contains CARs and CLs relate to the project as described in the PDD versions 01, 02 and 03.

4 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, Corrective and Forward 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 34 Corrective Action Requests and 8 Clarification Requests.

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

4.1 Project approvals by Parties involved (19-20)

The project ""Energy efficiency improvement at Novoyavorivska TPP by re-equipment thereof" has already obtained endorsement from the government of Ukraine, namely a Letter of Endorsement No. 1096/23/7 issued by the State Environmental Investment Agency of Ukraine dated 26/04/2012.
Bureau Veritas Certification received this letter from the project participants and does not doubt its authenticity.

Upon completion of the Determination Report the project design document will be submitted to the State Environmental Investment Agency of Ukraine for receiving a Letter of Approval.

As the project has no approval by the Parties involved, CAR 14 remains pending and will be closed after report finalizing (see Appendix A).

The identified areas of concern as to the project approvals by the Parties involved, project participants response and BVC's conclusion are described in Appendix A to the Determination Report (refer to CAR 14).

4.2 Authorization of project participants by Parties involved (21)

The participation for each of the legal entities listed as project participants in the PDD will be authorized by the Parties involved, through the written Letters of Approval (from the government of Switzerland as the country – participant of the project and from Ukraine as the host party). Refer to CAR 14.

4.3 Baseline setting (22-26)

The PDD explicitly indicates that using a methodology for baseline setting and monitoring developed in accordance with the requirements of Appendix B of the JI Guidelines (hereinafter referred to as "specific approach") was the selected approach for setting the baseline (in accordance with paragraph 11 of the Guidance on criteria for baseline setting and monitoring (Version 03)).

The proposed project applies the JI specific approach based on the "Guidance on criteria for baseline setting and monitoring" Version 03 using the elements of methodology AM0099 "Installation of a new natural gas fired gas turbine to an existing CHP plant" Version 01.0.0 approved by the Joint Implementation Supervisory Committee (JISC). The Project does not meet all the requirements of AM0099 methodology, but the fundamentals of the Project, namely "combined heat and power", are fully consistent with the methodology. The choice of AM0099 methodology elements was also made because of the up-to-dateness of the methodology for projects of this type. It was registered at the CDM Executive Board meeting No.65 and came into force on November 25, 2011.

The following documents approved by the CDM Executive Board were also used to estimate baseline emissions:

- "Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion" Version 02:
- "Tool to determine the baseline efficiency of the thermal or electric energy generation systems" Version 01

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. Continuation of the current situation, without the JI project implementation.
    b. Proposed project activity without the use of the JI mechanism.
    c. Partial project activities (some of the project activities are implemented) without the use of the Joint Implementation Mechanism.

(b) Taking into account relevant national and/or sectoral policies and circumstances, such as sectoral reform initiatives, local fuel availability, energy sector 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:

a. The role of energy sector is absolute and crucial for Ukraine. Power sector is a political factor of sovereignty in Ukraine. Ukrainian economy is considered to be one of the most energy intensive in the world in terms of the consumption of primary energy per a gross domestic product unit. On March 15, 2006 the Cabinet of Ministers of Ukraine adopted “Energy Strategy of Ukraine till 2030”. The Energy strategy considers exploration of non-traditional and renewable energy sources as a significant factor in increasing the level of energy safety, decrease of energy anthropogenic affect on environment and counteractions against global climate change.

b. In the framework of the existing market model for electrical and heat energy supply, the effective competition among the suppliers can’t be achieved; this market model can’t also ensure the competitive pricing, which would stimulate the suppliers to improve efficiency and increase investment in the sector. Existing market mechanisms and targeted administrative measures don’t provide for the necessary modernization and upgrading of the existing energy production systems. The situation is becoming particularly critical given the growth of the need for fossil fuels; the lack of fossil fuels represents a threat to reliable TPP operationl.

c. Existing tariffs for electrical and heat energy production are regulated by the state and do not include depreciation and investment needs of the producers. This situation leads to a constant shortage of funds and the inability of timely capital repair, ensuring equipment operation, investment in modernization and development of the infrastructure.

d. The current Ukrainian system of formation of tariffs for electrical and heat energy production does not include an investment component for TPP development. According to the Law “On Electrical Energy” SPE “Energiya-Novoyavorivsk” LLC is not obliged and is unmotivated to re-equip production facilities for power generation at its own expense. In addition, state investment programs in most cases are targeted at administrative and organizational implementations.

e. State support in the electrical and thermal energy sector is provided in amounts of funds provided by the law of Ukraine on State Budget of Ukraine for the relevant year.

f. The project scenario requires attracting significant additional funds. Such investment is characterized by a significant payback period and high investment risks, that is why it is not attractive for investors.

g. Ukraine has no experience in implementing similar JI projects in the electrical and thermal energy sector. The project implementation by means of selling emission reduction units will give Ukraine an opportunity to gain a useful experience in this sphere.

The PDD provides a detailed description in a complete and transparent manner, as well as justification, that the baseline was duly set.

The methods of calculation used to determine the expected and actual baseline emissions, are sufficiently described in sections E and D of the PDD, respectively.
The identified areas of concern as to the baseline setting, project participants response and BVC's conclusion are described in Appendix A to the Determination Report (refer to CAR 15 – CAR 22).

4.4 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 pursuant to paragraph 9 (a) of the "Guidance on criteria for baseline setting and monitoring", version 03. All explanations, descriptions and analyses are made in accordance with the selected tool or method.

The PDD provides a justification of the applicability of the approach with a clear and transparent description, as per item 4.3 above.

The developer of the project proved that anthropogenic emissions under the project are lower than the emissions that would take place in the absence of the project activity.
Additionality proofs are provided.
Three plausible and realistic alternative scenarios of the project were identified:

- Alternative 1.1: Continuation of the current situation, without the JI project implementation.
- Alternative 1.2: Proposed project activity without the use of the JI mechanism.
- Alternative 1.3: Partial project activities (some of the project activities are implemented) without the use of the Joint Implementation Mechanism.

and the mandatory compliance of the scenarios with the legislation and legal acts was demonstrated.
According to the "Tool for the demonstration and assessment of additionality" (Version 06.0.0) investment analysis and common practice analysis were used in the PDD to justify additionality of the project.
Thus, the overall conclusion is that the project activity meets the criteria of additionality, is not a baseline scenario and is additional.

Additionality is demonstrated appropriately as a result of the analysis using the approach chosen.
The identified areas of concern as to the additionality, project participants response and BVC's conclusion are described in Appendix A to the Determination Report (refer to CAR 23 – CAR 26, CL 04, CL 05).

4.5 Project boundary (32-33)

The project boundary, which is defined in the PDD and in accordance with the specific approach, delineated by Novoyavorivska TPP territory including new steam turbines and a gas turbine unit, encompasses all anthropogenic emissions by sources of greenhouse gases (GHGs) that are:

(i) Under the control of the project participants such as:
- CO_2 emissions due to electricity generation in the Ukrainian power grid;
- CO_2 emissions due to natural gas consumption in the course of heat production at Novoyavorivska TPP.

(ii) Reasonably attributable to the project such as:

- CO_2 emissions due to heat and electricity generation at Novoyavorivska TPP.

(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.

4.6 Crediting period (34)

The PDD states the starting date of the project as the date when the investment project No.119 implemented in the territory of Science Park of special economic zone “Yavoriv” was registered, and the starting date is 24/12/2003, which is after the beginning of 2000.

The PDD states the expected operational lifetime of the project in years and months, which is 25 years or 300 months – from January 1, 2004 to December 31, 2028.

The PDD states the length of the crediting period in years and months, which is 22 years or 264 months, and its starting date of the crediting period is 01/01/2007, which is the date the first emission reductions are expected to be 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.

The identified areas of concern as to the crediting period, project participants response and BVC’s conclusion are described in Appendix A to the Determination Report (refer to CAR 27, CAR 28).

4.7 Monitoring plan (35-39)

The PDD, in its monitoring plan section, explicitly indicates that JI specific approach was 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 reporting forms, the operating structure and management structure of the enterprise, that will be applied when implementing the monitoring plan.

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 to be monitored such as: natural gas combusted in the course of heat and electricity generation, net calorific value of natural gas, effective CO_2 emission factor for natural gas, electricity supplied to consumers, which would have been consumed from the grid in the absence of the project activity, carbon dioxide emission factor for electricity generation by thermal power plants, heat supplied to consumers in under the project, efficiency of natural-gas fired boilers, which would supply heat to consumers in the absence of the project activity.

The monitoring plan draws on the list of standard variables contained in appendix B of "Guidance on criteria for baseline setting and monitoring" developed by the JISC, as appropriate, including baseline emissions (BE_y), project emissions (PE_y), net calorific value of diesel fuel (NCV_{XX}).

