



# DETERMINATION REPORT OJSC “DONBASENERGO”

DETERMINATION OF THE  
REHABILITATION AND TECHNICAL  
RE-EQUIPMENT OF STAROBESHIVSKA  
THERMAL POWER PLANT OF THE  
OJSC “DONBASENERGO”

REPORT No. UKRAINE/0049/2009

REVISION No. 02

BUREAU VERITAS CERTIFICATION



**DETERMINATION REPORT ON JI PROJECT "REHABILITATION AND TECHNICAL RE-EQUIPMENT OF STAROBESHIVSKA THERMAL POWER PLANT OF THE OJSC "DONBASENERGO"**

Date of first issue: 04/08/2010	Organizational unit: Bureau Veritas Certification Holding SAS
Client: JSC "Donbasenergo"	Client ref.: Sergiy Ivanov

**Summary:**  
Bureau Veritas Certification has made the determination of the "Rehabilitation and technical re-equipment of Starobeshivska thermal power plant of the OJSC "Donbasenergo" located in Donetsk Oblast, 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. CAR 09 is not closed and remains a subject for checking out during the periodic verification.

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

On behalf of determination team Flavio Gomes, Bureau Veritas Certification Holding SAS Global Product Manager for Climate Change, approved final version of the Determination Report.

Report No.: UKRAINE/0049/2009	Subject Group: JI
Project title: Rehabilitation and technical re-equipment of Starobeshivska thermal power plant of the OJSC "Donbasenergo"	
Work carried out by: Nadiia Kaiun - Team Leader, Lead Verifier Svitlana Gariyenchyk – Team Member, Verifier Olena Manziuk - Team Member, Verifier Trainee Denis Pishchalov - Team Member, Financial Specialist	
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Work signed by: Flavio Gomes - Bureau Veritas Certification Holding SAS Global Product Manager for Climate Change	
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**Indexing terms**

*Climate Change, Kyoto Protocol, JI, Emission Reductions, Determination*

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### Abbreviations

AIE	Accredited Independent Entity
BVC	Bureau Veritas Certification
CAR	Corrective Action Request
CL	Clarification Request
CH <sub>4</sub>	Methane
CO <sub>2</sub>	Carbon Dioxide
DDR	Draft Determination Report
DR	Document Review
EF	Emission Factor
EIA	Environmental Impact Assessment
ERU	Emission Reduction Unit
GHG	Green House Gas(es)
I	Interview
IPCC	Intergovernmental Panel on Climate Change
JI	Joint Implementation
JISC	Joint Implementation Supervisory Committee
MoV	Means of Verification
NGO	Non Government Organization
PDD	Project Design Document
tCO <sub>2</sub> e	Tonnes CO <sub>2</sub> equivalent
TPP	Thermal Power Plant
UNFCCC	United Nations Framework Convention for Climate Change




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## 1 INTRODUCTION

OJSC "Donbasenergo" has commissioned Bureau Veritas Certification to determinate its JI project Rehabilitation and technical re-equipment of Starobeshivska thermal power plant of the OJSC "Donbasenergo" in Donetsk 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 GHG Project Description

The main goal of the project is decreasing of fuel consumption in the power generation cycle at Starobeshivska thermal power plant (TPP) through implementation of technically available energy saving technologies. The purpose is the facilitation to sustainable development and improvement of ecological situation through fuel saving and corresponding reduction of greenhouse gases and pollution emissions.



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This project initiated in 2007 covers rehabilitation and technical re-equipment of units No. 4 – 13 of Starobeshivska TPP, and employs the increase in fuel consumption efficiency to reduce greenhouse gas emissions relative to current practice. Reduction of fuel consumption is based on implementation of the following activities:

- Replacement of existing coal-fired boiler at the unit №4 with steam productivity of 640 t/hour with the boiler with circulating boiling layer (highly efficient ecologically clean technology for combustion of low-quality fuel and coal-processing plants wastes) with steam productivity of 670 t/hour which burns anthracite slime. The unit installed capacity will be increased from 175 MWe to 210 MWe, with planned efficiency increasing from ~83% to 90,3%.
- Rehabilitation and technical re-equipment of the unit №7, including boiler aggregate upgrading with replacement of the steam drum, replacement of smoke exhausters, upgrading of electric equipment, upgrading of control system;
- Upgrading of boilers' burners;
- Partial replacement of furnace water heating screens;
- Replacement of steam lines on the boiler units;
- Re-equipment of the overhead superheaters;
- Improvement of the brickwork envelope of boilers with using of modern materials;
- Improvement of the pipelines heat insulation with using of modern materials;
- Modernization of air heaters.

Project activity is directed on reduction of specific fuel consumption for production of unit of electricity through implementation of the energy efficiency improving measures at all power units, replacement and reconstruction of fuel combusting and power generating equipment at units No. 4 and 7.

Fuel saving at production of electric power and reduction of energy charges for the own needs of power units will result in reduction of the CO<sub>2</sub> and pollution emissions.

Implementation of the project will provide economic, environmental and social benefits and facilitate to sustainable development of the country. Social impact of the project is positive also since after project implementation the power generation will be more efficient and reliable though tariffs for power supply will not be raised to cover construction costs.

