DETERMINATION REPORT
JSC "DNIPROENERGO"

DETERMINATION OF THE RECONSTRUCTION OF THE UNITS AT THE "KRYVORIZKA TPP" OF THE "DNIPROENERGO" JSC

REPORT NO. UKRAINE-DET/0305/2011

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BUREAU VERITAS CERTIFICATION

Report No: UKRAINE-det/0305/2011

DETERMINATION REPORT: RECONSTRUCTION OF THE UNITS AT THE "KRYVORIZKA TPP" OF THE "DNIPROENERGO" JSC

Date of first issue:	Organizational unit:
16/08/2011	Bureau Veritas Certification Holding SAS
Client:	**Client ref.:**
JSC "Dniproenergo"	Yurii Magera

Summary:

Bureau Veritas Certification has made the determination of the "Reconstruction of the units at the "Kryvorizka TPP" of the "Dniproenergo" JSC" project of JSC "Dnirpoenergo" located in Zelenodolsk town, Apostolovsky district, Dnipropetrovsk region, Ukraine on the basis of UNFCCC criteria for the JI, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 6 of the Kyoto Protocol, the JI rules and modalities and the subsequent decisions by the JI Supervisory Committee, as well as the host country criteria.

The determination scope is defined as an independent and objective review of the project design document, the project's baseline study, monitoring plan and other relevant documents, and consisted of the following three phases: i) desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final determination report and opinion. The overall determination, from Contract Review to Determination Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

The first output of the determination process is a list of Clarification 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.:	Subject Group:
UKRAINE-det/0305/2011	JI

Project title:
Reconstruction of the units at the "Kryvorizka TPP" of the Dniproenergo" JSC

Work carried out by:
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Vyacheslav Yeriomin – Team member, Verifier
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Bureau Veritas Certification Holding SAS

Work approved by:
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Table of Contents *Page*

1 INTRODUCTION

JSC "Dniproenergo" has commissioned Bureau Veritas Certification to determine its JI project "Reconstruction of the units at the "Kryvorizka TPP" of the Dniproenergo" JSC" (hereafter called "the project") at Zelenodolsk town, Apostolovsky district, Dnipropetrovsk region, Ukraine.

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

1.1 Objective

The determination serves as project design verification and is a requirement of all projects. The determination is an independent third party assessment of the project design. In particular, the project's baseline, the monitoring plan (MP), and the project's compliance with relevant UNFCCC and host country criteria are 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 emission reduction units (ERUs).

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

1.2 Scope

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

The determination is not meant to provide any consulting towards the Client. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project design.

1.3 Determination team

The determination team consists of the following personnel:

Oleg Skoblyk
Bureau Veritas Certification Team Leader, Climate Change Verifier

Vyacheslav Yeriomin
Bureau Veritas Certification Climate Change Verifier

Denis Pischalov

Bureau Veritas Certification financial specialist

This determination report was reviewed by:

Leonid Yaskin
Bureau Veritas Certification, Internal Technical Reviewer

2 METHODOLOGY

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

In order to ensure transparency, a determination protocol was customized for the project, according to the version 01 of the Joint Implementation Determination and Verification Manual, issued by the Joint Implementation Supervisory Committee at its 19 meeting on 04/12/2009. The protocol shows, in a transparent manner, criteria (requirements), means of determination and the results from determining the identified criteria. The determination protocol serves the following purposes:

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

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

2.1 Review of Documents

The Project Design Document (PDD) submitted by "ELTA-ECO" LLC 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, "ELTA-ECO" LLC revised the PDD and resubmitted it on 31/01/2012.

The determination findings presented in this report relate to the project as described in the PDD versions 1.0, 1.1, 1.2, 1.3, 1.3.1.

2.2 Follow-up Interviews

On 19/07/2011 Bureau Veritas Certification performed on-site interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of JSC "Dniproenergo" were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
JSC "Dniproenergo"	• Project history • Project approach • Project boundary • Implementation schedule • Organizational structure • Responsibilities and authorities • Training of personnel • Quality management procedures and technology • Rehabilitation/Implementation of equipment (records) • Metering equipment control • Metering record keeping system, database • Technical documentation • Monitoring plan and procedures • Permits and licenses • Local stakeholder's response.
"ELTA-ECO" LLC	• Baseline methodology • Monitoring plan • Additionality proofs • Calculation of emission reduction.

2.3 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the determination is to raise the requests for corrective actions and clarification and any other outstanding issues that needed to be clarified for Bureau Veritas Certification positive conclusion on the project design.

If the determination team, in assessing the PDD and supporting documents, identifies issues that need to be corrected, clarified or improved with regard to JI project requirements, it will raise these issues and inform the project participants of these issues in the form of:

(a) Corrective action request (CAR), requesting the project participants to correct a mistake in the published PDD that is not in accordance with the (technical) process used for the project or relevant JI project requirement or that shows any other logical flaw;

(b) Clarification request (CL), requesting the project participants to provide additional information for the determination team to assess compliance with the JI project requirement in question;

(c) Forward action request (FAR), informing the project participants of an issue, relating to project implementation but not project design, that needs to be reviewed during the first verification of the project.

The determination team will make an objective assessment as to whether the actions taken by the project participants, if any, satisfactorily resolve the issues raised, if any, and should conclude its findings of the determination.

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

3 PROJECT DESCRIPTION

The Kryvorizka TPP is a structure unit of the "Dniproenergo" JSC. This TPP is one of the largest in Ukraine.
The overall project installed capacity of the TPP was 3000 MW (10 generating units 300 MW each).
In 1991 the installed capacity of the energy units of the TPP were reduced from 300 MW to 282 MW due to physical deterioration of the equipment. The generating units were constructed for the Ash-type coal combustion with the addition of the natural gas and heavy fuel oil.
Project foresees modernization of the main and the auxiliary equipment of the all power generating units of the TPP. It includes replacement of the control, automatic, and electro-technical systems, modernization of the boiler equipment, the outdated turbine equipment, the electric separation system, the cooling system, etc.
The thermal energy delivery in project scenario will remain the same as in the baseline scenario.
The main objective of the Project is to make the existing power equipment of the TPP more efficient and reliable. The increased efficiency will provide a higher output and lower fuel consumption.
The increased capacity of the TPP is due to the better efficiency of the existing equipment. It will reduce the fuel consumption per unit of the energy produced by the station. Thus the GHG emission per the energy unit produced will be lowered.
The detailed description of the rehabilitation:

I. Turbine equipment
1. Steam turbine
- Cylinder cases parts modernization: inside and outside cases replacement of the high and low pressure cylinders; nozzle block, diaphragms, end and diaphragm seals replacement;
- Replacement of the end seals;
- Reconstruction of the high and low pressure regeneration systems;
- Rotor modernization: replacement of the blades, bands, disks and end sealing bushes;
- Overhaul and replacement of the supporting and thrust bearings;
- Barring gear replacement;
- Modernization of the turbine steam-distribution system: replacement of the high pressure cutout valve, high and middle pressure regulative valve, shut-off valves, valve safety devices and drivers, regulating diaphragms, pipelines and fittings;
- Reconstruction of the steam turbine automatic regulation hydraulic system into electro-hydraulic system;
- Overhaul and replacement of the safeguard regulation system;
- Modernization of the drainage-scavenging system;
- Modernization of the oil system: oil cooler repair, oil container and oil-duck replacement, bearing case and oil fittings replacement, overhaul of the working and broken oil pumps of the oil system;
- Modernization of the condensing system: condenser pump and starting ejector pump replacement, pipelines and fittings replacement;
- Circulating flumes replacement with condenser filter installation;
- Modernization of the regeneration system and of the heating unit: low pressure heater
- Replacement, discharge pump of the low pressure heater system replacement, pipelines and fittings replacement;
- Overhaul and repair of the cooler generator system: circulating pump gas coolers chiller replacement, gas cooler generator pump replacement, service water pump replacement;
- Installation of the rotor hydraulic system.
2. Steam-pipelines
- Overhaul and repairs.
3. Pumping equipment
- Replacement of the inner casing of the feed pump;
- Overhaul and repair of all pumping equipment.
4. Fittings
- Overhaul and in case of need – repair and replacement of the fittings.
5. Insulation
- Overhaul and rehabilitation of the high and middle pressure equipment insulation;
- Repair of the feed-water pipeline insulation.
6. Control system
- Equipping of the turbine with the electronic control, monitor and regulation system.

7. Electric filters
- Replacement of the electrodes;
- Replacement of the gas distribution gates;
- Replacement of the filter control system;
- Carriage and bracket girder replacement;
- Bearing insulator and insulator boxes replacement;
- High-voltage cable replacement;
- Revision of the thermal insulation and anti-corrosion protection of the cases metal construction renewal;
- Bunkers and cases defects removal;
- Ashes level indicator installation;
- Fire-warning and fire-fighting system installation;
- Overhaul and repair of the filter system.