According to the Guidelines for users of the joint implementation project design document form, revision # 04, the described approach to monitoring clearly states:

(i) Data and parameters that are not monitored throughout the crediting period, but are determined only once, and that are available already at the stage of PDD development:

$\eta_{NG,Boiler}$	efficiency of natural-gas fired boilers, which would supply heat to consumers in the absence of the project activity, %

(ii) Data and parameters that are not monitored throughout the crediting period, but are determined only once, but that are not already available at the stage of PDD development: none.

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

$FC_{NG,p,y}$	Natural gas consumption in the course of heat and electricity generation in period *y*, ths m^3
$EG_{Elec,b,y}$	Electricity supplied to consumers, which would have been consumed from the grid in the absence of the JI project in period *y*, MWh
$HG_{Pr,y}$	Heat supplied to consumers in period *y*, under the project scenario, TJ
$NCV_{NG,y}$	Net calorific value for natural gas in period *y*, TJ/ths m^3
$EF_{Elec,y}$	Carbon dioxide emission factor for electricity generation by thermal power plants connected to the Ukrainian grid, t CO_2/MWh
$EF_{C,NG,y}$	Carbon emission factor in the course of natural gas combustion in perio *y*, t C/TJ
$OXID_{NG,y}$	Carbon oxidation factor in the course of natural gas combustion in period y, relative units

The monitoring plan describes the methods employed for data monitoring (including its frequency) and recording, such as data archiving by using accounting and statistical software.
The most objective and cumulative factor that provides a clear picture of whether the emission reductions took place is the fact of GHG emission reductions by reequipment of Novoyavorivska TPP. It can be defined as the difference between baseline GHG emissions and the emissions after the project implementation.

The monitoring plan elaborates all algorithms and formulae used for the estimation/calculation of baseline emissions and project emissions such as:

Formulae used to estimate project emissions (for each gas, source etc.; emissions in units of CO_2 equivalent):

According to the "Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion" Version 02, project emissions (PE_y) during period y are calculated by the following formula:

$$PE_y = FC_{NG,p,y} \times COEF_{NG,y} \quad [1]$$

where:

- PE_y - Project GHG emissions due to natural gas combustion in the course of heat and electricity generation in period y, t CO_2e;
- $FC_{NG,p,y}$ - Natural gas combusted in the course of heat and electricity generation in period y, ths m^3;
- $COEF_{NG,y}$ - CO_2 emission factor for natural gas in period y, t CO_2/ths m^3;
- $[NG]$ - Natural gas combustion system;
- [p] - Project scenario emissions
- $[y]$ - Monitoring period.

CO_2 emission factor for natural gas in period y ($COEF_{NG,y}$) is calculated according the "Tool to calculate project or leakage CO2 emissions from fossil fuel combustion", Version 02, by the following formula:

$$COEF_{NG,y} = NCV_{NG,y} x EF_{CO2,NG,y}$$

[2]

where:

- $COEF_{NG,y}$ - CO_2 emission factor for natural gas in period y, t CO_2/ths m^3;
- $NCV_{NG,y}$ - Net calorific value of natural gas in period y, TJ/ths m^3;

$EF_{CO2,NG,y}$ - default carbon dioxide emission factor for stationary combustion of natural gas, in the project scenario (t CO_2 /TJ;

$[NG]$ - Natural gas combustion system;

$[y]$ - Monitoring period.

Calculation of default carbon dioxide emission factor for stationary combustion of natural gas in the project scenario ($EF_{CO2,NG,y}$):

$$EF_{CO_2,NG,y} = EF_{C,NG,y} \cdot OXID_{NG,y} \cdot 44/12 \quad [3]$$

Where:

$EF_{CO2,NG,y}$ – default carbon dioxide emission factor for stationary combustion of natural gas, in the project scenario t CO_2 /TJ;

$EF_{C,NG,y}$ - carbon emission factor in the course of natural gas combustion in period y, t C/TJ;

$OXID_{NG,y}$ - carbon oxidation factor in the course of natural gas combustion in period y, relative units;

$44/12$ - stoichiometric ratio between the molecular weight of carbon dioxide and carbon, t CO_2 /t C;

[NG] – Natural gas combustion system;

[y] – Monitoring period.

Formulae used to estimate baseline emissions (for each gas, source etc.; emissions in units of CO_2 equivalent):

GHG emissions in the baseline scenario in the period y are calculated according to the following formula**:**

Baseline emissions during period y are calculated by the following formula (BE_y):

$$BE_y = BE_{Elec,y} + BE_{Ther,y} \quad [4]$$

where:

BE_y - Total baseline GHG emissions in period y, t CO_2e;

$BE_{Elec,y}$ - Baseline GHG emissions due to electricity generation into the Ukrainian grid in period y, t CO_2e;

$BE_{Ther,y}$ - Baseline GHG emissions due to heat generation in period y, t CO_2e;

[Elec] - Electricity generation system;

[Ther] - Heat generation system;

$[y]$ - Monitoring period.

Baseline emissions during period y due to electricity production in the Ukrainian grid ($BE_{Elec,y}$):

$$BE_{Elec,y} = EG_{Elec,b,y} \times EF_{Elec,y} \quad [5]$$

where:

$BE_{Elec,y}$ - Baseline GHG emissions due to electricity generation into the Ukrainian grid in period y, t CO_2e;

$EG_{Elec,b,y}$ - Electricity supplied to consumers, which would have been consumed from the grid in period y in the absence of the JI project, MWh;

$EF_{Elec,y}$ - Carbon dioxide emission factor for electricity generation by thermal power plants connected to the Ukrainian grid in period y, t CO_2/MWh;

[Elec] - Electricity generation system;

[b] - Baseline emissions

$[y]$ - Monitoring period.

Baseline emissions in the course of heat generation by a boiler house in the ansence of the project activity in period y ($BE_{Ther,y}$):

$$BE_{Ther,y} = HG_{Pr,b,y} \times EF_{Heat,y} \quad [6]$$

where:

$BE_{Ther,y}$ - Baseline GHG emissions due to heat generation in period y, t CO_2e;

$HG_{Pr,b,y}$ - Heat supplied to consumers in the project scenario in period y, TJ;

$EF_{Heat,y}$ - CO_2 emission factor for natural-gas fired boilers which would generate heat for consumers in the absence of the project in period y, t CO_2/TJ;

[Heat] - Gas boiler heat generation system;

[Ther] - Thermal energy generation system;

[Pr] - System of heat supply to consumers;

[b] - Baseline emissions

[y] - Monitoring period.

Calculation of CO_2 emission factor for hea generation in the baseline scenario in peri y ($EF_{heat,y}$):

$$EF_{Heat,y} = \frac{EF_{CO2,NG,y}}{\eta_{NG,Boiler}} \times 100 \quad [7]$$

where:

$EF_{Heat,y}$ - CO_2 emission factor for natural-gas fired boilers which would generate heat for consumers in the absence of the project in period y, t CO_2/TJ;

$EF_{CO2,NG}$ - default carbon dioxide emission factor for stationary combustion of natural gas, in the baseline scenario t CO_2 /TJ;

$\eta_{NG,Boiler}$ - Efficiency of natural-gas fired boilers, which would generate heat for consumers in the absence of the project, %

[Heat] - Heat generation system;

$[NG]$ - Natural gas combustion system;

[Boiler] - System of natural-gas fired boilers;
$[y]$ - Monitoring period.

Calculation of default carbon dioxide emission factor for stationary combustion of natural gas in the baseline scenario ($EF_{CO2,NG,y}$):

$$EF_{CO_2,NG,y} = EF_{C,NG,y} \cdot OXID_{NG,y} \cdot 44/12 \quad [8]$$

Where:
$EF_{CO2,NG,y}$ – default carbon dioxide emission factor for stationary combustion of natural gas, in the baseline scenario t CO_2 /TJ;
$EF_{C,NG,y}$ - carbon emission factor in the course of natural gas combustion in period y, t C/TJ;
$OXID_{NG,y}$ - carbon oxidation factor in the course of natural gas combustion in period y, relative units;
$44/12$ - stoichiometric ratio between the molecular weight of carbon dioxide and carbon, t CO_2 /t C;
[NG] – Natural gas combustion system;
[y] – Monitoring period.

Formulae used to estimate leakage (for each gas, source etc.; emissions in units of CO_2 equivalent):

CH_4 leakage, which is connected with the production, processing, liquefaction, transportation, regasification and distribution of natural gas used by the project and fossil fuels in the power system in the absence of the Project may take place. These emissions were not taken into account for simplification and conservatism.