Environmental impact of the project is expected to be very positive as an emission of the greenhouse and toxic gases such as CO<sub>2</sub>, SO<sub>x</sub>, NO<sub>x</sub>, CO and particulate matter will be reduced.

#### 1.4 Determination team

The determination team consists of the following personnel:



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## **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 Determination and Verification Manual (IETA/PCF). The protocol shows, in a transparent manner, criteria (requirements), means of verification 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 determinator will document how a particular requirement has been determined and the result of the determination.

The determination protocol consists of four tables. The different columns in these tables are described in Figure 1.

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



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Determination Protocol Table 1: Mandatory Requirements			
Requirement	Reference	Conclusion	Cross reference
The requirements the project must meet.	Gives reference to the legislation or agreement where the requirement is found.	This is either acceptable based on evidence provided (OK), a <b>Corrective Action Request (CAR)</b> or a <b>Clarification Request (CL)</b> of risk or non-compliance with stated requirements. The CAR's and CL's are numbered and presented to the client in the Determination Report.	Used to refer to the relevant protocol questions in Tables 2, 3 and 4 to show how the specific requirement is determined. This is to ensure a transparent determination process.

Determination Protocol Table 2: Requirements checklist				
Checklist Question	Reference	Means of verification (MoV)	Comment	Draft and/or Final Conclusion
The various requirements in Table 1 are linked to checklist questions the project should meet. The checklist is organized in several sections. Each section is then further subdivided. The lowest level constitutes a checklist question.	Gives reference to documents where the answer to the checklist question or item is found.	Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.	The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.	This is either acceptable based on evidence provided (OK), or a <b>Corrective Action Request (CAR)</b> due to non-compliance with the checklist question. (See below). <b>Clarification Request (CL)</b> is used when the determination team has identified a need for further clarification.

Determination Protocol Table 3: Legal requirements				
Checklist Question	Reference	Means of verification (MoV)	Comment	Draft and/or Final Conclusion
The national legal requirements the project must meet.	Gives reference to documents where the answer to the checklist question or item is found.	Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.	The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.	This is either acceptable based on evidence provided (OK), or a <b>Corrective Action Request (CAR)</b> due to non-compliance with the checklist question. (See below). <b>Clarification Request (CL)</b> is used when the determination team has identified a need for further clarification.

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<b>Determination Protocol Table 4: Resolution of Corrective Action and Clarification Requests</b>			
<b>Report clarifications and corrective action requests</b>	<b>Ref. to checklist question in tables 2/3</b>	<b>Summary of project owner response</b>	<b>Determination conclusion</b>
If the conclusions from the Determination are either a Corrective Action Request or a Clarification Request, these should be listed in this section.	Reference to the checklist question number in Tables 2, 3 and 4 where the Corrective Action Request or Clarification Request is explained.	The responses given by the Client or other project participants during the communications with the determination team should be summarized in this section.	This section should summarize the determination team's responses and final conclusions. The conclusions should also be included in Tables 2, 3 and 4, under "Final Conclusion".

**Figure 1 Determination protocol tables**

## 2.1 Review of Documents

The Project Design Document (PDD) version 02 dated 20/10/2009 was submitted by OJSC "Donbasenergo" together with supporting documentation regarding calculation of GHG emission.

After a site visit of Bureau Veritas Determination team to Starobeshivska Thermal Power Plant had been performed, a new PDD version 03 dated 30 April 2010 appeared and was made publicly available for public comments on Bureau Veritas internet site ([www.bureauveritas.com.ua](http://www.bureauveritas.com.ua)) from 27 May 2010 to 26 June 2010.

PDD version 03 and additional background documents related to the project design, baseline, and monitoring plan, such as Kyoto Protocol, Host Country laws and regulation, JI guidelines, JISC Guidance on criteria for baseline and monitoring, and Guidelines for users of the JI PDD Form were reviewed.

The first deliverable of the document review was the Draft Determination Report dated 15/06/2010 with 26 CARs and 31CLs.

To address Bureau Veritas Certification corrective action and clarification requests PPs revised the PDD and resubmitted its updated version 04 on 30/06/2010.

The determination findings presented in this Determination Report Version 01 relate to the project as described in the PDD Version 02 dated 20 November 2009, PDD Version 04 dated 30 June 2010, including PDD Developer responses to CARs and CLs. PDD Version 05 dated 05 August 2010, comprising responses to the ITR's requests, is considered the final.

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 DRAFT DETERMINATION REPORT ON JI PROJECT "REHABILITATION AND TECHNICAL  
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In the process of document review, it was observed by the determination team that neither reference nor a documented evidence regarding estimation of remaining lifetime of power equipment conducted by the specialized organization "DONORGRES", were available or provided to the AIE. Thus, CAR 09 is not closed and remains a subject for checking out during the periodic verification.

## 2.2 Follow-up Interviews

On 04/12/2009 Bureau Veritas determination team performed on-site interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of OJSC "Donbasenergo", Starobeshivska TPP, Institute of Engineering Ecology were interviewed (see References). The main topics of the interviews are summarized in Table 1.