II. Boiler equipment
- Heating surface modernization in the boiler fire-chamber and convection shaft;
- Boiler case replacement;
- Boiler shields replacement;
- Replacement of the boiler drum with separation equipment;
- Fire and burner device repair;
- Repair of different equipment in the boiler unit: repair of the separator, injection attemperator, reduction-cooler equipment, main safety valves, cyclones, etc.;
- Modernization of the main equipment of the boiler powder-gas-air track: replacement of the oil system rattler, dust-system separators repair, mill fan and hot blast fans replacement, draft system replacement,
- Repair of the powder-gas-air pipelines parts and of the separate units;
- Overhaul and repair of the hydraulic ash removal system;
- Replacement of the water-steam circuit pipelines;
- Modernization of the slag-removal equipment;
- Total replacement of the water-wall tubes and water economizer;
- Overhaul and repair of the live steam pipelines, cool and hot reheat pipelines;
- Overhead-bearing system replacement.

III. Electric generator and electric equipment
- Replacement of the stator winding;
- Reconstruction or replacement of the rotor;
- Modernization of the cooling system of the generator with the replacement of the gas condensers;
- Modernization of the unit transformer;
- Modernization of the cooling system of the transformer;
- Reconstruction of the generator conduction;
- Reconstruction of the generator thyristor excitation system;
- Emergency event registrar installation;
- Reconstruction of the power gate;

- Storage battery modernization;
- Installation of the diesel generator for own requirements;
- Modernization of the electric motors of the blow fans, mills, hot blast fans, induced-draught fans, etc.;
- Frequent electric driver installation;
- Reconstruction of the electric raceways, replacement of the power and control cable;
- Reconstruction of the illumination system of the all sections.

In 2009 - 2010 the advanced repairs of the Units #7, 8, 9, 10, 11, 13, and 14 were implemented at the TPP as the Servicing and Preparation for the Reconstruction. The main packages of measures of these repairs are (more detailed explanation will be provided in the Monitoring Report for this period):

- the repairs of the heating surfaces of the boiler units:
- the inspection and repairs of the High-, Mid-, and Low-Pressure Cylinders;
- the control and the replacement of the fittings;
- the inspection and the replacement of the pipelines;
- the repairs and the replacement of the burners at the boiler unit;
- the advanced repairs of the pumping equipment;
- the control and the replacement of the blades of the turbine;
- the repairs of the dust system;
- the repairs of the generator winding.

The identified areas of concern as to the project description, project participants' response and BVC's conclusion are described in Appendix A, Table 2 (refer to CAR01-CAR06).

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 and Corrective Action Requests are stated, where applicable, in the following sections and are further documented in the Determination Protocol in Appendix A. The determination of the Project resulted in 24 Corrective Action Requests and 3 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 has already received Letter of Endorsement #10/23/7 on the JI project "Reconstruction of the power units at the "Kryvorizka TPP" of

the "Dniproenergo" JSC." dated 05/01/2011 issued by National Environmental Investment Agency of Ukraine.
Proposed project was approved by both Parties Involved.
Letter of Approval #2752/23/7 dated 26/09/2012 has been issued by State Environment Investment agency of Ukraine.
Letter of Approval #2012JI51 dated 18/10/2012 has been issued by Ministry of Economic, Agriculture and Development of the Netherlands

Bureau Veritas Certification received this letter from the project participants and does not doubt its authenticity.

The identified areas of concern as to the project approvals, project participants' response and BVC's conclusion are described in Appendix A, Table 2 (refer to CAR07).

4.2 Authorization of project participants by Parties involved (21)

Next legal entities are listed in the PDD version 1.3.1 dated 31/01/2012 as project participants:

- PJSC "Dniproenergo" from Ukraine, the Party Involved;
- ING Bank N.V. from the Netherlands, the Party-buyer of ERU.

Contact information on project participants are listed in the Annex 1 of the PDD.

The official authorization of each legal entity listed as project participant in the PDD by Parties involved is provided in the written project approvals (refer to 4.1 above).

The identified areas of concern as to the authorization of project participants, project participants' response and BVC's conclusion are described in Appendix A, Table 2 (refer to CAR08).

4.3 Baseline setting (22-26)

The PDD explicitly indicates that methodology for baseline setting and monitoring developed in accordance with appendix B of the JI guidelines (hereinafter referred to as JI specific approach) was the selected approach for identifying the baseline.
On this basis the approach for baseline and monitoring was developed, which can be applied to JI projects in accordance with Annex B of JI Guidelines.

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

a) Identifying and listing alternatives to the project activity on the basis of conservative assumptions and taking into account uncertainties.

b) Identifying the most plausible alternatives considering relevant sectoral policies and circumstances, such as economic situation in the energetic sector in Ukraine and other key factors that may affect the baseline. The baseline is identified by screening of the alternatives based on the technological and economic considerations for the project developer, as well as on the prevailing technologies and practices in Ukrainian energy industry at the time of the investment decision.

The alternatives have been identified based on national practice and reasonable assumptions with regard to the sectoral legislation and reform, economic situation in the country, availability of raw materials and fuel as well as technologies and logistics etc.

Alternative #1 Proposed project activity will be implemented without JI registration. Only a JI registration can push the rehabilitation forward and allow the Project to be implemented. It also can stimulate the project owner to provide this kind of projects on the other TPPs

Alternative #2 Reconstruction of boiler equipment without reconstruction of turbines and generators will allow the Project Owner to save financial resources for the Project implementation and the efficiency of the boiler part of the Power-Generating Unit will be improved. But, at the same time, the boiler cannot be rehabilitated without getting the whole Power-Generating Unit off the operation. It means that loses will be the same as for the whole unit rehabilitation. And the efficiency of the unit after this kind of partial rehabilitation will be significantly lower then after the whole Unit rehabilitation. So, the *Alternative 2* is technically possible, but not reasonable and feasible.

Alternative #3 Reconstruction of steam turbines without reconstruction of boilers and generators. The *Alternative #3* is not feasible for the same reasons as the *Alternatives #2*.

Alternative #4 Rehabilitation of electric generators without reconstruction of boilers and steam turbines. The *Alternative #4* is not feasible for the same reasons as the *Alternatives #2, #3*.

Alternative #5 Servicing of the equipment, optimization of work regimes, fuel parameters optimization without rehabilitation. *Alternative #5* allows saving the finances in the short-term perspective but the effectiveness of these measures without the rehabilitation will be limited. Optimisation of the working regimes is limited by the technical condition of the equipment. Without the rehabilitation, the work at the optimal regime and

manoeuvring is possible in a very small range. Consequently, it results in the fuel consumption and GHG emission increase. Thus, the *Alternative 5* is only possible in a short term perspective and is not feasible or reasonable.

Alternative #6 Build new generating units. The cost of the new power generating plant with the same approximate capacity would cost around 1 000 USD/kW10. It means that the construction of the new TPP with the same loading capacity as Kryvorizka TPP will cost around 3 Billion USD. The financial barrier eliminates the *Alternative 6*.

Alternative #7 Continuation of existing situation without working process optimization and any investment in rehabilitation of equipment. The Alternative #1 is the most likely baseline scenario for a number of reasons, for instance the required quantity of electric energy can be produced without costly and large-scale reconstruction as well as change of historical manufacturing practice and logistics. The above suggests that the Alternative #1 would be the most plausible and credible alternative and it represents the baseline scenario for the proposed

All proposed Alternatives are in consistency with mandatory applicable laws and regulations.

The TPP supply electric energy for Ukraine national grid and heat energy that supply to local consumers for household heating. Project developer excludes amount of fuel for heat producing from baseline calculation. Fuel amount division between electricity production and heat supply is a technical procedure approved by Ukraine Ministry of Fuel and Power. Power plant personnel use this procedure to calculate specific fuel consumption for 1 MW and 1 GCal. Project developer in the Annex 2 of PDD provides detailed description of Specific Fuel Rate calculations.

Project developer uses values of gas, coal and fuel oil emission factors for baseline calculations in accordance with IPCC 1996 Guidelines for National Greenhouse Gas Inventories and the National GHG Inventory Report of Ukraine for 1990 – 2009 years

All explanations, descriptions and analyses pertaining to the baseline in the PDD were found adequate and the baseline is identified appropriately.

The identified areas of concern as to the baseline setting, project participants' response and BVC's conclusion are described in Appendix A, Table 2 (refer to CAR09-CAR10).

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 in paragraph 2 (c) of the annex I to the "Guidance on criteria for baseline setting and monitoring". All explanations, descriptions and analyses are made in accordance with the selected tool.

The PDD provides a justification of the applicability of the approach. Additionality proofs are provided. Seven alternative scenarios to the project activity were identified and proven to be in compliance with mandatory legislation and regulations taking into account the enforcement in the region and Ukraine. Project developer provides barrier and common practice analysis. Seventh alternative was chosen as baseline scenario.

So, the program of Kryvorizka TPP reconstruction is the program that has no predecessors in Ukraine and could not be considered as a common practice.

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, Table 2 (refer to CAR11-CAR12).