Formulae used to calculate emission reductions from the project (for each gas, source etc.; emissions/emission reductions in units of CO_2 equivalent):

Reduction of GHG emissions under the Project in period "y" (ER_y) is calculated by the formula:

$$ER_y = BE_y - PE_y \quad [3]$$

where:
ER_y - Total GHG emission reduction generated by the in period y, t CO_2eq;
PE_y - Project GHG emissions in period y, t CO_2eq;
BE_y - Baseline GHG emissions in period y, t CO_2eq;
$[y]$ - Monitoring period.

The monitoring plan presents the quality assurance and control procedures for the monitoring process, which are sufficiently described in tabular form in sections of the PDD D.2. and D.3. This includes, as appropriate, information on calibration and on how records on data and/or method validity and accuracy are kept.

The monitoring plan clearly identifies the responsibilities and the authority regarding the monitoring activities. Collection of all the key parameters required for monitoring and calculation of GHG emission reductions are continuously carried out according to the practice, established at SPE «Energiya-Novoyavorivsk» LLC. Monitoring of the project does not require any changes in the existing and data collection and accounting system.

On the whole, the monitoring report reflects good monitoring practices appropriate to the project type.

The monitoring plan provides 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, expert judgment, proprietary data, JISC, commercial and scientific literature etc.) but not including data that are calculated with equations.

The monitoring plan indicates that the data monitored and required for verification are to be kept for two years after the last transfer of ERUs for the project.

The identified areas of concern as to the monitoring plan, project participants response and BVC's conclusion are described in Appendix A to the Determination Report (refer to CAR 29 - CAR 33; CL 06, CL 07).

4.8 Leakage (40-41)

The PDD appropriately describes an assessment of the potential leakage of the project and appropriately explains which sources of leakage are to be calculated, and which can be neglected.

According to the selected specific approach that is based on "Installation of a new natural gas fired gas turbine to an existing CHP plant", Version 01.0.0 it is stated in the PDD that CH_4 leakage, which is connected with the production, processing, liquefaction, transportation, regasification and distribution of natural gas used by the project and fossil fuels in the power system in the absence of the Project may take place. These emissions were not taken into account for simplification and conservatism.

4.9 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), which are 31 190 tons of CO2eq in 2007, 434 448 tons of CO2eq in 2008-2012, 1 362 912 tons of CO2eq in 2013-2028;

(b) Leakage is not expected in the project boundary;

(c) Emissions for the baseline scenario (within the project boundary), which are 33 250 tons of CO2eq in 2007, 664 790 tons of CO2eq in 2008-2012, 2 065 744 tons of CO2eq in 2013-2028;

(d) Emission reductions adjusted by leakage (based on (a)-(c) above), which are 2 060 tons of CO2eq in 2007, 230 342 tons of CO2eq in 2008-2012, 702 832 tons of CO2eq in 2013-2028.

The estimates referred to above are given:

(a) On an annual basis;

(b) From 01/01/2007 to 31/12/2028, 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 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.

The formulae used for calculating the estimates referred above, are given in section 4.7. All formulae are consistent throughout the PDD.

For calculating the estimates referred to above, such key factors as the Ukrainian environmental legislation and other national legislation, as well as key relevant factors such as availability of funds for implementation of measures envisaged by the project, tariffs that are set by the state, modern technology and the ability to implement know-how in the electric and thermal power sector, influencing the baseline emissions and the

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

Data sources used for calculating the estimates referred to above, such as documents and archival data of the enterprise, standards and statistical forms, results of periodic verifications are clearly identified, reliable and transparent.

Emission factors, such as Carbon emission factor in the course of natural gas combustion ($EF_{C,NG,y}$), carbon dioxide emission factor for electricity generation by thermal power plants ($EF_{Elec,y}$) 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.

The annual average of estimated emission reductions over the crediting period is calculated by dividing the total estimated emission reductions over the crediting period by the total months of the crediting period, and multiplying by twelve.

Detailed algorithms of calculations and their results are described in sections B, E and Supporting documents to the PDD.

The identified areas of concern as to the estimation of emission reductions, project participants response and BVC's conclusion are described in Appendix A to the Determination Report (refer to CAR 34, CL 08).

4.10 Environmental impacts (48)

Sections F.1. and F.2. of the PDD provide information about documentation on the analysis of the environmental impacts of the project, including transboundary impacts, in accordance with procedures as determined by the host Party.

The PDD states that pursuant to paragraph 10 of Annex E of SCN A.2.2-1-2003, PP "Tsentr novitnikh tekhnolohii" conducted EIA in 2005. According to the calculations for the project TPP on the basis of a boiler house, the maximum near-earth concentration of all pollutants for the 1st and the 2nd construction lines do not exceed the MAC. Thus, gas contamination level near Novoiavorivsk will decrease after the boiler house reconstruction.

According to the PDD, the facilities included in the project boundary, meet all standards and requirements of SCN A.2.2-1-2003, the Water Code of Ukraine and SNiP 4630-92 on determining the maximum allowable concentration for domestic water facilities, the Land Code Ukraine and the National technology standard: SSTU 17.4.1.02.-83 "Protection of nature, soil. Classification of chemicals to control pollution", are environmentally safe and do not cause any negative impact on the environment.

In general, the impact of the project “Energy efficiency improvement at Novoyavorivska TPP by re-equipment thereof” on the environment in the course of construction work may be assessed as permitable as the project obtained all necessary permissions. The project facilities are not included in the list of activities and facilities that are hazardous for the environment.

The PDD provides conclusion and all references to supporting documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party.

4.11 Stakeholder consultation (49)

The community was informed via mass-media. Information concerning the compliance with environmental safety requirements was published in local “Yavorivshchyna” newspaper on 29/12/2004. All the comments received were positive.

4.12 Determination regarding small scale projects (50-57)

Not applicable.

4.13 Determination regarding land use, land-use change and forestry (LULUCF) projects (58-64)

Not applicable.

4.14 Determination regarding programmes of activities (65-73)

Not applicable.

5 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.

6 DETERMINATION OPINION

Bureau Veritas Certification has performed a determination of the “Energy efficiency improvement at Novoyavorivska TPP by re-equipment thereof”

Project in 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 participant/s used the latest tool for demonstration of the additionality. In line with this tool, the PDD provides investment analysis and common practice analysis, to determine that the project activity itself is not the 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 determination revealed one pending issue related to the current determination stage of the project: the written approval of the project from the host Party (Ukraine) was not obtained. If the written approval from the host Party is awarded, it is our opinion that the project as described in the Project Design Document, Version 03 dated 06/06/2012 meets all the relevant UNFCCC requirements for the determination stage and the relevant host Party criteria as well as project stakeholders expectations.

The review of the project design documentation (version 03 dated 06/06/2012) and the subsequent follow-up 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.

7 REFERENCES

Category 1 Documents:
Documents provided by CEP CARBON EMISSIONS PARTNERS S.A. that relate directly to the GHG components of the project.

/1/	The PDD "Energy efficiency improvement at Novoyavorivska TPP by re-equipment thereof", version 01 dated 25/04/2012
/2/	The PDD "Energy efficiency improvement at Novoyavorivska TPP by re-equipment thereof", version 02 dated 22/05/2012
/3/	The PDD "Energy efficiency improvement at Novoyavorivska TPP by re-equipment thereof", version 03 dated 06/06/2012
/4/	Supporting document 1. "Energy efficiency improvement at Novoyavorivska TPP by re-equipment thereof"
/5/	Supporting documents 2. Investment analysis
/6/	Letter of Endorsement No.1096/23/7 issued by the State Environmental Investment Agency of Ukraine dated 26/04/2012
/7/	Methodology AM0099 "Installation of a new natural gas fired gas turbine to an existing CHP plant" Version 01.0.0
/8/	Tool for the demonstration and assessment of additionality, version 06.0.0.
/9/	The Kyoto Protocol
/10/	Marrakesh Agreement, JI Methods
/11/	National inventory of greenhouse gas anthropogenic emissions by sources and removals by sinks in Ukraine for the period of 1990-2010
/12/	Third National Communication of Ukraine on climate change under the Kyoto Protocol
/13/	Fourth National Communication of Ukraine on climate change under the Kyoto Protocol
/14/	Fifth National Communication of Ukraine on climate change under the Kyoto Protocol
/15/	Law of Ukraine "On energy saving"
/16/	Law of Ukraine "On Heat Supply"
/17/	NERC of Ukraine Letter dated 10/02/2004 № 01-30-09/466 On policy of electricity and natural gas price and tariff control

/18/	The decision of the executive committee of Lviv City Council No. 844 dated 03/10/2003 "On thermal energy and heat supply tariffs"
/19/	Law of Ukraine "On Electricity"
/20/	Order of the National Environmental Investment Agency of Ukraine (hereinafter- NEIAU) № 62 dated 15/04/2011 «On approval of carbon dioxide emission factor values in 2008»
/21/	NEIAU Order №63 dated 15/04/2011p. «On approval of carbon dioxide emission factor values in 2009»
/22/	NEIAU Order №43 dated 28/03/2011p. «On approval of carbon dioxide emission factor values in 2010»
/23/	NEIAU Order №75 dated 12.05.2011p. «On approval of carbon dioxide emission factor values in 2011»
/24/	JI guidelines. Appendix to decision 9/CDM.1.
/25/	JI Determination and Verification Manual, Version 01
/26/	Guidance on criteria for baseline setting and monitoring, JISC. Version 03.