**Table 1 Interview topics**

Interviewed organization	Interview topics
Starobeshivska TPP	<ul style="list-style-type: none"> <li>➤ Implementation schedule</li> <li>➤ Project management organisation</li> <li>➤ Evidence and records on reconstruction and new building and its operation</li> <li>➤ Environmental Impact Assessment</li> <li>➤ Project monitoring responsibilities</li> <li>➤ Monitoring equipments</li> <li>➤ Quality control and quality assurance procedures</li> <li>➤ Environmental impacts affected</li> <li>➤ Local authorities and public opinion</li> </ul>
OJSC "Donbasenergo"	<ul style="list-style-type: none"> <li>➤ OJSC "Donbasenergo" Energy Saving Programme</li> <li>➤ History of the project</li> </ul>
CONSULTANT Institute of Engineering Ecology	<ul style="list-style-type: none"> <li>➤ Applicability of methodology</li> <li>➤ Baseline and Project scenarios</li> <li>➤ Barriers analysis</li> <li>➤ Additionality justification</li> <li>➤ Common practice analysis</li> <li>➤ Monitoring plan</li> <li>➤ Estimation of the leakage</li> <li>➤ Conformity of PDD to JI requirements</li> </ul>

## 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.



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

*Corrective Actions Requests (CAR)* are issued, where:

- i) there is a clear deviation concerning the implementation of the project as defined in the PDD;
- ii) requirements set by the Methodological Procedure or qualifications in a verification opinion have not been met; or
- iii) there is a risk that the project would not be able to deliver high quality ERUs.

*Clarification Requests (CL)* are issued where

- iv) additional information is needed to fully clarify an issue.

The Draft Determination Protocol summarising Bureau Veritas Certification's findings was submitted to OJSC "Donbasenergo" on 15 June 2010. The findings identified have been 26 Corrective Action Requests and 31 Clarification Requests. Based on the findings of the DDP, the PDD developer made necessary amendments to the PDD Version 03 and eventually the PDD Version 04 dated 30 June 2010 was issued and submitted to Bureau Veritas Certification. The amendments and corrections made to the PDD and the additional information and clarifications provided by the PDD developer satisfactorily addressed BV Certifications' concerns and, as a result, the Determination Report Version 01 was issued on 04/08/2010. Determination Report Version 01 and PDD Version 04 were sent to Bureau Veritas Certification Internal Technical Reviewer (ITR) for review. As a result of ITR, a new PDD Version 05 dated 05 August 2010 appeared.

### **3 DETERMINATION FINDINGS**

In the following sections, the findings of the determination are stated. The determination findings for each determination subject are presented as follows:

- 1) The findings from the desk review of the original project design documents and the findings from interviews during the follow up visit are summarized. A more detailed record of these findings can be found in the Determination Protocol in Appendix A.
- 2) Where Bureau Veritas Certification had identified issues that needed clarification or that represented a risk to the fulfillment of the project objectives, a Clarification or Corrective Action Request, respectively, have been issued. 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 26 Corrective Action Requests and 31 Clarification Requests.
- 3) The conclusions for determination subject are presented.



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### 3.1 Project Design

Bureau Veritas Certification recognizes that this Project is helping the host country fulfill its goals of promoting sustainable development. The project is expected to be in line with the host-country specific JI requirements.

The Project Scenario is considered additional in comparison to the baseline scenario, and therefore eligible to receive Emissions Reductions Units (ERUs) under the JI, based on an analysis, presented by the PDD, of investment, technological and other barriers, and prevailing practice.

The project design is sound and the geographical (Donetsk region, Starobeshivskiy district, village Novyj Svit) and temporal (4 years) boundaries of the project are clearly defined.

The identified areas of concern as to Project Design, PP's response and BV Certification's conclusion are described in Appendix A Table 4 (refer to CAR 01, CAR 02, CAR 03, CAR 04, CAR 05, CAR 06, CAR 07, CL 04, CL 01, CL 02, CL 03, CL 25).

The project has no approvals by the Parties involved, therefore CAR 01 remains pending.

### 3.2 Baseline and Additionality

The baseline of the project was calculated in accordance with the main technical and economic index of operation of every power unit of thermal power plant – amount of the specific consumption of conditional fuel for output of unit of electric power.

Developing JI projects in electric power sector in Ukraine is complicated as among the approved CDM baseline and monitoring methodologies there are no suitable ones for use in the projects of type in question. In accordance with the paragraph 9(a) of the «Guidance on criteria for baseline setting and monitoring» (the valid version 02), the project participants are able to choose the project specific approach to baseline setting and monitoring, to be developed in accordance with Appendix B "Criteria for baseline setting and monitoring" to the "Guidelines for the implementation of Article 6 of the Kyoto Protocol" ("JI Guidelines").

The developers of this JI project have elaborated their own specific approach for baseline setting and monitoring to be applied for this project, as well as for other projects of such type in Ukraine.

This project specific approach for baseline setting and monitoring elaborated for the JI project "Rehabilitation and technical re-equipment of Starobeshivska thermal power plant of the OJSC "Donbasenergo" fully



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meets the general requirements of Appendix B "Criteria for baseline setting and monitoring" to the "JI Guidelines".

Approach and algorithm used for estimation of emission reduction and baseline setting for the proposed JI project are in general the same as in "Tool to calculate project or leakage CO<sub>2</sub> emissions from fossil fuel combustion" Option B (version 02). These approach and algorithm also determine the monitoring plan applied in the proposed JI project.