4.5 Project boundary (32-33)

Project boundaries include the sources of all significant greenhouse gas emissions that are under control of the project participants and connected with project activity.
Project boundaries include the power generating equipment (boilers, turbines, generators, relevant auxiliary and measuring equipment).

Based on the above assessment, the AIE hereby confirms that the identified boundary and the selected sources and gases are justified for the project activity.

The identified areas of concern as to the project boundary and BVC's conclusion are described in Appendix A, Table 2 (refer to CAR13).

4.6 Crediting period (34)

The PDD states 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, and the starting date is 28/12/2006, which is after the beginning of 2000.

The PDD states the expected operational lifetime of the project in years and months, which is 20 years or 240 months.

The PDD states the length of the crediting period in years and months, which is 4 years or 48 months, and its starting date as 01/01/2009, which is on the date the first emission reductions or enhancements of net removals are generated by the project.

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

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

The identified areas of concern as to the crediting period, project participants' response and BVC's conclusion are described in Appendix A, Table 2 (refer to CAR14, CL01-CL03).

4.7 Monitoring plan (35-39)

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

The monitoring plan describes all relevant factors and key characteristics that will be monitored, and the period in which they will be monitored, in particular also all decisive factors for the control and reporting of project performance, such as statistics reporting forms; quality control (QC) and quality assurance (QA) procedures; detailed guidelines regulating the monitoring procedures and responsibilities; the Investment Plan giving a schedule of construction activities; the operational and management structure that will be applied in 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. are clearly connected with the effect to be measured), and that provide a transparent picture of the emission reductions or enhancements of net removals to be monitored such as value of produced electricity, quantity of gas, coal, fuel oil consumed, emission factor for each kind of fuel consumption, oxidation factor for each fuel.

The monitoring plan explicitly and clearly distinguishes:

(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, such as oxidation factors for coal, natural gas, fuel oil, emission factors for each fuel, Specific fuel Rate of the power plant in the baseline scenario.

(ii) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), but that are not already available at the stage of determination, which are absent.

(iii) Data and parameters that are monitored throughout the crediting period, such as Specific Fuel Rate, the share of fuel consumed for energy production, the amount of the electricity supplied to the grid.

The monitoring plan describes the methods employed for data monitoring (including its frequency) and recording, such as direct measurement with scales; gas, water, steam and electricity meters; calculations with different recording frequency such as continuously or monthly and electronic or paper recording method.

The monitoring plan elaborates 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.

Emission reduction is being calculated as follows:

$ER_y = BE_y - PE_y$

Where:
ER_y – emission reductions achieved by the project activity in year *y,* tonnes of CO2 equivalent;
BE_y – baseline CO2 emission in year *y,* tonnes of CO2 equivalent;
PE_y – project CO2 emission in year *y,* tonnes of CO2 equivalent.

Baseline emission is being calculated as follows

$BE_y = \Sigma\ (SFR_b \times SF_{iy} \times OXID_i \times EFi) \times AELS_y$

Where:
BE_y – Baseline emission in year *y,* tonnes of CO2 equivalent;
SFR_b – specific fuel rate of the power plant in the Baseline Scenario, GJ/MWh;

SF_{iy} – share of fuel *i* (coal, natural gas or a heavy fuel oil), consumed by the project activity power plant in year *y* in energy units;
$OXID_i$ – oxidation factor of the fuel *i* in year *y*;
EF_i - emission factor of the fuel *i* consumed in year *y,* tonnes of CO2/GJ;
$AELS_y$ – the amount of the electricity supplied to the electricity grid in year *y*, MWh.

$$SFRb = \frac{\sum_{i=1}^{n} SFRyi}{n} \quad ,$$

Where:

SFRb – a specific fuel rate of the power plant in the baseline scenario, GJ/MWh;

SFRyi – a specific fuel rate of the power plant in years, prior to the Project Implementation, GJ/MWh;

n - number of years

Project emission is being calculated as follows:

$$PE_y = \Sigma(SFR_y \times SF_{iy} \times OXID_{i,y} \times EF_{i,y}) \times AELS_y,$$

Where:
PE_y – Project emission in year *y*, tonnes of CO2 equivalent;
SFR_y – specific fuel rate of the station in year *y*, GJ/MWh;
SF_{iy} – share of fuel *i* (coal, natural gas or a heavy fuel oil), consumed in year *y*;
$OXID_{i,y}$ – oxidation factor of the fuel *i*;
$EF_{i,y}$ – emission factor of the fuel i consumed, tonnes of CO2eq/GJ;

$$SFRy = \frac{\sum (Fiy * NCViy)}{7} / AELSy$$

Where

SFRy – specific fuel rate of the power plant in year *y,* t.e.f./MWh. (GJ/MWh);

Fiy – the amount of the fuel *i* consumed by the power plant for the electricity production in year *y,* tons (th.m3);

NCViy – net caloric value of the fuel *i* in year *y*, GCal/ton(th.m3);

7 - the net caloric value of one ton of the equivalent fuel, GCal;

AELSy - annual energy supply of the power plant in year *y,* MWh.

The monitoring plan presents the quality assurance and control procedures for the monitoring process which are described in the section D.2 of the PDD. 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. The data required to monitor JI project is routinely collected within the normal operations of the Kryvorizka TPP therefore JI monitoring is integral part of routine monitoring.

The monitoring plan will be implemented by different specialists of Kryvorizka TPP under supervision of Kryvorizka TPPs director. Head of Production-Technical Department has overall project responsibility.
Monitoring information is completed in:

- shift reports, based on workbooks in electricity, boiler-turbine, fuel-transport departments, chemical laboratory
- day reports, completed by heads of departments
- 3-tech month, quarter and yearly forms based on department's day reports. 3-tech forms completed by technical-producing department head.

Existing TPP's equipment isn't principally changed during project implementation. So, special trainings for personnel involved in the project is not needed. Routine professional trainings will be provided to TPPs staff by Health and Safety Department and Environmental Safety Department.

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

The monitoring plan provides, in tabular form, a complete compilation of the data 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, IPCC, 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, Table 2 (refer to CAR15-CAR21).

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, such as CO_2, CH_4, N_2O leakages.

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

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

The PDD provides the ex ante estimates of:

(a) Emissions or net removals for the project scenario (within the project boundary), which are 25 365 933 tonnes of CO2eq for period 01/01/2009-31/12/2012 and 147 622 608 tonnes of CO2eq for period 01/01/2013-31/12/2028;

(b) Leakage, as applicable, which are absent;

(c) Emissions or net removals for the baseline scenario (within the project boundary), which are 25 666 374 tonnes of CO2eq for period 01/01/2009-31/12/2012 and 156 274 818 tonnes of CO2eq for period 01/01/2013-31/12/2028;

(d) Emission reductions or enhancements of net removals adjusted by leakage (based on (a)-(c) above), which are 300 441 tonnes of CO2eq for period 01/01/2009-31/12/2012 and 8 652 210 tonnes of CO2eq for period 01/01/2013-31/12/2028.

The estimates referred to above are given:

(a) On annual basis;

(b) From 01/01/2009 to 31/12/2012, covering the whole crediting period;

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

(d) For CO2

(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 formulas used for calculating the estimates referred above are the same as those used for project monitoring and described in the section 4.7 above. All formulas are consistent throughout the PDD.

For calculating the estimates referred to above, key factors, e.g. energy prices and availability, market development 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 were taken into account, as appropriate.

Data sources used for calculating the estimates referred to above, such as feasibility studies, production forecasts, actual historical monitored data are clearly identified, reliable and transparent.

Emission factors, such as emission factor for electricity consumption, emission factors for natural gas, coal, heavy fuel oil 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 or enhancements of net removals over the crediting period is 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.

After the ITR request project developer corrected PDD and ERUs calculations. ERUs calculation data was brought into line with the state report form 3-tech.

The identified areas of concern as to the estimation of emission reductions or enhancements of net removals, project participants' response and BVC's conclusion are described in Appendix A, Table 2 (refer to CAR22).

4.10 Environmental impacts (48)

The PDD lists and attaches documentation on the analysis of the environmental impacts of the project, including transboundary impacts, in accordance with procedures as determined by the host Party, such as Technical and Economical Assessment of the Project, Explanatory Note "Environmental Impact Assessment of the Kryvorizka TPP Unit № 3

Rehabilitation Project", prepared by the SRI "Teploenergoproekt" of the "Donbassenergo" JSC in 2010

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, if the analysis referred to above indicates that the environmental impacts are considered significant by the project participants or the host Party.

The identified areas of concern as to the environmental impacts, project participants' response and BVC's conclusion are described in Appendix A, Table 2 (refer to CAR23).

4.11 Stakeholder consultation (49)

The Project was presented to the Government of Ukraine and to the Local Authorities as a Project Idea and, later, as the Technical Documentation. The Government and Local Authorities have approved the Project. The Letter of Endorsement has been received from the National Environmental Investment Agency of Ukraine.
The information concerning the Project was published in the local newspaper "Apostolivsky Novyny" #41 dated 21-27/05/07.
No comments were obtained.