Category 2 Documents:

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

/1/	Registration certificate of the investment project No.119 implemented in the territory of Science Park of special economic zone "Yavoriv" dated 24/12/2003
/2/	Investment project "Electricity and thermal energy cogeneration in Novoiavorivsk" dated 24/12/2003
/3/	Certificate on commissioning of completed facilities (the 1st line of Novoyavorivsk thermal power plant complex) issued by the state acceptance commission dated 13/06/2006
/4/ PU	Certificate on commissioning of completed facilities (the 2nd line of Novoyavorivsk thermal power plant complex) issued by the state acceptance commission dated 22/04/2008
/5/	Report on thermal energy supply in 2011 (form 1-therm annual)
/6/	Report on thermal energy supply in 2010 (form 1-therm annual)
/7/	Report on thermal energy supply in 2009 (form 1-therm annual)
/8/	Report on thermal energy supply in 2008 (form 1-therm annual)
/9/	Report on thermal energy supply in 2007 (form 1-therm annual)
/10/	Report on production costs and financial performance of the company due to provision of heat supply services from January to December 2011 (1C form)
/11/	Report on production costs and financial performance of the company due to provision of heat supply services from January to December 2010 (1C form)
/12/	Report on production costs and financial performance of the company due to provision of heat supply services from January to December 2009 (1C form)

/13/	Report on production costs and financial performance of the company due to provision of heat supply services from January to December 2008 (1C form)
/14/	Report on production costs and financial performance of the company due to provision of heat supply services from January to December 2007 (1C form)
/15/	Report on licensed activity of electric and thermal energy production by a business entity in 2007 (6-NERC-power production form)
/16/	Report on licensed activity of electric and thermal energy production by a business entity in 12 months 2008 (форма 6-НКРЕ-енерговиробництво)
/17/	Report on licensed activity of electric and thermal energy production by a business entity in 2009 (6-NERC-power production form)
/18/	Report on licensed activity of electric and thermal energy production by a business entity in 2010 (6-NERC-power production form)
/19/	Report on licensed activity of electric and thermal energy production by a business entity in 2011 (6-NERC-power production form)

Persons interviewed:

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

	Name	Organization	Position
/1/	Oleksandr Oleksiuk	SPE "Energiya-Novoyavorivsk" LLC (Novoyavorivska TPP)	Director, Working Team member
/2/	Petro Masliiovych	SPE "Energiya-Novoyavorivsk" LLC (Novoyavorivska TPP)	Technical director
/3/	Olha Hula	SPE "Energiya-Novoyavorivsk" LLC (Novoyavorivska TPP)	Commercial director
/4/	Tetiana Stadnyk	SPE "Energiya-Novoyavorivsk" LLC (Novoyavorivska TPP)	Chief economist
/5/	Oleksii Tistyk	SPE "Energiya-Novoyavorivsk" LLC (Novoyavorivska TPP)	TPP director
/6/	Mariia Romaniuk	SPE "Energiya-Novoyavorivsk" LLC (Novoyavorivska TPP)	Chief accountant
/7/	Roman Ushatskyi	CEP LLC	Consultant of CEP CARBON EMISSIONS PARTNERS S.A.

APPENDIX A: COMPANY PROJECT DETERMINATION PROTOCOL

BUREAU VERITAS CERTIFICATION HOLDING SAS

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

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
Guidelines for Users of the JI PDD form Section A General description of the project				
A.1. Title of the project				
A.1	Is the title of the project presented?	The title is presented. The title of the project is "Energy efficiency improvement at Novoyavorivska TPP by re-equipment thereof".	OK	OK
A.1	Is the sectoral scope to which the project pertains presented?	Sectoral scope: Sectoral scope 1 - Energy industry (renewable / non-renewable sources)	OK	OK
A.1	Is the current version number of the document presented?	The current version of the document: PDD, Version 03 dated 06/06/2012. See Section A.1.	OK	OK
A.1	Is the date when the document was created presented?	The date when the document was created: 06/06/2012.	OK	OK
A.2. Description of the project				
A.2	Is the purpose of the project included with a concise, summarizing explanation (max.	Prior to the start of the Project, natural-gas fired steam and hot water boilers at the existing boiler house in	**CAR 01**	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	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)?	Novoiavorivsk, Lviv region, generated only thermal energy for heat and hot water supply to consumers. The baseline scenario for the Project is continuation of the practice existing prior to the implementation of the Project. Electricity in the amount equivalent to Novoyavorivska TPP generation would have been produced at power plants connected to the Ukrainian power grid, and heat would have been generated by the existing (or new) boilers by means of natural gas combustion. The Project scenario envisages switching of the existing boiler house in Novoiavorivsk to combined heat and power generation through implementation of new power generating units, namely: a new R-4-21/3 No.1 steam turbine with T4-2UZ generator, R-6-35/3M No.2 steam turbine with T6-2UZ generator and gas turbine unit (GTU) with DZh59LZ engine and T202UZ generator. Upon the implementation of the Project, Novoyavorivska TPP will reach the total electrical capacity of 25 MW and heat capacity of about 59.9 Gcal/h. **CAR 01**. Please, add information relating to the		

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
		purpose of the project to Section A.2 of the PDD.		
A.2	Is the history of the project (incl. its JI component) briefly summarized?	**CAR 02.** Please, provide information about the agreement between Biecas Investment Industries Limited and SPE "Energiya-Novoyavorivsk" LLC and the agreement between Biecas Investment Industries Limited and ORELAC GmBH. **CL 01.** Please, provide information relating to the impact of the project activities on GHG emission reductions.	**CAR 02** **CL 01**	OK OK
A.3. Project participants				
A.3	Are project participants and Party (ies) involved in the project listed?	Parties involved in the project: SPE «Energiya-Novoyavorivsk» LLC (Ukraine - the host party) and CEP Carbon Emissions Partners S.A. (Switzerland).	OK	OK
A.3	Is the data of the project participants presented in tabular format?	The data of the project participants are presented in tabular format. **CAR 03.** Please, modify the table in Section A.3. of the PDD in accordance with Guidelines for users of the JI PDD form (Version 04).	**CAR 03**	OK
A.3	Is contact information provided in Annex 1 of the PDD?	Contact information on SPE «Energiya-Novoyavorivsk» LLC, ORELAC GmBH and CEP Carbon Emissions Partners S.A. is provided in Annex 1 of the PDD.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
A.3	Is it indicated, if it is the case, that the Party involved is a host Party?	Ukraine is the Host Party.	OK	OK
A.4 Technical description of the project				
Location of the project				
A.4.1.1	Host Party(ies)	Ukraine is the Host Party.	OK	OK
A.4.1.2	Region/State/Province etc.	Lviv region, Ukraine	OK	OK
A.4.1.3	City/Town/Community etc.	Novoiavorivsk, Ukraine	OK	OK
A.4.1.4	Detail of the physical location, including information allowing the unique identification of the project. (This section should not exceed one page).	Information about location is given in Section A.4.1.4 of the PDD.	OK	OK
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?	PDD Section A.4.3 provides the description of the main stages of the project implementation, the annual project activities schedule, some relevant technical data relating to main equipment to be implemented as well as project activities. Project design represents the current cutting-edge practice. **CAR 04**. Please, provide information whether the concept of the project corresponds to the existing	**CAR 04** **CAR 05** **CAR 06** **CAR 07** **CAR 08** **CAR 09** **CAR 10**	OK OK OK OK OK OK OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
		modern practice. **CAR 05**. Please, indicate whether the project uses the most modern technology that will lead to higher productivity. **CAR 06**. Please, provide information on whether the project provides for replacement of project equipment. **CAR 07**. Please, provide information on whether the project activity requires special training. **CAR 08**. Please, provide information about the impact of project equipment on GHG emission reductions. **CAR 09**. In Table 2. Section A.4.3. it is stated that the efficiency of steam turbines is 25%, while the other value of steam turbine efficiency equal to 30% is provided in the same section. Please, make the necessary corrections. **CAR 10**. Please, provide an explanation relating to Figure 5. in Section A.4.3.		
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 stated how anthropogenic GHG emission reductions are to be achieved?	The TPP reconstruction will cause a major reduction of natural gas consumption in the course of heat and	**CL 02** **CAR 11**	OK OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	(This section should not exceed one page)	electricity generation, as well as a lower on-site consumption of electricity, which will lead to lower GHG emissions into the atmosphere. **CL 02**.Please, explain why it is impossible to achieve emission reductions without such project. **CAR 11**. Reference 8 in Section A.4.4. is incorrect. Please, provide the correct reference.		
A.4.3	Is it provided the estimation of emission reductions over the crediting period?	The estimation of emission reductions over the crediting period is provided in Section A.4.4.1. of the PDD. **CAR 12**. In Table 6, Section A.4.4.1. of the PDD average annual GHG emission reductions are calculated incorrectly. Please, make necessary corrections. **CAR 13**. Emission reductions for 2008, stated in Table 6 of the PDD are different from the reductions specified in the Supporting document 1. **CL 03**. Please, provide a reference to the laws mentioned in Section A.4.4 of the PDD.	**CAR 12** **CAR 13** **CL 03**	OK OK OK
A.4.3	Is it provided the estimated annual reduction for the chosen credit period in tCO_2e?	The estimated annual reduction for the first commitment period as well as the estimated annual reduction for the period before and after the first	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
		commitment period within the project are provided in tCO_2e.		
A.4.3	Are the data from questions above presented in tabular format?	Information on the crediting period, the period before and after the crediting period is presented in tabular format. Refer to PDD (Version 03) Tables 5, 6 and 7, Section A.4.4.1.	OK	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?	The length of the crediting period is indicated in the PDD Section A.4.4.1. and Section C.	OK	OK
A.4.3.1	Are estimates of total as well as annual and average annual emission reductions in tonnes of CO_2 equivalent provided?	Total as well as annual and average annual emission reductions in tonnes of CO_2 equivalent are provided in accordance with the calculated values in the tables of Section A of PDD and the Supporting Documents.	OK	OK
Project approvals by Parties				
19	Have the DFPs of all Parties listed as "Parties involved" in the PDD provided written project approvals?	**CAR 14**. The project has no approval of the Host Party and the country – project participant. To obtain the Letter of Approval the final Determination report must be submitted to the State Environmental Investment Agency of Ukraine that includes this Determination Protocol and the list of sources of Reference Information.	**CAR 14**	Pending