The main approach is based on the permanent measuring of the fuel consumption by power units as well as of supply of electric power to the state grid, with amendments for possible parameters changes in baseline comparing to the reported year. The variable parameters may be the changes in fuel quality, its net caloric value, its carbon intensity, share of fuel types, etc.

The given project specific approach is similar to the one used in several JI projects on rehabilitation of the district heating systems in cities and regions of Ukraine, also developed by the Institute of Engineering Ecology ("District Heating System Rehabilitation of Chernihiv Region", "Rehabilitation of the District Heating System in Donetsk Region", "Rehabilitation of the district heating system of Crimea", "Rehabilitation of the District Heating System in Kharkiv City", "District Heating System Rehabilitation in Rivne Region", etc.), that are already determined and verified by accredited independent entities.

The baseline includes CO<sub>2</sub> emissions from fuel combustion by power units of Starobeshivska power plant in course of electric power generation. According to the developed approach, the baseline fuel consumption for each reported year shall be adjusted to the amount of electricity produced in this reported year, and corrected for possible changes of fuel quality such as change of its carbon intensity and net caloric value, etc.

The basic assumptions of the baseline methodology are:

- Baseline consumption of tons of coal equivalent corresponds to annual electricity supplied to the electricity grid by the project activity power plant each year of the crediting period
- Specific fuel consumption in year *y* of crediting period corresponds to the average annual consumption during the most recent three historical years *x* prior to the implementation of the project activity
- Correlations between the baseline consumption of fossil fuels type *i* with various carbon intensity and their net calorific value are the same as in year *y* of the crediting period.

Calculation of the dynamic baseline is based on assumption that ratio of fuels with different carbon intensity in base scenario is the same, as in a reported year.



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To demonstrate additionality the "Tool for the demonstration and assessment of additionality", Version 05.2 is used.

The following alternatives of JI project were identified:

- 1- continuation of the current situation;
- 2- project activity without JI mechanism;
- 3- rehabilitation of the whole power plant.

All three alternative scenarios are realistic, credible and are in compliance with the mandatory laws and regulations.

Alternative scenario (1) - Continuation of the current situation with implementation of minimum repair works for support productivity of the power units at existing level on the verge of general degradation of the TPP - represents the common practice in Ukraine and corresponds to the present state of affairs ("business-as-usual"). It is chosen as the baseline for this project.

Investment analysis has demonstrated that JI project scarcely will be more financially attractive or financially attractive at all. The project will not be economically profitable for Supplier without the sale of the CO2 credits that will make implementation of the project impossible.

Barrier analysis regarding investment, technological and organizational barriers demonstrated that application of "business-as-usual" scenario is not prevented by any stated obstacles though it requires minimal repair works to be implemented and is less attractive from the environmental point of view.

However this scenario is more attractive economically.

Minimal annual repair does not result in reduction of basic emissions because the decline of the whole power plant with reduction of efficiency occurs at the same time. This scenario is less attractive for environment for the nearest future (including the first period of obligations for 2008-2012 years), because in the conditions of increase of the share of more intensive carbon fuel the general actual greenhouse gas emissions of power plant will increase. However this scenario is more attractive economically.

Common practice analysis proved that at present there are no similar realized projects for rehabilitation and technical re-equipment of TPP through application of JI mechanisms subject to increase of carbon intensive fuel share besides this project.

As an outcome, the continuation of business as usual is reasonably identified as the most plausible scenario, thus representing the baseline.

The alternative analysis, technological and barrier analysis and common practice analysis have demonstrated that the proposed project activity is not attractive without the revenue from the sale of emission reduction units (ERUs). Accordingly, the Alternative 1 was taken as the baseline.

The identified areas of concern as to Baseline and Additionality, PP's responses and BV Certification's conclusions are described in Appendix A Table 4 (refer to CAR 08, CAR 09, CAR 10, CAR 11, CAR 12, CAR 13, CAR 14, CAR 15, CAR 26, CL 04, CL 05, CL 06, CL 07, CL 08, CL 24).

### 3.3 Monitoring Plan

Monitoring plan chosen for proposed JI project is based on "Guidance on criteria for baseline setting and monitoring" and "Tool to calculate project or leakage CO<sub>2</sub> emissions from fossil fuel combustion" (version 02). The approach chosen by the PPs for the project monitoring is clearly defined and its applicability is fully justified.

Comprehensive baseline information about the project facilities is provided in PDD Section B 1 and Annex 2. Step-by-step application of the used methodologies to the project activity is described in PDD Section D and Annex 3 including monitoring procedures, formulae, parameters, data sources etc.

All categories of data to be collected in order to monitor GHG emission reductions from the project (Option 1) are described in required details.

Allocation of responsibilities for Monitoring Plan implementation and Monitoring Report preparation and an operational and management structure that OJSC "Donbasenergo" will implement to monitor emission reduction are clearly described in the PDD. Organizational scheme for collecting, transfer and processing of data on fuel consumption and electricity supplied to the national grid is presented in Annex 3 of the PDD.

Monitoring related quality control and quality assurance procedures are backed up by the internal verification procedures existing at the plant.

The identified areas of concern as to Monitoring Plan, PP's response and BV Certification's conclusion are described in Appendix A Table 4 (refer to CAR 16 - CAR 19, CAR 23, CAR 25, CL 09 - CL 18).