The identified areas of concern as to the stakeholder consultation, project participants' response and BVC's conclusion are described in Appendix A, Table 2 (refer to CAR24).

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 "Reconstruction of the units at the "Kryvorizka TPP" of the "Dniproenergo" JSC", Project in Zelenodolsk Town, Dnipropetrovsk Region, Ukraine. The determination was performed on the basis of UNFCCC criteria and host country criteria and also on the criteria given to provide for consistent project operations, monitoring and reporting.

The determination consisted of the following three phases: i) a desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) the resolution of outstanding issues and the issuance of the final determination report and opinion.

Project participant/s used the latest tool for demonstration of the additionality. In line with this tool, the PDD provides barrier analysis and 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 review of the project design documentation version 1.3.1 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 "Elta-Eco" LLC that relate directly to the GHG components of the project.

/1/ Project Design Document "Reconstruction of the units at the "Kryvorizka TPP" of the "Dniproenergo" JSC." version 1.0 dated 12/05/2011

/2/ Project Design Document "Reconstruction of the units at the "Kryvorizka TPP" of the "Dniproenergo" JSC." version 1.1 dated 12/07/2011

/3/ Project Design Document "Reconstruction of the units at the "Kryvorizka TPP" of the "Dniproenergo" JSC." version 1.2 dated 13/09/2011

/4/ Project Design Document "Reconstruction of the units at the "Kryvorizka TPP" of the "Dniproenergo" JSC." version 1.3 dated 16/11/2011

/5/ Project Design Document "Reconstruction of the units at the "Kryvorizka TPP" of the "Dniproenergo" JSC." version 1.3.1 dated 31/01/2012

/6/ Letter of Endorsement #10/23/7 dated 05/01/2011 issued by National Environmental Agency of Ukraine

/7/ Letter of Approval #2752/23/7 dated 26/09/2012 issued by State Environment Investment Agency of Ukraine

/8/ Letter of Approval #2012JI51 dated 18/10/2012 issued by Ministry of Economic Affairs, Agriculture and Development of the Kingdom Netherlands

/9/ Excel file "calculations Kriv (Appendix 1)"

/10/ Economical model Excel file "fin anal KrTPP"

Category 2 Documents:

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

/1/ Positive conclusion #00-0181-11ПБ of the state general expert examination on "Technical Reconstruction of Generating Unit #9 at Kryvorizka TPP. Feasibility Study"

/2/ Positive conclusion #00-0097-11ПБ of the state general expert examination on "Technical Reconstruction of Generating Unit #5 at Kryvorizka TPP. Feasibility Study"

/3/ Positive conclusion #00-0013-11ПБ of the state general expert examination on "Technical Reconstruction of Generating Unit #1 at Kryvorizka TPP. Feasibility Study"

/4/ Fuel data calculation chart for 2011

/5/ Combusted coal analysis results dated 01/07-05/07/2011

/6/ Combusted coal analysis results dated 11/07-15/07/2011

/7/ Protocol #23. Heavy fuel oil analysis dated 21/04-25/04/2011

/8/ Combusted coal analysis results dated 06/02-10/02/2011

/9/ Protocol #12. Heavy fuel oil analysis dated 26/02-28/02/2011

/10/ Protocol #10. Heavy fuel oil analysis dated 16/02-20/02/2011
/11/ Combusted coal analysis results dated 16/01-20/01/2011
/12/ Attestation certificate #ПЄ 0075/2010 on Kryvorizka TPP chemical laboratory, issued 08/10/2010, valid till 08/10/2013
/13/ Annex to the Attestation certificate #ПЄ 0075/2010 on Kryvorizka TPP chemical laboratory
/14/ Chemical laboratory passport
/15/ Logbook on fuel analytical analyses at Kryvorizska TPP, started 29/12/2009, ended 09/01/2010
/16/ Logbook on fuel analytical analyses at Kryvorizska TPP, started 31/10/2009, ended 26/11/2009
/17/ Logbook on fuel analytical analyses at Kryvorizska TPP, started 28/04/2008, ended 06/06/2008
/18/ Logbook on fuel analytical analyses at Kryvorizska TPP, started 22/08/2006, ended 30/09/2006
/19/ Calibration certificate on belt-conveyer weighers СВЕДА ВК-230, serial #151
/20/ Calibration certificate on belt-conveyer weighers СВЕДА ВК-230, serial #152
/21/ Calibration certificate on belt-conveyer weighers СВЕДА ВК-230, serial #116
/22/ Calibration (replacement) schedule of commercial power meters at Kryvorizska TPP for 2011
/23/ Statement on calibration (replacement) of power meters type SL761BO71, serial ##36128072, 33001540
/24/ Statement on calibration (replacement) of power meters type SL761BO71, serial ##36128082, 33001530
/25/ Statement on calibration (replacement) of power meters type SL761BO71, serial ##36128052, 33001501
/26/ Statement on calibration (replacement) of power meters type SL761BO71, serial ##36128061, 33001522
/27/ Statement on calibration (replacement) of power meters type SL761BO71, serial ##36128091, 33001512
/28/ Statement on calibration (replacement) of power meters type SL761BO71, serial ##36128062, 33001503
/29/ Statement on calibration (replacement) of power meters type SL761BO71, serial ##36128081, 33001523
/30/ Statement on calibration (replacement) of power meters type SL761BO71, serial ##36128071, 33001534
/31/ Statement on calibration (replacement) of power meters type SL761BO71, serial ##36128043, 33001521
/32/ Statement on sealing (replacement) of power meters type SL761BO71, serial ##36128061, 33001522
/33/ Statement on sealing (replacement) of power meters type SL761BO71, serial ##36128091, 33001512
/34/ Statement on sealing (replacement) of power meters type SL761BO71, serial ##36128062, 33001503
/35/ Statement on sealing (replacement) of power meters type SL761BO71, serial ##36128082, 33001530
/36/ Statement on sealing (replacement) of power meters type SL761BO71, serial

##36128072, 33001540

/37/ Statement on sealing (replacement) of power meters type SL761BO71, serial ##36128043, 33001521

/38/ Statement on sealing (replacement) of power meters type SL761BO71, serial ##36128081, 33001523

/39/ Statement on sealing (replacement) of power meters type SL761BO71, serial ##36128051, 33001501

/40/ Statement on sealing (replacement) of power meters type SL761BO71, serial ##36128071, 33001534

/41/ Protocol on parameterization calibration of meters type SL761BO71, serial ##36128062, 33001503

/42/ Protocol on parameterization calibration of meters type SL761BO71, serial ##36128091, 33001512

/43/ Protocol on parameterization calibration of meters type SL761BO71, serial ##36128081, 33001523

/44/ Protocol on parameterization calibration of meters type SL761BO71, serial ##36128071, 33001534

/45/ Statement on calibration (replacement) of power meters type SL761BO71, serial ##36130070, 33002588

/46/ Statement on calibration (replacement) of power meters type SL761BO71, serial ##36130078, 33002627

/47/ Statement on calibration (replacement) of power meters type SL761BO71, serial ##36120205, 33002606

/48/ Statement on calibration (replacement) of power meters type SL761BO71, serial ##36118887, 33002590

/49/ Statement on calibration (replacement) of power meters type SL761BO71, serial ##36130068, 33002612

/50/ Statement on calibration (replacement) of power meters type SL761BO71, serial ##36130087, 33002597

/51/ Statement on calibration (replacement) of power meters type SL761BO71, serial ##36130067, 33002625

/52/ Statement on calibration (replacement) of power meters type SL761BO71, serial ##36118895, 33002609

/53/ Statement on calibration (replacement) of power meters type SL761BO71, serial ##36130066, 33002595

/54/ Statement on calibration (replacement) of power meters type SL761BO71, serial ##36130076, 33002607

/55/ Passport and plant calibration certificates on meters type SL761BO71, serial ##36128092, 36130076

/56/ Passport and plant calibration certificates on meters type SL761BO71, serial ##36128052, 36130066

/57/ Passport and plant calibration certificates on meters type SL761BO71, serial ##36128895, 36130070

/58/ Passport and plant calibration certificates on meters type SL761BO71, serial ##36130069, 36130087

/59/ Passport and plant calibration certificates on meters type SL761BO71, serial ##36118887, 36130068