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
		A Letter of Approval of Switzerland as the investing country is also not obtained at the current stage of the Project. **CAR 14** will be closed after the Letter of Approval is issued by the Host Party.		
19	Does the PDD identify at least the host Party as a "Party involved"?	The Host Party involved is Ukraine.	OK	OK
19	Has the DFP of the host Party issued a written project approval?	Reference to **CAR 14.**	**CAR 14**	Pending
20	Are all the written project approvals by Parties involved unconditional?	Reference to **CAR 14.**	**CAR 14**	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	Party involved 1: Ukraine (the host Party), legal entity is SPE «Energiya-Novoyavorivsk» LLC. Party involved 2: Switzerland, legal entity is CEP Carbon Emissions Partners S.A. The project participants will be authorized in accordance with the relevant project approvals. Pending **CAR 14**	**CAR 14**	Pending

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	the 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	To set the baseline scenario and monitoring plan the specific approach is used for the JIP. **CAR 15**. Please, state whether any elements of approved CDM methodologies were used for establishing the baseline.	**CAR 15**	OK
JI specific approach only				
23	Does the PDD provide a detailed theoretical description in a complete and transparent manner?	The choice of the applicable baseline for the project is justified; detailed theoretical description is provided in section B.1 of PDD version 03. **CAR 16.** The reference to the Joint Implementation Supervisory Committee given in Section B.1. is incorrect. Please, provide the correct reference. **CAR 17.** Reference to the methodology, elements of which are used to determine the baseline, is incorrect.	**CAR 16** **CAR 17**	OK OK
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?	The PDD provides detailed, full and transparent description and justification that the baseline is established: (a) By listing and describing plausible future scenarios and selecting the most plausible one. After evaluation of several alternatives the most plausible of them have	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	(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, parameters, date sources and key factors? (c) In a transparent manner with regard to the choice of approaches, assumptions, methodologies, parameters, date sources and key factors? (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?	been identified and will be used as a baseline:: - Alternative 1.1: Continuation of the current situation, without the JI project implementation. - Alternative 1.2: Proposed project activity without the use of the JI mechanism. - Alternative 1.3: Partial project activities (some of the project activities are implemented) without the use of the Joint Implementation Mechanism. (b) By taking into account key factors, such as technological requirements to electrical and thermal energy production, Ukrainian environmental legislation and other national legislation, as well as key relevant factors such as availability of funds for TPP construction and reconstruction, tariffs for electric and thermal energy, availability of local technologies and methods of the project, experience and skills in implementation of measures similar to the ones planned under the project; (c) In a transparent manner with regard to the choice of JI specific approach and assumptions, parameters, data sources and key factors for identifying initial conditions listed in tabular format in Section B.1.		