### 3.4 Calculation of GHG Emissions

Data to be collected in order to monitor the project and baseline emissions is presented in Section D.1.1.1 and D.1.1.3. The key factors that determine GHG emissions under the baseline scenario are the same as for project and include the following:

- fuel consumption,
- net calorific values of the fuels used, and



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- total amount of electricity supplied to the electricity grid generated by power units.

The formulas used for calculation of baseline and project emissions are presented in PDD Section D. The verifiers checked the calculations completed in the PDD version 02 and amended PDD version 04 and found them accurate.

Input data for calculations and the calculations per se are presented on the comprehensive spreadsheet included in Annex A. The verifiers observe the final calculations as accurate. The results are summarised in Section E.

The calculated amount of project emission reduction over the crediting period 2009 - 2012 is 656 293 tCO<sub>2</sub>e. The annual average emission reduction is 164 073 tCO<sub>2</sub>e.

The identified area of concern as to Calculation of GHG Emissions, PP's response and BV Certification's conclusion is described in Appendix A Table 4 (refer to CAR 20, CAR 21, CAR 24, CL19, CL20, CL 21, CL 26, CL 28 – CL 31).

### 3.5 Environmental Impacts

There are no significant adverse environmental impacts resulting from implementation of activities within the frameworks of this project.

The environmental impact assessment of the project was carried out in accordance with the Ukrainian legislation within the framework of the design documentation developed for the reconstruction of Starobeshivska TPP. (Reconstruction of Starobeshivska TPP of "Donbasenergo" PJSC. Power unit No 4 Project. Section 6. Estimation of Environmental impact. Developed by Lurgi Lentjes AG, Germany. Technical re-equipment of power unit No 7, Feasibility study, corrected. Book 3. Estimation of Environmental impact. 59-1006-TEO 3, Developed by: DPI NDI "Teploelectroproekt" "Donbasenergo" PJSC).

The project has met the key requirements of Ukrainian environmental legislation; its implementation will lead to mitigation of negative environmental impacts.

The level of impact upon air, surface waters and land resources is within the permissible limits. The company has all necessary environmental licenses, permits and limits granted by the state authorized organs. (For the completed list of documents checked on site by the determination team, please, refer to Section 6 of the present Report).



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Since the usual activity of Starobeshivska TPP does not cause any transboundary environmental impacts (environmental impacts are in limits of permissions), no transboundary environmental impacts of the project are expected and, thus, they are not considered in the analysis.

The identified area of concern as to Environmental Impacts, PP's response and BV Certification's conclusion is described in Appendix A Table 4 (refer to CAR 22, CL22, CL 23, CL 27).

### **3.6 Comments by Local Stakeholders**

The stakeholders viewed "Rehabilitation and technical re-equipment of Starobeshivska thermal power plant of the OJSC "Donbasenergo" project as contributing to sustainable development and improvement of ecological situation through fuel saving and corresponding reduction of greenhouse gas and pollution emissions.

No areas of concern as to comments by local stakeholders are identified.

## **4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS**

According to the modalities for the Determination of JI projects, the AIE shall make publicly available the project design document and receive, within 30 days, comments from Parties, stakeholders and non-governmental organizations and make them publicly available.

Bureau Veritas Certification published the project documents on the Bureau Veritas website ([www.bureauveritas.com.ua](http://www.bureauveritas.com.ua)) on 27/05/2010 and invited comments within 26/06/2010 by Parties, stakeholders and non-governmental organizations.

No comments from the third parties have been received during the designated period.

## **5 DETERMINATION OPINION**

Bureau Veritas Certification has performed a determination of the "Rehabilitation and technical re-equipment of Starobeshivska thermal power plant of the OJSC "Donbasenergo" Project in Ukraine. The determination was performed on the basis of UNFCCC criteria for JI projects, in particular the verification procedures under the JI Supervisory Committee, as well as host country criteria and the criteria given to provide for consistent project operations, monitoring and reporting.

The determination is based on the information made available to us and the engagement conditions detailed in this report. The determination has been performed using a risk-based approach as described above. The



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only purpose of the report is its use for the formal approval of the project under JI mechanism. Hence, Bureau Veritas Certification cannot be held liable by any party for decisions made or not made based on the determination opinion, which will go beyond that purpose.

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.

The review of the project design documentation, the subsequent follow-up interviews, and the resolution of the Corrective Action Requests have provided Bureau Veritas Certification with the sufficient evidences to determine the fulfillment of the above stated criteria and to demonstrate that the project is additional.

The investment analysis and common practice analysis demonstrate that the proposed project activity is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. Given that it is implemented and maintained as designed, the project is likely to achieve the estimated amount of emission reductions.

In the process of document review, it was observed by the determination team that neither reference nor a documented evidence regarding estimation of remaining lifetime of power equipment conducted by the specialized organization "DONORGRES", were available or provided to the AIE. Thus, CAR 09 is not closed and remains a subject for checking out during the periodic verification.

If the written approval and the authorization by the host Party are awarded, it is our opinion that the project as described in the Project Design Document, Version 05 dated 05/08/2010 meets all the relevant UNFCCC requirements for the determination stage and the relevant host Party criteria.

## 6 REFERENCES

### Category 1 Documents:

Documents that relate directly to the GHG components of the project.