/60/ Passport and plant calibration certificates on meters type SL761BO71, serial ##36120205, 36130078
/61/ Passport and plant calibration certificates on meters type SL761BO71, serial ##36128081, 36128061
/62/ Passport and plant calibration certificates on meters type SL761BO71, serial ##36128091, 36128072
/63/ Passport and plant calibration certificates on meters type SL761BO71, serial ##36128082, 36128071
/64/ Passport and plant calibration certificates on meters type SL761BO71, serial ##36128062, 36128043
/65/ Passport and plant calibration certificates on meters type SL761BO71, serial ##36126040, 36130434
/66/ Passport and plant calibration certificates on meters type SL761BO71, serial ##36126019, 36126020
/67/ Passport and plant calibration certificates on meters type SL761BO71, serial ##36126009, 33002607
/68/ Passport and plant calibration certificates on meters type SL761BO71, serial ##33002595, 33002607
/69/ Passport and plant calibration certificates on meters type SL761BO71, serial ##33002625, 33002609
/70/ Passport and plant calibration certificates on meters type SL761BO71, serial ##33002597, 33002616
/71/ Passport and plant calibration certificates on meters type SL761BO71, serial ##33002590, 33001503
/72/ Passport and plant calibration certificates on meters type SL761BO71, serial ##33002606, 33002627
/73/ Passport and plant calibration certificates on meters type SL761BO71, serial ##33002528, 33001500
/74/ Passport and plant calibration certificates on meters type SL761BO71, serial ##33001521, 33001524
/75/ Passport and plant calibration certificates on meters type SL761BO71, serial ##33001523, 33001501
/76/ Passport and plant calibration certificates on meters type SL761BO71, serial ##33001522, 33001512
/77/ Passport and plant calibration certificates on meters type SL761BO71, serial ##33001540, 33001530
/78/ Photo – Power meter SL761BO71, serial #36132288
/79/ Photo – Power meter SL761BO71, serial #36130060
/80/ Photo – Power meter SL761BO71, serial #36130052
/81/ Photo – Power meter SL761BO71, serial #36132301
/82/ Photo – Power meter SL761BO71, serial #36132320
/83/ Photo – Power meter SL761BO71, serial #33003482
/84/ Photo – Power meter SL761BO71, serial #36130052
/85/ Photo – Power meter SL761BO71, serial #36130047
/86/ Photo – Power meter SL761BO71, serial #36132290
/87/ Photo – Power meter SL761BO71, serial #36132309
/88/ Photo – Power meter SL761BO71, serial #36132348

/89/ Photo – Power meter SL761BO71, serial #36132398
/90/ Photo – Power meter SL761BO71, serial #36132318
/91/ Photo – Power meter SL761BO71, serial #36132296
/92/ Photo – Power meter SL761BO71, serial #36132308
/93/ Photo – Power meter SL761BO71, serial #36130056
/94/ Photo – Power meter SL761BO71, serial #36133490
/95/ Photo – Power meter SL761BO71, serial #36128043
/96/ Photo – Power meter SL761BO71, serial #36128071
/97/ Photo – Power meter SL761BO71, serial #33001501
/98/ Photo – Power meter SL761BO71, serial #36128052
/99/ Photo – Power meter SL761BO71, serial #36128072
/100/ Photo – Power meter SL761BO71, serial #33001540
/101/ Photo – Power meter SL761BO71, serial #33001503
/102/ Photo – Power meter SL761BO71, serial #33001500
/103/ Photo – Power meter SL761BO71, serial #33001530
/104/ Photo – Power meter SL761BO71, serial #33001532
/105/ Photo – Power meter SL761BO71, serial #36128081
/106/ Photo – Power meter SL761BO71, serial #33001523
/107/ Photo – Power meter SL761BO71, serial #36132288
/108/ Photo – Power meter SL761BO71, serial #33001521
/109/ Photo – Power meter SL761BO71, serial #33001534
/110/ Photo – Power meter SL761BO71, serial #36128092
/111/ Photo – Power meter SL761BO71, serial #33001512
/112/ Photo – Power meter SL761BO71, serial #36128091
/113/ Photo – Power meter SL761BO71, serial #36128062
/114/ Photo – Power meter SL761BO71, serial #33001522
/115/ Photo – Power meter SL761BO71, serial #33002625
/116/ Photo – Power meter SL761BO71, serial #36130069
/117/ Photo – Power meter SL761BO71, serial #33002627
/118/ Photo – Power meter SL761BO71, serial #36130078
/119/ Photo – Power meter SL761BO71, serial #33002597
/120/ Photo – Power meter SL761BO71, serial #36126173
/121/ Photo – Power meter SL761BO71, serial #33002616
/122/ Photo – Power meter SL761BO71, serial #36130087
/123/ Photo – Power meter SL761BO71, serial #36120205
/124/ Photo – Power meter SL761BO71, serial #33002588
/125/ Photo – Power meter SL761BO71, serial #33002590
/126/ Photo – Power meter SL761BO71, serial #36118867
/127/ Photo – Power meter SL761BO71, serial #36130070
/128/ Photo – Power meter SL761BO71, serial #33002608
/129/ Photo – Power meter SL761BO71, serial #33002595
/130/ Photo – Power meter SL761BO71, serial #36130068
/131/ Photo – Power meter SL761BO71, serial #33002607
/132/ Photo – Power meter SL761BO71, serial #36130076
/133/ Photo – Power meter SL761BO71, serial #33002606
/134/ Photo – Power meter SL761BO71, serial #36118895

Persons interviewed:

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

/1/ Volodymyr Evhrafov – Head Engineer, Deputy Director
/2/ Andrii Kyrylenko – Deputy Head Engineer on Exploitation and Environmental
/3/ Oleksandr Tatarchuk – Head of Environmental Department
/4/ Leonid Aharkov – Head of Electric Department
/5/ Halyna Reznichenko - Head of Chemical Department
/6/ Serhiy Vasylenko – Head of Planning Producing Department
/7/ Oleksandr Beldiy – Head of Fuel Supply Department
/8/ Mykolai Semeniuk – Head of Technical Automatization and Measuring Department
/9/ Andriy Kolobaev – Head of Fuel Support Department
/10/ Maksym Rogovoy – representative of "Elta-Eco" LLC

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APPENDIX A: DETERMINATION PROTOCOL
Bureau Veritas Certification Holding SAS

DETERMINATION PROTOCOL

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

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
General description of the project				
Title of the project				
-	Is the title of the project presented?	The title of project is Reconstruction of the units at the "Kryvorizka TPP" of the "Dniproenergo" JSC *Corrective Action Request 01* Please, correct name of project participant in the title of the Project	CAR01	OK
-	Is the sectoral scope to which the project pertains presented?	The sectoral scope of the Project is 1. Energy Industries (non renewable sources)	OK	OK
-	Is the current version number of the document presented?	The current version of the PDD is 1.1	OK	OK
-	Is the date when the document was completed presented?	The date when the project design document is completed is 12/06/2011	OK	OK
Description of the project				
-	Is the purpose of the project included	The main objective of the Project is to make the		