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
		(d) By 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. The baseline is set; the description is provided in Section B of the PDD.		
24	If selected elements or combinations of 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?	The baseline assumptions of the developed JI specific approach are clearly described in full in Section B.1 of the PDD version 03. **CAR 18**. Please, specify the version of the document "Tool to determine the baseline efficiency of the thermal or electric energy generation systems". **CAR 19**. When determining the parameters of the baseline state the appropriate indexes necessary to indicate the baseline. **CAR 20**. Please, provide information on how the data necessary for determining the baseline will be stored. **CAR 21**. Tables that describe the parameters used to set the baseline include parameters used to calculate emissions from natural gas, but the baseline doesn't	**CAR 18** **CAR 19** **CAR 20** **CAR 21** **CAR 22**	OK OK OK OK OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
		provide for such emissions. **CAR 22**. Please, check whether the description of the parameters listed in the formulae and the description of the parameters in tables are identical.		
25	If a multi-project emission factor is used, does the PDD provide appropriate justification?	When setting baseline the following factors are used: carbon dioxide emission factor for electricity generation by thermal power plants and heat supplied to consumers under the project. Data sources that were (will be) used: NEIAU Orders No.62, 63, 43, 75, "Standardized emission factors for the Ukrainian electricity grid", "Ukraine - Assessment of new calculation of CEF", IPCC.	OK	OK
CDM methodology approach only				
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	The PDD indicates that the project scenario is not a part of the determined baseline scenario. It is also stated that the project will lead to emission reductions. Additionality of the project activity is demonstrated in PDD Section B.2 using the "Tool for the demonstration and assessment of additionality" (Version 06.0.0). **CL 04**. Please, provide a reference to the Law of	**CL 04** **CAR 23** **CAR 24** **CL 05** **CAR 25** **CAR 26**	OK OK OK OK OK OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	not part of the identified baseline scenario and 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 period) or any other method for proving additionality approved by the CDM Executive Board".	Ukraine "On Electricity" in Section B.2. **CAR 23**. It is stated in Section B.2. that current Ukrainian system of electricity tariff formation does not include an investment component for the development of gas distribution networks. But the gas distribution networks aren't includedin the project boundary. **CAR 24**. In the section that demonstrates additionality of the project the developer claims that the use of the discount rate that is determined by considering the average cost of capital (WACC) is recommended by the Tool for the demonstration and assessment of additionality (Version 06.0.0). However this document doesn't provide for such recommendations. **CL 05**. Please, specify a document that is the source for the calculation of the company's own capital. **CAR 25**. Discount rate is calculated incorrectly. Please, make all necessary corrections. **CAR 26**. The following is stated in Table 8. of the PDD - "Revenue from gas supply". But SPE "Energiya-Novoyavorivsk" LLC earns revenue by selling electricity and heat.		
29 (a)	Does the PDD provide a justification of the	Detailed analysis described in Sections B.1 and B.2,	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	applicability of the approach with a clear and transparent description?	shows that emissions of the baseline scenario are likely to exceed emissions of the project scenario due to the implementation of project activities.		
29 (b)	Are additionality proofs provided?	Yes. Refer to Section B.2. of the PDD.	OK	OK
29 (c)	Is the additionality demonstrated appropriately as a result?	The fact that the project activity itself is not the baseline scenario is clearly demonstrated in Sections A.2, B.1, B.2 of the PDD.	OK	OK
30	If the approach 28 (c) is chosen, are all explanations, descriptions and analyses made in accordance with the selected tool or method?	All explanations, descriptions and analyses are made in accordance with the newest version of the "Tool for the demonstration and assessment of additionality". (Version 06.0.0)	OK	OK
Approved CDM methodology approach only_ Paragraphs 31(a) – 31(e)_Not applicable				
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?	The project boundary defined in the PDD encompasses all anthropogenic emissions by sources of GHGs that are: (i) Under the control of the project participants such as: - CO_2 emissions due to electricity generation in	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	(ii) Reasonably attributable to the project? (iii) Significant?	the Ukrainian power grid; - CO_2 emissions due to natural gas consumption in the course of heat production at Novoyavorivska TPP. (ii) Reasonably attributable to the project such as: - CO_2 emissions due to heat and electricity generation at Novoyavorivska TPP. (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.		
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?	Project boundary is defined on the basis of case-by-case assessment of different emission sources.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
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 if it is possible?	The project boundary is presented in a tabular form and in a graphic figure and is understandable enough.	OK	OK
32 (d)	Are all gases and sources included explicitly stated, and the exclusions of any sources related to the baseline or the project are appropriately justified?	All gases and sources included are explicitly stated. See Section B of the PDD.	OK	OK
Approved CDM methodology approach only_Paragraph 33_ Not applicable				
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?	According to the Guidelines for users of the JI PDD form s, Version 04 the starting date of the project is the date when implementation, construction or real actions under the project start. The starting date of the project is identified and specified in Section C. 1 of the PDD. 24/12/2003 - the date when the investment project No.119 implemented in the territory of Science Park of special economic zone “Yavoriv” was registered.	OK	OK
34 (a)	Is the starting date after 2000?	The starting date is after 2000.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
34 (b)	Does the PDD state the expected operational lifetime of the project in years and months?	The expected operational lifetime of the project in years and months is 25 years, or 300 months. **CAR 27**. Please, state the starting and the end dates of the operational lifetime of the project.	**CAR 27**	OK
34 (c)	Does the PDD state the length of the crediting period in years and months?	The length of the crediting period is stated in years and months in Section C.3. **CAR 28.** Please, state the end date of the crediting period.	**CAR 28**	OK
34 (c)	Is the starting date of the crediting period before or after the date of the first emission reductions or enhancements of net removals generated by the project?	The starting date of the crediting period is the date when the first emission reductions are expected to be generated by the project.	OK	OK
34 (d)	Does the PDD state that the crediting period for issuance of ERUs starts only after the beginning of 2008 and does not extend beyond the operational lifetime of the project?	Generation of ERUs relates to the first commitment period of 5 years (January 1, 2008 – December 31, 2012).	OK	OK
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	The PDD states that the prolongation of the crediting period beyond 2012 is subject to approval of the host party and estimation of emission reductions is presented separately for those until 2012 and those after 2012 in the relevant sections of PDD.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	enhancements of net removals presented separately for those until 2012 and those after 2012?	If after the first commitment period under the Kyoto protocol, the Kyoto protocol is prolonged, the crediting period under the project will be prolonged by 16 years/192 months until December 31, 2028.		
Monitoring Plan				
35	Does the PDD explicitly indicate which of the following approaches is used? − JI specific approach − Approved CDM methodology approach	The proposed project uses a JI specific approach based on the JI requirements in accordance with paragraph 9 (a) of the JI Guidance on criteria for baseline setting and monitoring, version 03. **CAR 29**. The name of Guidance which served as a basis for the monitoring plan is stated incorrectly.	**CAR 29**	OK
JI specific approach only				
36 (a)	Does the monitoring plan describe: − All relevant factors and key characteristics subject to monitoring? − The period in which they will be monitored? − All critical factors for the control and reporting of project performance?	The monitoring plan specifies all key factors for the control and reporting on project performance: quality control (QC) and quality assurance (QA) procedures; operational and management structures that will be applied when implementing the monitoring plan. **CAR 30**. Please, in a table containing data and parameters to be monitored throughout the crediting period specify all parameters to be included in this category. **CAR 31**. Not all parameters are included in the table of	**CAR 30** **CAR 31**	OK OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
		data to be collected to monitor emissions from the project.		
36 (b)	Does the monitoring 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?	The monitoring plan specifies indicators, constants and variables used that are reliable, valid and provide transparent picture of the emission reductions or enhancement of net removals to be monitored. Data to be monitored are presented in section D of the PDD. **CAR 32**. Please, check the indexes in the formulae for GHG emission calculation.	**CAR 32**	OK
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	Default values are provided in the relevant sections of the PDD. They originate from recognized sources and are presented in a transparent manner.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	statistical analyses providing reasonable confidence levels? − Are the default values presented in a transparent manner?			
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?	The monitoring plan clearly indicates how the values are to be selected and justified.	OK	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 the values provided justified?	The monitoring plan clearly indicates the precise references from which the default values are taken. The conservativeness of the values provided is justified.	OK	OK
36 (b) (iii)	For all data sources, does the monitoring plan specify the procedures to be followed if expected data are unavailable?	Refer to section D of the PDD. **CAR 33.** Please, add information regarding collecting and archiving of data in Section D.2.	**CAR 33**	OK
36 (b) (iv)	Are International System Units (IS units) used?	IS units are used for certain parameters.	OK	OK
36 (b)	Does the monitoring plan note any	Relevant data necessary for determining the baseline	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
(v)	parameters, coefficients, variables, etc. that are used to calculate baseline emissions or net removals but are obtained through monitoring?	scenario for anthropogenic emissions of greenhouse gases within the project boundary are presented in tables of Section D.2. of the PDD.		
36 (b) (v)	Is the use of parameters, coefficients, variables, etc. consistent between the baseline and monitoring plan?	The use of parameters, coefficients and variables are consistent between the baseline and monitoring plan.	OK	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"?	The monitoring plan is set taking into account the "Guidance on criteria for baseline setting and monitoring".	OK	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 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,	The monitoring plan clearly distinguishes three types of data and parameters. Refer to Section D.2. of the PDD. (i) 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. (ii) Data and parameters that are monitored throughout the crediting period. (iii) Data and parameters that are not monitored	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	but are determined only once (and thus remain fixed throughout the crediting period), but that are not yet available at the stage of determination? (iii) Data and parameters that are monitored throughout the crediting period?	throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), but that are not yet available at the stage of determination (absent).		
36 (e)	Does the monitoring plan describe the methods employed for data monitoring (including its frequency) and recording?	In tables of parameters provided in section D.2. of the PDD the time of monitoring (frequency) and the source of data to be used, as well as recording method are indicated for all the monitored parameters and data.	OK	OK
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?	All algorithms and formulae used for the estimation of baseline and project emissions are indicated and explained in the PDD. The description of formulae is provided in Section E of the PDD	OK	OK
36 (f) (i)	Is the underlying rationale for the algorithms/formulae explained?	Refer to section 36 (f) of this table.	OK	OK
36 (f) (ii)	Are consistent variables, equation formats, subscripts etc. used?	Consistent variables, equation formats, subscripts etc. are used.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
36 (f) (iii)	Are all equations numbered?	**CL 06**. Please, check the numbering of formulae.	**CL 06**	OK
36 (f) (iv)	Are all variables with units indicated defined?	Yes. All variables with units indicated are defined in relevant sections.	OK	OK
36 (f) (v)	Is the conservativeness of the algorithms/procedures justified?	Yes, algorithms/procedures comply with state norms and are conservative.	OK	OK
36 (f) (v)	To the extent possible, are methods to quantitatively account for uncertainty in key parameters included?	Uncertainty in parameters used is low taking into account the algorithms of data monitoring.	OK	OK
36 (f) (vi)	Is consistency between the elaboration of the baseline scenario and the procedure for calculating the emissions or net removals of the baseline ensured?	There is consistency between the elaboration of the baseline scenario and procedure for calculating the baseline emissions in the monitoring plan and in tables.	OK	OK
36 (f) (vii)	Are any parts of the algorithms or formulae that are not self-evident explained?	The formulae used in the PDD are sufficiently described.	OK	OK
36 (f) (vii)	Is it justified that the procedure is consistent with standard technical procedures in the relevant sector?	Monitoring under the project does not require any changes in existing accounting and data collection system existing at SPE “Energiya-Novoyavorivsk” LLC.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
36 (f) (vii)	Are references provided as necessary?	All necessary references are provided in the PDD version 03.	OK	OK
36 (f) (vii)	Are implicit and explicit key assumptions explained in a transparent manner?	All key assumptions are explained in a transparent manner.	OK	OK
36 (f) (vii)	Is it clearly stated which assumptions and procedures have significant uncertainty associated with them, and how such uncertainty is to be addressed?	N/A	OK	OK
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?	To ensure conservativeness of parameters constant routine calibration of measuring equipment is carried out and the latest editions of the regulatory and technical documentation is used. In the absence of the latest editions of the regulatory and technical documentation their previous versions will be used. Calibration of accounting and measuring devices is carried out according to the methodologies of verification / calibration of measuring devices that are approved by manufacturers, and in accordance with national standards of Ukraine.	OK	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	The monitoring plan is identified according to national norms and standards.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	certain aspects of the 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?	Yes	OK	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 records on data and/or method validity and accuracy are kept and made available upon request?	All data of meters and metering devices that are regularly calibrated and verified in accordance with the procedures of quality management, the Law of Ukraine "On metrology and metrological activity" are checked daily. In addition to these daily checks of parameters, in order to ensure normal functioning of the equipment other data are also monitored.	OK	OK
36 (j)	Does the monitoring plan clearly identify the responsibilities and the authority regarding the monitoring activities?	Detailed operational and management structures are given in Section D.3 to the PDD. **CL 07**. Please, provide information on who determined the monitoring plan.	**CL 07**	OK
36 (k)	Does the monitoring plan, on the whole, reflect good monitoring practices	Monitoring under the project does not require any changes in existing accounting system and data	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	appropriate to the project type? If it is a JI LULUCF project, is the good practice guidance developed by IPCC applied?	collection procedure.		
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?	Table in Section D.2 of the PDD provides compilation of all data needed to monitor project and baseline emissions.	OK	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?	Data to be monitored and required for determination will be kept for two years after the last transfer of ERUs under the project.	OK	OK
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	Yes, selected elements of the approved CDM methodology are used for setting the baseline scenario. The selected elements and combinations with additional elements that were additionally developed by the project participants are in line with requirements of	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	with elements supplementary developed by the project participants in line with 36 above?	paragraph 36 above.		
Approved CDM methodology approach only_Paragraphs 38(a) – 38(d)_Not applicable				
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 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	No periods to overlap during the crediting period are expected.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	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 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?	CH_4 leakage, which is connected with the production, processing, liquefaction, transportation, regasification and distribution of natural gas used by the project and fossil fuels in the power system in the absence of the Project may take place. These emissions were not taken into account for simplification and conservatism.	OK	OK
40 (b)	Does the PDD provide a procedure for an ex ante estimate of leakage?	The PDD states that there isn't any leakage.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
Approved CDM methodology approach only_Paragraph 41_Not applicable				
Estimation of emission reductions or enhancements of net removals				
42	Does the PDD indicate which of the following 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	In the PDD the approach of estimation of emissions in the baseline scenario and in the project scenario is indicated. **CAR 34.** Please, check the numbering of tables in Section E of the PDD and make corresponding corrections.	**CAR 34**	OK
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 boundary)? (d) Emission reductions or enhancements of net removals adjusted by leakage?	PDD provides estimates of: (a) Emissions in the project scenario (Section E.1) (b) Leakage (Section E.2) (c) Emissions in the baseline scenario (Section E.4) (d) Emission reductions adjusted by leakage (Section E.6).	OK	OK
44	If the approach (b) in 42 is chosen, does	N/A	N/A	N/A