- /1/ PDD "Rehabilitation and technical re-equipment of Starobeshivska thermal power plant of the OJSC "Donbasenergo" version 02 of 10/10/2009 with supporting documentation



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- /2/ PDD "Rehabilitation and technical re-equipment of Starobeshivska thermal power plant of the OJSC "Donbasenergo" version 03 of 30/04/2010
- /3/ PDD "Rehabilitation and technical re-equipment of Starobeshivska thermal power plant of the OJSC "Donbasenergo" version 04 of 30/06/2010
- /4/ PDD "Rehabilitation and technical re-equipment of Starobeshivska thermal power plant of the OJSC "Donbasenergo" version 05 of 05/08/2010
- /5/ Letter of Endorsement for the JI project "Rehabilitation and technical re-equipment of Starobeshivska thermal power plant of the OJSC "Donbasenergo" #6140/11/10-08 dated 15/05/2008.
- /6/ JISC Guidance on criteria for baseline setting and monitoring. Version 02.
- /7/ Tool for the demonstration and assessment of additionality, Version 05.2.
- /8/ Protocol #6 of Supervisory board meeting of OJSC "Donbasenergo" dated 11.07.2008.

### Category 2 Documents:

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

- /1/ Act on the movement and fuel remains in tonnes for 31.03.2008 dated 04.03.2008.
- /2/ Act of acceptance-delivery of natural gas dated 01.04.2008.
- /3/ Act of acceptance-delivery of natural gas dated 05.05.2008.
- /4/ OJSC "Donetskshahbud". Separate unit "Educational Centre". Protocol #225 dated 29.08.2008 of testing of knowledge and the Equipment Rules and the safe operation of vessels working under pressure НПАОП 0.00-1.07.-94, pipeworks of steam and hot water НПАОП 0.00-1.11-98, steam and hot-water boilers НПАОП 0.00-1.08-94, safety of gas supply system of Ukraine НПАОП 0.00-1.20-98.
- /5/ Automatic conveyor scales 1202 BAK Passport ОПА 101.00.000 Verification date 17.09.2009.
- /6/ Opinion of state ecological expertise concerning the project "Starobeshivska TPP OJSC "Donbasenergo". Reconstruction. Block #4/ Project Lot1 "Boiler 2" Drier" #9248/08/1-5 dated 28.11.01.
- /7/ Newspaper. Voice of power engineer #19 (2553) dated 6.06.2008. Statement of environmental implications of modernization of power generating unit #9 of Starobeshivska TPP.
- /8/ Newspaper. Voice of power engineer #20 (2554) dated 13.06.2008. Statement of intention of Starobeshivska TPP to receive the permit for emissions of pollutants from the boiler with the atmospheric circulating fluidized bed of the power generating unit #4.
- /9/ Newspaper. Voice of power engineer #40 dated 07.11.2008. Statement of environmental implications of implementation of the project" Starobeshivska TPP. Polygon of solid waste of capacity 8 thousand cubic meters per year for the pgt. Novyi Svet".
- /10/ Newspaper. Voice of power engineer. Statement of intention of Starobeshivska TPP to receive the permit for emissions of pollutants.
- /11/ Newspaper. Voice of power engineer. Statement of environmental implications of



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- modernization of the power generating unit #7 equipment of Starobeshivska TPP.
- /12/ USSR State Standard. Combustible natural gases. Method of determining the specific heat of combustion.
- /13/ Schedule of metrological control of strain gauge balance for the year 2009.
- /14/ Schedule of inspections and maintenance belt (conveyor) weights at №9A-2, 9Б-2, 7A TТЦ dated 08.01.2009.
- /15/ Contract between Open-end joint stock company Donbasenergo and Alstom power environmental system AB 08.11.2000.
- /16/ Contract between Open-end joint stock company Donbasenergo and Lurgi Lentjes AG dated 13.04.2000.
- /17/ Annex to the permit for emissions of atmospheric pollutants by stationary sources #1424555400-3a.
- /18/ Permit #142455540-3 for emissions of atmospheric pollutants by stationary sources dated 26.12.2008.
- /19/ Permit #1424555400-3a on amendments to permit #1424555400-3 on emissions of atmospheric pollutants by stationary sources from 20.02.2009.
- /20/ Permit #37.06 dated 23.11.2007 for the waste disposal in the year 2008. Valid from 01.01.2008 to 31.12.2008.
- /21/ Permit #37.05 dated 25.09.2008 for the waste disposal in the year 2009. Valid from 01.01.2009 to 01.01.2010.
- /22/ Journal of gas calorific value from 21.09.2008.
- /23/ Journal of black oil fuel calorific value from 09.06.2006.
- /24/ Journal of solid fuel calorific value from 09.06.2006.
- /25/ Journal of daily and five-day analysis results.
- /26/ Consolidated complex opinion #44-A. U.C. Ukrainian Investment Expertise concerning the project "Starobeshivska TPP". Reconstruction. Block of station #4" OJSC "Donbasenergo".
- /27/ Report on air protection for 2007.
- /28/ Report on air protection for 2008.
- /29/ Report on air protection for 2007.
- /30/ Report on formation, processing and disposal of waste of I-III hazard class for 2008.
- /31/ Waste inventory for 2007.
- /32/ Calibration tables.
- /33/ Sale-purchase agreement on emission reduction units (ERU) №125610020000070 dated 23.04.2008.
- /34/ Licence АБ №220585 issued by OJSC "Donbasenergo" for electricity production. Validity term of licence begins from 19.09.1996.
- /35/ Licence АБ № 220586 issued by OJSC "Donbasenergo" for electricity production according to the uncontrollable rate. Validity term of licence begins from 03.09.1997.
- /36/ Interstate standard. Solid mineral fuel. Determination of gross calorific value and the calculation of net calorific value, 1997.
- /37/ Passport to conveyor scales БКП ser. #006.95 dated 06.11.2007. Verification date: 14.09.09. Approval certificate. Platform conveyor scales БКП 1600-200 ПК 114.00.000-04. Ser. #006.95.
- /38/ Passport ПК 114.00.000 ПС. Platform conveyor scales БКП dated 01.04.1993. Approval certificate. Platform conveyor scales БКП 1600-200 ПК 114.00.000-04 ser. #006.95.
- /39/ Passport to steel vertical cylindrical tank. Technology map.
- /40/ Letter on issuance of permits and limits for formation and disposal of wastes for 2010 #04-100/6952 dated 02.12.2009.