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	with a concise, summarizing explanation (max. 1-2 pages) of the: a) Situation existing prior to the starting date of the project; b) Baseline scenario; and c) Project scenario (expected outcome, including a technical description)?	existing power equipment of the TPP more efficient and reliable. The increased efficiency will provide a higher output and lower fuel consumption. The increased capacity of the TPP is due to the better efficiency of the existing equipment. It will reduce the fuel consumption per unit of the energy produced by the station. Thus the GHG emission per the energy unit produced will be lowered. Other goals of the project are to: - lower greenhouse gases emission; - improve stability and reliability of generation and transmission of electricity; - implement safety measures; - improve health and safety on site. *Corrective Action Request 02* Please, briefly summarize chosen baseline scenario in section A.2 of the PDD.	CAR02	OK
-	Is the history of the project (incl. its JI component) briefly summarized?	*Corrective Action Request 03* Please provide in the PDD short history of the Project including its JI component	CAR03	OK
Project participants				
-	Are project participants and Party(ies) involved in the project listed?	*Corrective Action Request 04* Please indicate the second Party involved	CAR04	OK
-	Is the data of the project participants presented in tabular format?	The data of project participants is presented in tabular format	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
-	Is contact information provided in Annex 1 of the PDD?	The contact information is provided in Annex 1 of the PDD	OK	OK
-	Is it indicated, if it is the case, if the Party involved is a host Party?	Ukraine is indicated as a Host Party	OK	OK
Technical description of the project				
Location of the project				
-	Host Party(ies)	Ukraine	OK	OK
-	Region/State/Province etc.	Dnipropetrovs'k Region	OK	OK
-	City/Town/Community etc.	Zelenodols'k	OK	OK
-	Detail of the physical location, including information allowing the unique identification of the project. (This section should not exceed one page)	*Corrective Action Request 05* Please indicate in the PDD the source of geographical coordinates of the Project	CAR 05	OK
Technologies to be employed, or measures, operations or actions to be implemented by the project				
-	Are the technology(ies) to be employed, or measures, operations or actions to be implemented by the project, including all relevant technical data and the implementation schedule described?	The operations to be implemented by the Project are clearly and explicitly described in section A.4.2 of the PDD. All technical data and implementation schedule is provided.	OK	OK
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				
-	Is it stated how anthropogenic GHG emission reductions are to be achieved? (This section should not	*Corrective Action Request 06* Please clearly indicate in the section A.4.3 of the PDD how GHG reductions will be achieved. Also,	CAR 06	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	exceed one page)	correct this section that it doesn't exceed one page		
-	Is it provided the estimation of emission reductions over the crediting period?	The estimation of emission reductions over the crediting period is provided by developer in the PDD	OK	OK
-	Is it provided the estimated annual reduction for the chosen credit period in tCO2e?	The estimated annual reduction for the chosen crediting period is provided in tCO2	OK	OK
-	Are the data from questions above presented in tabular format?	The data of this questions are presented in tabular format	OK	OK
Estimated amount of emission reductions over the crediting period				
-	Is the length of the crediting period Indicated?	The length of the crediting period is 20 years (240 month) *Clarification Request 01* Please clarify, why 20 years were chosen as length of crediting period	CL01	OK
-	Are estimates of total as well as annual and average annual emission reductions in tonnes of CO2 equivalent provided?	Estimated emission reduction is provided in tonnes of CO2 equivalent	OK	OK
Project approvals by Parties				
19	Have the DFPs of all Parties listed as "Parties involved" in the PDD provided written project approvals?	Project Idea Note had been submitted for review to the State Environmental Investment Agency (SEIA). SEIA issued Letter of Endorsement dated 04/05/2011 *Corrective Action Request 07* Please provide in the section A.5 Letter of	CAR07	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		Endorsement registration number and date.		
19	Does the PDD identify at least the host Party as a "Party involved"?	In the PDD is identified Ukraine as a Host Party. Also see CAR 04	OK	OK
19	Has the DFP of the host Party issued a written project approval?	Corrective Action Request 08 Please provide Letter of Approval of the Host Party	CAR08	OK
20	Are all the written project approvals by Parties involved unconditional?	See section 19 of this Protocol	OK	OK
Authorization of project participants by Parties involved				
21	Is each of the legal entities listed as project participants in the PDD authorized by a Party involved, which is also listed in the PDD, through: − A written project approval by a Party involved, explicitly indicating the name of the legal entity? or − Any other form of project participant authorization in writing, explicitly indicating the name of the legal entity?	After finishing of project determination report, the PDD with supporting documents and Determination Report will be presented to the National Environmental Investment Agency of Ukraine for receiving the Letter of Approval that will authorize project participants. Also, see section 19 and section 20 of this protocol above.	OK	OK
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	It is indicated in thePDD that JI specific approach is used for identifying the baseline, since among the methodologies approved by the CDM Executive Board there is none fully matching the proposed JI project.	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
JI specific approach only				
23	Does the PDD provide a detailed theoretical description in a complete and transparent manner?	The PDD provides seven plausible future scenarios for project. This information is provided in section B.1 of the PDD.	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? (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? (d) Taking into account of uncertainties and using conservative assumptions? (e) In such a way that ERUs cannot be earned for decreases in activity levels outside the project or due to force majeure?	According to the information stated in the PDD, seven plausible future scenarios are presented in a complete and transparent manner. Seventh plausible future scenario was chosen as baseline. Identified possible scenarios were analysed taking into account key factors of national and/or sectoral policies that affect the implementation of the regarded scenarios. Also, in section B.1 all baseline data and parameters are presented in a tabular format with detailed explanation of each ones.	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	(f) By drawing on the list of standard variables contained in appendix B to "Guidance on criteria for baseline setting and monitoring", as appropriate?			
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?	As indicated in the PDD none of CDM methodology or methodological tool is used for baseline choice, justification and setting, because among the methodologies approved by the CDM Executive Board there is none fully matching the proposed JI project.	OK	OK
25	If a multi-project emission factor is used, does the PDD provide appropriate justification?	Oxidation factor of the fuel and Emission factor of the fuel are used for emission reduction calculations in this project. Oxidation factors for coal, natural gas and heavy fuel oil was chosen in accordance with IPCC guidelines. *Corrective Action Request 09* For this project there is used multi-project Carbon Emission Factor, which is defined in the IPCC 1996 Guidelines for National Greenhouse Gas Inventories for JI projects. Please, change value of Carbon Emission Factor on value, which is approved by SEIA.	CAR 09	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
Approved CDM methodology approach only_Not applicable				
Additionality				
JI specific approach only				
28	Does the PDD indicate which of the following approaches for demonstrating additionality is used? (a) Provision of traceable and transparent information showing the baseline was identified on the basis of conservative assumptions, that the project scenario is not part of the identified baseline scenario and 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	The PDD indicates that approved "Combined tool to identify the baseline scenario and demonstrate additionality" (Version 02.2) was used for demonstration of additionality. The latest version of the tool was used. Consideration that the project scenario is not part of the identified baseline scenario and that the project will lead to emission reductions were performed by project developer and provided in section B.2 of the PDD.	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	proving additionality approved by the CDM Executive Board".			
29 (a)	Does the PDD provide a justification of the applicability of the approach with a clear and transparent description?	*Corrective Action Request 10* Permanent repairs, mid repairs and capital repairs are common practise for Ukrainian energy industry. Please, prove that proposed project activity is not common practise at Ukrainian TPPs	CAR10	OK
29 (b)	Are additionality proofs provided?	*Corrective Action Request 11* According to the PDD the most important barriers for project activity are financial and technological barriers. Please, provide full financial analysis of the project or clearly describe technological barriers of the project	CAR11	OK
29 (c)	Is the additionality demonstrated appropriately as a result?	See section 29 (b) and 29 (c) of this protocol	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?	See section 29 (b) and 29 (c) of this protocol	OK	OK
Approved CDM methodology approach only_Not aplicable				
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	*Corrective action request 12* Please, divide the emission sources into three groups, i.e. which are under the control of the JI	CAR12	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	by sources of GHGs that are: (i) Under the control of the project participants? (ii) Reasonably attributable to the project? (iii) Significant?	project participants, reasonably attributable to the project, and significant to the JI project and clarify these information in section B.3 of the PDD		
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?	See section 32(a) of this protocol	-	-
32 (c)	Are the delineation of the project boundary and the gases and sources included appropriately described and justified in the PDD by using a figure or flow chart as appropriate?	The delineation of the project boundary and sources included are described in the PDD by using figure 3 Emission sources located within the project boundary. *Corrective Action Request 13* Please correctly identify project boundaries. Heat power plants, coal mines, power transmission lines aren't under control of the project participants.	CAR13	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?	In section B.3 of the PDD all gases and sources included are explicitly stated; the information presented in table 6	OK	OK
Approved CDM methodology approach only_Not applicable				
Crediting period				
34 (a)	Does the PDD state the starting date of the project as the date on which the	The starting date of the project is 12/05/2005 *Clarification Request 02*	CL02	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	implementation or construction or real action of the project will begin or began?	Please clarify why 12/05/2005 was chosen as the starting date of the project		
34 (a)	Is the starting date after the beginning of 2000?	The starting date of the project is after the beginning of 2000	OK	OK
34 (b)	Does the PDD state the expected operational lifetime of the project in years and months?	The PDD states the expected operational lifetime of the Project as 20 years (240 months) *Clarification Request 03* Please clarify why 20 years were chosen as expected operational lifetime of the project equipment	CL03	OK
34 (c)	Does the PDD state the length of the crediting period in years and months?	The PDD indicates length of the crediting period as 16 years (192 months)	OK	OK
34 (c)	Is the starting date of the crediting period on or after the date of the first emission reductions or enhancements of net removals generated by the project?	The starting date of the crediting period is 01/01/2009. *Corrective Action Request14* Please indicate in the PDD why 01/01/2009 was chosen as the beginning of the crediting period	CAR 14	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?	The PDD states that the crediting period starts after 2008 year and doesn't extend beyond the operational lifetime of the project	OK	OK
34 (d)	If the crediting period extends beyond 2012, does the PDD state that the	The estimation of emission reduction due to the JI project is provided for the period 2009-2028.	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	extension is subject to the host Party approval? Are the estimates of emission reductions or enhancements of net removals presented separately for those until 2012 and those after 2012?	In the PDD the values of emission reductions during the period 2009-2012 are presented in table 5. The values of emission reductions for the period 2012-2028 are presented separately in table 6 of the PDD.		
Monitoring plan				
35	Does the PDD explicitly indicate which of the following approaches is used? − JI specific approach − Approved CDM methodology approach	The PDD explicitly indicates that JI specific approach is used	OK	OK
JI specific approach only				
36 (a)	Does the monitoring plan describe: − All relevant factors and key characteristics that will be monitored? − The period in which they will be monitored? − All decisive factors for the control and reporting of project performance?	The Monitoring Plan describes relevant factors and parameters to be monitored, such as amount of electricity, supplied to the grid, quantity of consumed fuel etc. Period in which relevant factor and parameters will be monitored is established.	OK	OK
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 the indicators, constants and variables in transparent manner.	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
36 (b)	If default values are used: − Are accuracy and reasonableness carefully balanced in their selection? − Do the default values originate from recognized sources? − Are the default values supported by statistical analyses providing reasonable confidence levels? − Are the default values presented in a transparent manner?	The monitoring plan specify that next constants are used for ERUs calculations: - oxidation factor of the fuel - Emission factor of the fuel. Oxidation factors for coal, natural gas and heavy fuel oil was chosen in accordance with IPCC guidelines. For emission factor of the carbon see CAR 09	OK	OK
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 sources of values, provided by the project participants are clearly indicated in the monitoring plan	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?	See section 36 (b) (i) of this protocol	OK	OK
36 (b) (iii)	For all data sources, does the monitoring plan specify the procedures to be followed if expected data are unavailable?	Corrective Action Request 15 Please, specify the procedures to be followed if expected monitoring data are unavailable.	CAR 15	OK
36 (b)	Are International System Unit (SI units)	International System Units aren't used, but some	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
(iv)	used?	units are used.		
36 (b) (v)	Does the monitoring plan note any parameters, coefficients, variables, etc. that are used to calculate baseline emissions or net removals but are obtained through monitoring?	The monitoring plan doesn't note any parameters, coefficients, variables, etc that are to be obtained though monitoring in order to calculate baseline emissions	OK	OK
36 (b) (v)	Is the use of parameters, coefficients, variables, etc. consistent between the baseline and monitoring plan?	According to the monitoring plan and the PDD, the use of parameters 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 established taking into account the list of standard variables contained in appendix B of "Guidance on criteria for baseline setting and monitoring". For instance, Carbon Emission Factor for electricity (EF_{CO2}) is used in given JI project	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, but are determined only once	Corrective Action Request 16 Please, clearly indicate in the monitoring plan of the PDD division of the parameters into three groups, such as: (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, but are determined	CAR 16	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	(and thus remain fixed throughout the crediting period), but that are not already available at the stage of determination? (iii) Data and parameters that are monitored throughout the crediting period?	only once (and thus remain fixed throughout the crediting period), but that are not already available at the stage of determination; (iii) Data and parameters that are monitored throughout the crediting period. If any group is not applicable to parameters and data of given JI project, please, state so in the PDD.		
36 (e)	Does the monitoring plan describe the methods employed for data monitoring (including its frequency) and recording?	Methods for data monitoring and established frequency of the last ones are specified in the monitoring plan described in the PDD.	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?	Monitoring plan elaborates the formulae used for calculation and estimation of baseline emissions and emission reductions due to the JI project implementation.	OK	OK
36 (f) (i)	Is the underlying rationale for the algorithms/formulae explained?	The underlying rationale for the formulae is presented	OK	OK
36 (f) (ii)	Are consistent variables, equation formats, subscripts etc. used?	All variables and equation formats are consistent and used in appropriately way.	OK	OK
36 (f) (iii)	Are all equations numbered?	Equations needed for calculations described in section D and section E of the PDD. All equations are numbered.	OK	OK
36 (f) (iv)	Are all variables, with units indicated	Corrective Action Request 17	CAR 17	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	defined?	Please provide units for the share of fuel, consumed for energy production in the section D.1.1.2		
36 (f) (v)	Is the conservativeness of the algorithms/procedures justified?	The conservativeness of the procedures is justified	OK	
36 (f) (v)	To the extent possible, are methods to quantitatively account for uncertainty in key parameters included?	Uncertainty level in key parameters identified as low in table D.2 "Quality control and quality assurance procedures undertaken for data monitored".	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 the procedure for calculating the emissions of the baseline scenario.	OK	OK
36 (f) (vii)	Are any parts of the algorithms or formulae that are not self-evident explained?	Used formulae are explained.	OK	OK
36 (f) (vii)	Is it justified that the procedure is consistent with standard technical procedures in the relevant sector?	In the PDD project developer describes the monitoring procedure that is in compliance with technical procedure at Kryvorizhska TPP.	OK	OK
36 (f) (vii)	Are references provided as necessary?	*Corrective Action Request 18* Please, provide in the sub-section D.1.5 of the PDD references to the national environmental legislation in relevant sectors.	CAR 18	OK
36 (f) (vii)	Are implicit and explicit key assumptions explained in a transparent	Key assumptions are explained in the PDD.	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	manner?			
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?	In the project design document there is no information stated about significant uncertainty level of assumptions and procedures.	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?	In the PDD project developer described the uncertainty level of key parameters. Uncertainty level of concerned data was assessed as low. Measuring devices for monitoring of key parameters are calibrated/verified in compliance with the state regulation, Kryvorizhska TPP standards and approved methodologies in order to assure quality control of monitoring data.	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 certain aspects of the project? Does the monitoring plan provide a reference as to where a detailed description of the standard can be found?	No national or international monitoring standard are used for monitoring of the JI project implementation.	OK	OK
36 (h)	Does the monitoring plan document statistical techniques, if used for monitoring, and that they are used in a	Not applicable for given JI project.	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	conservative manner?			
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?	The quality assurance and control procedures, including information about calibration and how monitoring data are to be recorded and collected are presented in monitoring plan, sections D.2 and D.3 of. *Corrective Action Request 19* Please, provide Calibration plan of JI project measurement equipments.	CAR19	OK
36 (j)	Does the monitoring plan clearly identify the responsibilities and the authority regarding the monitoring activities?	*Corrective Action Request 20* Please identify the responsible departments and persons regarding monitoring activities of the JI project in section D.2 and section D.3 of the PDD.	CAR20	OK
36 (k)	Does the monitoring plan, on the whole, reflect good monitoring practices appropriate to the project type? If it is a JI LULUCF project, is the good practice guidance developed by IPCC applied?	According to the section B.2 of the PDD, no similar activity to this project is identified in Ukraine, so good monitoring practice to this type of project is unavailable.	OK	OK
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	Presented in the PDD 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. Data connected with baseline scenario and emission reduction calculation are	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	including data that are calculated with equations?	stated in tabular format in section D of the PDD.		
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?	*Corrective Action Request 21* Please, indicate in the sub-section D.3 of the PDD that the data monitored and required for verification are to be kept for two years after the last transfer of ERUs for the project	CAR21	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 with elements supplementary developed by the project participants in line with 36 above?	There is no selected elements or combinations of approved CDM methodologies	OK	OK
Approved CDM methodology approach only_Not applicable				
Applicable to both JI specific approach and approved CDM methodology approach_Not applicable				
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?	As developers of project design document regard, the project activity doesn't relate with transportation, firing, or production, so additional amount of fuel is not needed. Thus, project leakage is absent.	OK	OK
40 (b)	Does the PDD provide a procedure for	According to the information and justification	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	an ex ante estimate of leakage?	stated in the PDD, leakage is absent. Please, refer to section B.3 of the PDD.		
Approved CDM methodology approach only				
41	Are the leakage and the procedure for its estimation defined in accordance with the approved CDM methodology?	Not applicable	Not applicable	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	The PDD indicates that assessment of emissions in the baseline scenario and in the project scenario is chosen	OK	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	The PDD provides ex ante estimates of emissions for the project and baseline scenario. As for leakage, it is considered as absent, because electric energy producing at the Kryvorizhska TPP that does not concern with production, transportation and firing of additional amount of fuel at the Kryvorizhska TPP	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	adjusted by leakage?			
44	If the approach (b) in 42 is chosen, does the PDD provide ex ante estimates of: (a) Emission reductions or enhancements of net removals (within the project boundary)? (b) Leakage, as applicable? (c) Emission reductions or enhancements of net removals adjusted by leakage?	See section 42 of this protocol	OK	OK
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 tones of CO2 equivalent, using global warming potentials defined by decision 2/CP.3 or as subsequently revised in accordance with Article 5 of the Kyoto Protocol? (b) Are the formula used for calculating	The estimation of baseline emissions and emission reduction are made on a periodic basis from beginning to the end of the crediting period for each year. Estimations of emission reductions are carried out for CO2 as greenhouse gas. Calculations are regarded in t CO_2 equivalent. Formulae used for calculating the estimates concerning in section D and section E are consistent throughout the PDD. Data sources used for calculating the estimates are clearly identified. Among key factors influencing the baseline emissions or the activity level of the project as well as risks associated with the project is taken into	CAR22	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	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 manner? (g) Are the estimates in 43 or 44 consistent throughout the PDD? (h) Is the annual average of estimated	account. Conservative assumptions are taken into account while estimating emission reduction. In the PDD there are provided tables with calculation results of CO2 emission reductions. As a fact, estimated total value of CO2 emission reductions for the first crediting period is 216 656 t CO2 equivalent; moreover, estimated total value of CO2 emission reductions for the period 2013-2028 9 318 050 t CO2 equivalent. *Corrective Action Request 22* Please, provide in table E-6 and table E-7 the annual average value of CO2 emission reductions.		