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	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) Emission reductions or enhancements of net removals adjusted by leakage?			
45	For both approaches in 42 (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 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	(a) Estimates in 43 are given on the periodic basis, in tonnes of CO_2 equivalent, on a source-by-source basis, before, during and after the crediting period. (b) The formulae used in PDD are consistent. (c) Key factors influencing baseline emissions and activity level of the project and risks associated with the project are taken into account, as appropriate. (d) Data sources used to calculate the estimates are clearly identified, reliable and transparent. (e) Emission factors are taken from identified sources. (f) Estimation in 43 is based on conservative assumptions and the most plausible scenario in a transparent manner. (g) Estimates in 43 are consistent throughout the PDD. (h) The annual average of estimated emission	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	Protocol? (b) Are the formulae used for calculating the 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? (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	reductions are calculated correctly (by dividing the total estimated emission reductions over the crediting period by the total months of the crediting period and multiplying by twelve).		

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	manner? (g) Are the estimates in 43 or 44 consistent throughout the PDD? (h) 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 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 de facto, does the PDD include an illustrative forecasted emissions or net removals calculation?	Baseline emission level is calculated using the specific approach employing elements of AM0999 approved methodology. Forecasted emissions calculation is clearly provided in the PDD.	OK	OK
Approved CDM methodology approach only_Paragraphs 47(a) – 47(b)_Not applicable				
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	The environmental impacts of the project have been sufficiently described	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	by the host Party?			
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 conclusion and all references to Supporting Documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party?	**CL 08.** Please, provide a reference to statutory and regulatory documents of Ukraine relating to the environmental impact assessment that are listed in Sections F.1. and F.2. of the PDD.	**CL 08**	OK
Stakeholder consultations				
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? (b) The nature of the comments? (c) A description on whether and how the comments have been addressed?	The community was informed via mass-media. Information concerning the compliance with environmental safety requirements was published in local "Yavorivshchyna" newspaper on 29/12/2004. All the comments received were positive. Information on Novoyavorivska TPP was published in the following mass media: - "Vholos" On-line News Agency ; - "Lvivska Poshta" On-line News Agency. No negative comments on the project were received.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
Determination regarding small-scale projects (additional elements for assessment)				
Applicable to all JI SSC projects				
Determination regarding land use, land-use change and forestry projects (additional/alternative elements for assessment)				
Determination regarding programmes of activities (additional/alternative elements for assessment)				

TABLE 2 RESOLUTION OF CORRECTIVE ACTION AND CLARIFICTION REQUESTS

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
CAR 01. Please, add information relating to the purpose of the project to Section A.2 of the PDD.	A.2	The purpose of the project is the reduction of anthropogenic greenhouse gas (GHG) emissions by implementation of combined heat and power production at the existing boiler house in Novoiavorivsk city, Lviv region, Ukraine. Refer to the PDD version 03.	Information relating to the purpose of the project was added. The issue is closed.
CAR 02. Please, provide information about the agreement between Biecas Investment Industries Limited and SPE "Energiya-Novoyavorivsk" LLC and the agreement between Biecas Investment Industries Limited and ORELAC GmBH.	A.2	07/07/2011 - Signing of the emission reductions purchase agreement relating to the joint implementation project by and between Biecas Investment Industries Limited and SPE "Energiya-Novoyavorivsk" LLC; 13/09/2011 – Signing of an assignment agreement between Biecas Investment Industries Limited and ORELAC GmBH;	The necessary information is provided in Section A.2 of the PDD version 03. The issue is closed.
CAR 03. Please, modify the table in Section	A.3	The table in Section A.3. of the PDD	The issue is closed based on