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- /41/ Letter concerning the issuance of permits on the waste disposal for 2010 #10-5819 dated 29.09.09.
- /42/ Letter #1773 for Konstantinov G.K concerning training certificates dated 15.07.2005.
- /43/ Certificate #31575 given to Fedovyn O.M. after his training and showing the necessary knowledge of construction rules of safety operation of vessels working under the pressure, steam and hot water pipes, steam and hot water boilers, safety of gas supply system.
- /44/ Certificate #5169 issued by SOE "Specialized training center" to Fomin S.M. that he trained and showed the necessary knowledge of the head of changes of KTLЦ on construction rules of the safe operation of boilers, vessels and pipelines, which work under pressure dated 22.02.2008.
- /45/ Protocol of the meeting of the staff examination comity of Starobeshivska TPP that trained at the course "Modern ЦКC-technology" (10-13.04.2007).
- /46/ Protocol of the meeting of commission verifying the knowledge of operational staff of KTLЦ #1 of Starobeshivska TPP that trained the course "Design and operation of heat and mechanical equipment of the unit 210 MW with the boiler АЦКC-670 and turbines K-200-130-1ПР1 dated 20.11.2007"
- /47/ Protocol of enlarged meeting of technical board OJSC "Donbasenergo" dated 17.05.2007.
- /48/ Protocol. 5 days coal sample from 01.03.2008 to 05.03.2008.
- /49/ Certificate of acceptance. Conveyor scale 1202 BAK-140 ser. #16.
- /50/ Certificate #30127 issued to Galkovskiy A.V. of assignment of fifth level of the boilers driver dated 28.12.2008.
- /51/ Certificate #52 of state metrological attestation dated 23.01.2009. Automatic calorimeter AC-500 #3407.
- /52/ Certificate #497 of working measurement device verification dated 29.10.2009. Valid to 29.10.2010.
- /53/ Certificate #1605 of working measurement device verification dated 12.05.2009. Valid to 12.05.2010.
- /54/ Certificate issued by Department of training and control of the company "Siemens" at the Starobeshivska TPP.
- /55/ Certificate issued by the Institute of coal energy technologies to Lavarko A.V. that he trained the course "Modern ЦКШ-technology" dated April 2007.
- /56/ Certificate issued by the Institute of coal energy technologies to Shmonin S.I. that he trained the course "Modern ЦКШ-technology" dated April 2007.
- /57/ List of participants of training С6ТЭC. ПГ 01.1 - Boiler. ПГ 01.4 - Chimney. ПГ 01.6 - Boiler shop equipment dated 20.08.2007.
- /58/ List of participants of training С6ТЭC ПГ 03 Connecting pipelines dated 22.08.2007.
- /59/ List of participants of training С6ТЭC ПГ 06.1 - Compressor station. ПГ 01.9. - The distribution of compressed air dated 20.08.2007.
- /60/ List of participants of training С6ТЭC. ПГ 01.1 - Boiler. ПГ 01.5 - Internal black oil and gas industry dated 21.08.2007.
- /61/ List of participants, personal training (labour safety rules) of Starobeshivska Thermal Power Plant. PS05 - External Ash banding system dated 04.08.2008.
- /62/ List of personnel training of service and maintenance staff of Starobeshivska Thermal Power Plant, 26.08.2008.
- /63/ Reconstruction of Starobeshivska PTT OJSC "Donbasenergo". Block #4. Project Lot1 "Boiler"/2 "Dryer". Section 6 Environmental impact assessment #-OBOC Volume 6, 2000.
- /64/ Daily record Starobeshivska TPP for 30 December 2008.
- /65/ Daily record Starobeshivska TPP for December 2008 dated 31.12.2008.
- /66/ Daily record for 2008. The movement of fuel to production.
- /67/ Daily record of ВЛ 220 kW and ВЛ 110 kW, 35 kW for 2007.