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	emission reductions or enhancements of net removals calculated by dividing the total estimated emission reductions or enhancements of net removals over the crediting period by the total months of the crediting period and multiplying by twelve?			
46	If the calculation of the baseline emissions or net removals is to be performed ex post, does the PDD include an illustrative ex ante emissions or net removals calculation?	The calculation of baseline emissions is to be performed ex post. In the PDD there are provided ex ante calculation of emissions. All estimated values are presented in section E of the PDD and Excel spreadsheets.	OK	OK
Approved CDM methodology approach only_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 by the host Party?	The project design document includes description of the environmental impact assessment of the JI project that performed in accordance with procedure determined in Ukraine. Referenced environmental documents are listed in section F.1 of the PDD. *Corrective Action Request 23* According to the PDD, reconstruction of all units at Kryvorizhska TPP will be implemented. Please indicate in the section F.1 documents applied to whole TPP	CAR 23	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
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?	Please, see section F of the PDD and section 48(a) of this protocol	OK	OK
Stakeholders comments				
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 Host Party doesn't require stakeholder consultation process for the JI project. During the project realization, the local public community was informed via the mass-media. No comments connected with JI project implementation were received. Also, stakeholder's comments will be collected during determination procedure *Corrective Action Request 24* Please provide correct reference to the publications.	CAR 24	OK
Determination regarding small-scale projects (additional elements for assessment)				
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 CLARIFICATION REQUESTS