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
A.3. of the PDD in accordance with Guidelines for users of the JI PDD form (Version 04).		was modirfied.	necessary changes made.
CAR 04. Please, provide information whether the concept of the project corresponds to the existing modern practice.	A.4.2	The project uses technology that corresponds to the modern practice. The relevant information is presented in the PDD version 03.	The information is verified, the issue is closed.
CAR 05. Please, indicate whether the project uses the most modern technology that will lead to higher productivity.	A.4.2	The steam turbines have the total capacity of 10 MW and, despite their efficiency factor of a mere 25%, high efficiency can be reached upon operation thereof within the waste-heat loop. The advanced operation of GTU with steam boilers will ensure reliable power supply to meet on-site needs of the plant, which, in turn, will improve heat supply of consumers and reduce specific fuel consumption per unit of heat or electricity generated. Relevant information is provided in the PDD version 03.	The information was provided. The issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
CAR 06. Please, provide information on whether the project provides for replacement of project equipment.	A.4.2	The project doesn't provide for replacement of project equipment with any other one, as such heat and power generation corresponds to all modern requirements of such activity.	The information was provided in Section A.4.3. The issue is closed.
CAR 07. Please, provide information on whether the project activity requires special training.	A.4.2	All Novoyavorivska TPP staff maintaining the equipment will be trained according to the needs of operation of the new equipment.	The relevant information is provided. The issue is closed.
CAR 08. Please, provide information about the impact of project equipment on GHG emission reductions.	A.4.2	The Project will reduce GHG emissions by substitution of electricity from the Ukrainian power grid, which, in turn, will cause a decrease in fossil fuel (mainly coal) consumption by thermal power plants of Ukraine, and heat, which will be recovered with higher efficiency due to installation of modern thermal steam turbines and a gas turbine unit which will be integrated into the heat scheme of the	The information is provided in the relevant section, the issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
		boiler house.	
CAR 09. In Table 2. Section A.4.3. it is stated that the efficiency of steam turbines is 25%, while the other value of steam turbine efficiency equal to 30% is provided in the same section. Please, make the necessary corrections.	A.4.2	The efficiency of steam turbines is 25%. Necessary corrections were made in the PDD version 03.	The information is verified, the issue is closed.
CAR 10. Please, provide an explanation relating to Figure 5. in Section A.4.3.	A.4.2	Figure 5. in Section A.4.3. shows TPP thermal scheme. Explanation relating to the figure is provided in the PDD version 03.	The explanation is provided, the issue is closed.
CAR 11. Reference 8 in Section A.4.4. is incorrect. Please, provide the correct reference.	A.4.3	The correct reference is provided in Section A.4.3. of the PDD version 03.	The correct reference was provided. The issue is closed.
CAR 12. In Table 6, Section A.4.4.1. of the PDD average annual GHG emission reductions are calculated incorrectly. Please, make necessary corrections.	A.4.3	The average annual GHG emission reductions are 46 068 t CO2eq. Relevant corrections were made in the PDD version 03.	The issue is closed based on necessary changes made.
CAR 13. Emission reductions for 2008, stated in Table 6 of the PDD are different from the reductions specified in the	A.4.3	Emission reductions for 2008 are 34 974 t CO2eq.	The issue is closed based on necessary changes made.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
Supporting document 1.			
CAR 14. The project has no approval of the Host Party and the country – project participant.	19	Upon the completion of project determination, the Determination Report including this Determination Protocol and a list of reference documens will be submitted to the State Environmental Investment Agency of Ukraine in order to obtain a Letter of Approval. A Letter of Approval of Switzerland – the country – participant of the project - has not been obtained so far.	The issue will be closed after the Letters of Approval are issued by the Parties involved.
CAR 15. Please, state whether any elements of approved CDM methodologies were used for establishing the baseline.	22	The proposed project applies the JI specific approach using the elements of methodology AM0099 “Installation of a new natural gas fired gas turbine to an existing CHP plant” Version 01.0.0.	The information is provided. The issue is closed.
CAR 16. The reference to the Joint Implementation Supervisory Committee given	23	The correct reference was provided in Section B.1. of the PDD version 03.	The references were corrected, the issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
in Section B.1. is incorrect. Please, provide the correct reference.			
CAR 17. Reference to the methodology, elements of which are used to determine the baseline, is incorrect.	24	The correct reference was provided in Section B.1. of the PDD version 03.	Corrections were made. The issue is closed.
CAR 18. Please, specify the version of the document "Tool to determine the baseline efficiency of the thermal or electric energy generation systems".	24	"Tool to determine the baseline efficiency of the thermal or electric energy generation systems", version 01. Relevant information is provided in the PDD version 03.	Necessary information was provided. The issue is closed.
CAR 19. When determining the parameters of the baseline state the appropriate indexes necessary to indicate the baseline.	24	The appropriate indexes necessary to indicate the baseline were provided in the PDD version 03.	The issue is closed as corresponding changes were made.
CAR 20. Please, provide information on how the data necessary for determining the baseline will be stored.	24	Information on how the data necessary for determining the baseline will be stored was provided in the PDD version 03.	Necessary information was provided. The issue is closed.
CAR 21. Tables that describe the parameters used to set the baseline include parameters used to calculate emissions from natural gas, but the baseline doesn't provide for such emissions.	24	Information on parameters used to calculate emissions from natural gas is deleted.	Verified. The issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
CAR 22. Please, check whether the description of the parameters listed in the formulae and the description of the parameters in tables are identical.	24	Description of the parameters was verified. Relevant corrections were made.	The issue is closed as corresponding changes were made.
CAR 23. It is stated in Section B.2. that current Ukrainian system of electricity tariff formation does not include an investment component for the development of gas distribution networks. But the gas distribution networks aren't includedin the project boundary.	28	The current Ukrainian system of electricity tariff formation does not include an investment component for the development of energy sector. Corresponding corrections were made in the PDD version 03.	The issue is closed as corresponding corrections were made.
CAR 24. In the section that demonstrates additionality of the project the developer claims that the use of the discount rate that is determined by considering the average cost of capital (WACC) is recommended by the Tool for the demonstration and assessment of additionality (Version 06.0.0). However this document doesn't provide for such recommendations.	28	The use of the discount rate that is determined by considering the average cost of capital (WACC) is recommended in "Guidelines on the assessment of investment analysis ver.05". Corresponding corrections were made in the PDD version 03.	Corrections were made. The issue is closed.
CAR 25. Discount rate is calculated incorrectly. Please, make all necessary	28	Discount rate (WACC) is 14%. Corresponding corrections were	Necessary corrections are made, the issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
corrections.		made in the PDD version 03.	
CAR 26. The following is stated in Table 8. of the PDD - "Revenue from gas supply". But SPE "Energiya-Novoyavorivsk" LLC earns revenue by selling electricity and heat.	28	The mistake was corrected. Refer to the PDD version 03.	Necessary corrections are made, the issue is closed.
CAR 27. Please, state the starting and the end dates of the operational lifetime of the project.	34(b)	The actual average working life of new general-purpose equipment is estimated to be up to 25 years, therefore the project lifetime is deemed to be 25 years, or 300 months, from January 1, 2004, to December 31, 2028.	The information is provided, the issue is closed.
CAR 28. Please, state the end date of the crediting period.	34 (c)	The end date of the crediting period is 31/12/2008.	The information is provided, the issue is closed.
CAR 29. The name of Guidance which served as a basis for the monitoring plan is stated incorrectly.	35	The monitoring plan was developed in accordance with the "Guidance on criteria for baseline setting and monitoring" Version 03, paragraph 9 (a), namely the specific approach was selected for this JIP. Corresponding changes were made in	The issue is closed as corresponding changes were made.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
		the PDD version 03.	
CAR 30. Please, in a table containing data and parameters to be monitored throughout the crediting period specify all parameters to be included in this category.	36(a)	All relevant parameters were included in the table containing data and parameters to be monitored throughout the crediting period. Refer to the PDD version 03.	Corrections are accepted, the issue is closed.
CAR 31. Not all parameters are included in the table of data to be collected to monitor emissions from the project.	36(a)	All relevant parameters were included in the table containing data to be collected to monitor emissions from the project. Refer to the PDD version 03.	Corrections are accepted, the issue is closed.
CAR 32. Please, check the indexes in the formulae for GHG emission calculation.	36(a)	The indexes in the formulae for GHG emission calculation were verified. Corresponding changes were made.	The issue is closed as corresponding changes were made.
CAR 33. Please, add information regarding collecting and archiving of data in Section D.2.	36 (b) (iii)	Section D.2 contains information on the way of data collection and archiving.	The information is provided. The issue is closed.
CAR 34. Please, check the numbering of tables in Section E of the PDD and make	42	Mistakes in numbering were correction in the PDD version 03.	Corrections are made. The issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
corresponding corrections.			
CL 01. Please, provide information relating to the impact of the project activities on GHG emission reductions.	A.2	The project will also bring experience in implementation of modern cogeneration technologies and reduction of GHG emissions by substitution of electricity from the power system of Ukraine. Detailed information is provided in Section A.4.2 of the PDD.	The issue is closed as necessary explanations were provided.
CL 02.Please, explain why it is impossible to achieve emission reductions without such project.	A.4.3	In the absence of the Project, about 100 000 MWh/year of electricity would be generated by power plants that use fossil fuel and are connected to the Ukrainian power grid, which would cause annual increases in GHG emissions and worsening of the environmental situation in the region.	Clarification is provided. The issue is closed.
CL 03. Please, provide a reference to the laws mentioned in Section A.4.4 of the PDD.	A.4.3	The relevant reference was provided in Secton A.4.4 of the PDD version 03.	The reference was provided. The issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
CL 04. Please, provide a reference to the Law of Ukraine "On Electricity" in Section B.2.	28	The relevant reference was provided in Secton B.2 of the PDD version 03.	The reference was provided. The issue is closed.
CL 05. Please, specify a document that is the source for the calculation of the company's own capital.	28	Own capital cost is calculated as the sum of risk-free rate (3%), the risk premium on investment in own capital (6.5%) and country risk (6.75%), according to the "Default values for the expected return on equity".	Explanation is sufficient. The issue is closed.
CL 06. Please, check the numbering of formulae.	36 (f) (iii)	The numbering of formulae was verified. Relevant correction were made in the PDD version 03.	The issue is closed. The numbering was verified.
CL 07. Please, provide information on who determined the monitoring plan.	36 (j)	It is stated in Section D.4 of the PDD version 03 that ORLAC GmBH determined the monitoring pland of the project.	The issue is closed as relevant information was provided.
CL 08. Please, provide a reference to statutory and regulatory documents of Ukraine relating to the environmental impact assessment that are listed in Sections F.1. and F.2. of the PDD.	48 (b)	Reference to statutory and regulatory documents of Ukraine relating to the environmental impact assessment that are listed in Sections F.1. and F.2. of the PDD.	The reference was provided. The issue is closed.