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participant response	Determination team conclusion
Corrective Action Request 01 Please, correct name of project participant in the title of the Project	-	Title: Reconstruction of the units at the "Kryvorizka TPP" of the "Dniproenergo" JSC.	The issue is closed

Corrective Action Request 02 Please, briefly summarize chosen baseline scenario in section A.2 of the PDD.	-	Prior to the starting date of the Project the Kryvorizka TPP had been working using it's equipment without any major repairs or reconstructions. That kind of working lead to the continuous working parameters deterioration. The continuation of this situation would have been the Baseline Scenario and the Project Scenario foresees the full-scale reconstruction of all generating equipment, and the all working parameters improvement.	The issue is closed
Corrective Action Request 03 Please provide in the PDD short history of the Project including its JI component	-	For this purpose in 2006 the contract for the TEA of the on of the Units' reconstruction was signed. That was the first major step under way to the Project implementation and, as Ukraine was the party of the Kyoto Protocol, one of the main arguments in favor of the Project was the possibility of it's registration as the JI Project.	The issue is closed
Corrective Action Request 04 Please indicate the second Party involved	-	the Kingdom of Netherlands was indicated as second Party Involved	the issue is closed
Corrective Action Request 05 Please indicate in the PDD the source of geographical coordinates of the Project	-	http://google.earth.com	The issue is closed

Corrective Action Request 06 Please clearly indicate in the section A.4.3 of the PDD how GHG reductions will be achieved. Also, correct this section that it doesn't exceed one page	-	The proposed Project provides emission reductions by lowering of the amount of fuel used per energy unit produced (MW, Gcal, etc.).	The issue is closed
Corrective Action Request 07 Please provide in the section A.5 Letter of Endorsement registration number and date.	19	The Letter of Endorsement #10/23/7 dated 05/01/2011 has been received from the National Environmental Investments Agency of Ukraine.	The issue is closed
Corrective Action Request 08 (CAR08) Please provide Letter of Approval of the Host Party	19	Letter of Approval #2752/23/7 dated 26/09/2012 has been issued by State Environment Investment Agency of Ukraine. Letter of Approval #2012JI51 dated 18/10/2012 has been issued by Ministry of Economic, Agriculture and development of the Kingdom Netherlands	the issue is closed
Corrective Action Request 09 For this project there is used multi-project Carbon Emission Factor, which is defined in the IPCC 1996 Guidelines for National Greenhouse Gas Inventories for JI projects. Please, change value of Carbon Emission Factor on value, which is approved by SEIA.	25	The SEIA uses the IPCC 1996 values (see http://www.neia.gov.ua/nature/doccatalog/document?id=125381 , annex I)	The issue is closed

Corrective Action Request 10 Permanent repairs, mid repairs and capital repairs are common practise for Ukrainian energy industry. Please, prove that proposed project activity is not common practise at Ukrainian TPPs	29(a)	The mandatory list of the measures within the repairs is given in the GKD 34.20.661-2003 "The Rules for the Organization of the Power Plants and the Networks Equipment, Buildings and Constructions Servicing and Repairs" approved by the Ministry of the Fuel and Energy of Ukraine in 2004. The measures outside the list should be taken into account when calculating the Project, Baseline Emission and the Emission Reductions.	The issue is closed
Corrective Action Request 11 According to the PDD the most important barriers for project activity are financial and technological barriers. Please, provide full financial analysis of the project or clearly describe technological barriers of the project	29(b)	The main goals of the Project are the GHG emission reduction and increased reliability of the equipment. The technical parameters reached by the Project (the fuel consumption lowering) do not allow the Project Owner to get the profit. The NPV of the Project by 2020 is – 1 625 962 000 UAH. The JI registration raises the NPV to – 1 526 330 020 UAH. (The calculation is presented to the AIE).	The issue is closed

Corrective action request 12 Please, divide the emission sources into three groups, i.e. which are under the control of the JI project participants, reasonably attributable to the project, and significant to the JI project and clarify these information in section B.3 of the PDD	32(a)	See **Key Parameters used to identify the Baseline Scenario**	The issue is closed
Corrective Action Request 13 Please correctly identify project boundaries. Heat power plants, coal mines, power transmission lines aren't under control of the project participants.	32(c)	Thermal Power Plant	Corrections provided by project developer were found appropriate in request line. The issue is closed
Corrective Action Request 14 Please indicate in the PDD why 01/01/2009 was chosen as the beginning of the crediting period	34(c)	The beginning of the crediting period is 01/01/2009 – the first day of the ERUs generation by the Project.	The issue is closed
Corrective Action Request 15 Please, specify the procedures to be followed if expected monitoring data are unavailable.	36(b)(iii)	If the monitoring data is unavailable the calculation of the emission reduction interrupts and the all-necessary documents will be presented to the AIE, SEIA and JISC.	The issue is closed

Corrective Action Request 16 Please, clearly indicate in the monitoring plan of the PDD division of the parameters into three groups, such as: (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, but are determined only once (and thus remain fixed throughout the crediting period), but that are not already available at the stage of determination; (iii) Data and parameters that are monitored throughout the crediting period. If any group is not applicable to parameters and data of given JI project, please, state so in the PDD.	36(d)	See **Key Parameters used to identify the Baseline Scenario.**	The issue is closed
Corrective Action Request 17 Please provide units for the share of fuel, consumed for energy production section D.1.1.2	36(f) (iv)	see **Key Parameters used to identify the Baseline Scenario:**	The issue is closed

Corrective Action Request 18 Please, provide in the sub-section D.1.5 of the PDD references to the national environmental legislation in relevant sectors.	36(f) (vii)	The main legal acts ruling the Project activities are: The Law of Ukraine "For the Environmental Protection" #1264-XII issued 25/06/1991; The Law of Ukraine "For the Atmosphere Air Protection" #2707-XII issued 16/10/1992; International Standard "Environmental Management System" ISO 14001-2004.	The issue is closed
Corrective Action Request 19 Please, provide Calibration plan of JI project measurement equipments.	36(i)	Will be provided at the first verification	The issue is closed
Corrective Action Request 20 Please identify the responsible departments and persons regarding monitoring activities of the JI project in section D.2 and section D.3 of the PDD.	36(j)	See section D.3	The issue is closed
Corrective Action Request 21 Please, indicate in the sub-section D.3 of the PDD that the data monitored and required for verification are to be kept for two years after the last transfer of ERUs for the project	36(m)	All the data shall be stored in the paper and electronic form at the TPP and in the data base of the "Elta-Eco" company during all lifetime of the project and for at least two years after the last transfer of ERUs for the Project.	The issue is closed
Corrective Action Request 22 Please, provide in table E-6 and table E-7 the annual average value of CO2 emission reductions.	45	See section E.6	The issue is closed

Corrective Action Request 23 According to the PDD, reconstruction of all units at Kryvorizhska TPP will be implemented. Please indicate in the section F.1 documents applied to whole TPP	48(a)	The rehabilitation of each Unit of the TPP consists of the description of the Environmental impacts. For today only the Unit #3 has been developed. All the others will also have the description of the Environmental Impact, which is usually the part of the Technical and Economical Assessment of the Project. The environmental impacts of the Project are described in the Explanatory Note "Environmental Impact Assessment of the Kryvorizka TPP Unit #3 Rehabilitation Project", prepared by the SRI "Teploenergoproekt" of the "Donbassenergo" JSC in 2010.	The issue is closed
Corrective Action Request 24 Please provide correct reference to the publications.	49	The information concerning the Project was published in the local newspaper "Apostolivsky Novyny" #41 dated 21-27/05/07.	The issue is closed
Clarification Request 01 Please clarify, why 20 years were chosen as length of crediting period	-	The rehabilitations provided as the Project Scenario provides the operational lifetime increase for 20 years.	The issue is closed
Clarification Request 02 Please clarify why 12/05/2005 was chosen as the starting date of the project	34(a)	28/12/2006 (Contract for the technical and economical assessment of the Unit #3 rehabilitation #87-723-2841-DPO/05 dated 28/12/06).	The issue is closed

Clarification Request 03 Please clarify why 20 years were chosen as expected operational lifetime of the project equipment	34(a)	The rehabilitations provided as the Project Scenario provides the operational lifetime increase for 20 years.	The issue is closed