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- /68/ Daily record of ВЛ 220 kW and ВЛ 110 kW, 35 kW for December 2008.
- /69/ Daily report of shift supervisor of Starobeshivska TPP dated 09.03.2008.
- /70/ Daily report of shift supervisor of Starobeshivska TPP dated 10.03.2008.
- /71/ Technical and economic parameters of the work equipment for 2007 Starobeshivska TPP. General station parameters.
- /72/ Technical and economic parameters of the work equipment for 2007 Starobeshivska TPP. Parameters of the steam-boilers.
- /73/ Technical and economic parameters of the work equipment for 2007 Starobeshivska TPP. Parameters of the steam-turbines.
- /74/ Technical and economic parameters of the work equipment for 2008. Starobeshivska TPP. General station parameters.
- /75/ Technical and economic parameters of the work equipment for 2008. Starobeshivska TPP. Parameters of the steam-boilers.
- /76/ Technical and economic parameters of the work equipment for 2008. Starobeshivska TPP. Parameters of the steam-turbines.
- /77/ Certificate #30127 issued to Galkovskiy A.V. that he graduated the training course centre OJSC "Donetskshahtobud" dated 18.03.2008.
- /78/ Training course centre. OJSC "Donetskshahtobud". Protocol #59 dated 18.03.2008 of the meeting of qualification and attestation commission for realization of competency attestation of the workers that trained the course of the speciality thermal power "boilers operator" using gas, liquid and solid fuel.
- /79/ Photo - Scale #254558
- /80/ Photo - Heat combustion measurement PM-02.2 inv. #5052
- /81/ Photo - Boiler TK3 6 bl. Type ТП-100 reg. #KC 30127
- /82/ Photo - Meter Alpha №01002619
- /83/ Photo - Meter inv. №5038
- /84/ Photo - Meter SL761A071 #3614863
- /85/ Photo - Meter SL761A071 #3614865
- /86/ Photo - Meter SL761A071 #36148672
- /87/ Photo - Meter SL761A071 #55024827
- /88/ Photo - Calculator of volume gas inv. #5038

**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/ Smirnov Igor Khristoforovich – Deputy General Director, OJSK "Donbasenergo"
- /2/ Sidorchenko Nataliya Grygoriivna – Chief of Capital Development Department, OJSK "Donbasenergo"
- /3/ Nichvolodov Aleksandr Petrovich – Deputy Director on Capital Development, Starobeshivska TPP



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- /4/ Bekerov Valery Ametovich – Deputy Chief Engineer, Starobeshivska TPP
- /5/ Fedorenko Elena Vasiljevna – Deputy Chief of Production and Technical Department, Starobeshivska TPP
- /6/ Oleinikov Yury Gennadievich – Chief of Water Engineering Department, Starobeshivska TPP
- /7/ Bakhmatskaya Ella Gennadievna – Chief of Chemical Laboratory within the Chemical Workshop, Starobeshivska TPP
- /8/ Pavliuk Nonna Yuriivna – Senior Scientist, Institute of Engineering Ecology

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## APPENDIX A: COMPANY JI PROJECT DETERMINATION PROTOCOL

**Table 1 Mandatory Requirements for Joint Implementation (JI) Projects**

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
1. The project shall have the approval of the Parties involved	Kyoto Protocol Article 6.1 (a)	CAR 01. The project has no approval of the host Party. After finishing project determination report, the PDD and Determination Report will be presented to National Environmental Investments Agency of Ukraine for receiving the Letter of Approval. The Letter of Approval from the country - investor will be provided after approval of project by Ukraine.	Table 2, Section A.5
2. Emission reductions, or an enhancement of removal by sinks, shall be additional to any that would otherwise occur	Kyoto Protocol Article 6.1 (b)	OK	Table 2, Section B
3. The sponsor Party shall not acquire emission reduction units if it is not in compliance with its obligations under Articles 5 & 7	Kyoto Protocol Article 6.1 (c)	OK	N/A



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REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
<p>4. The acquisition of emission reduction units shall be supplemental to domestic actions for the purpose of meeting commitments under Article 3</p>	<p>Kyoto Protocol Article 6.1 (d)</p>	<p>OK</p>	<p>N/A</p>
<p>5. Parties participating in JI shall designate national focal points for approving JI projects and have in place national guidelines and procedures for the approval of JI projects</p>	<p>Marrakech Accords, JI Modalities, §20</p>	<p>Both countries have designated their Focal Points. National guidelines and procedures for approving JI projects have been published.</p> <p>Contact data in Ukraine:. National Environmental Investment Agency of Ukraine 35, Urytskogo str. 03035 Kiev Ukraine Email: info.neia@gmail.com</p> <p>Mr. Orlenko Serghiy, Head of National Environmental Investment Agency of Ukraine Phone: +380445949111 Fax: +380 44 594 9115 Email: info.neia@gmail.com</p> <p>National guidelines and procedures for the approval</p>	


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REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
		<p>of JI projects are available at <a href="http://www.neia.gov.ua">www.neia.gov.ua</a></p> <p>Contact data in the Netherlands: Ministry of Economic Affairs SenterNovem Catharijnesingel 59 P.O. Box 8242 3503 RE Utrecht Netherlands</p> <p>Mr. Derk de Haan Phone: +31 30 239 3413 Email: <a href="mailto:d.de.haan@senternovem.nl">d.de.haan@senternovem.nl</a></p> <p>National guidelines and procedures for the approving JI projects are available at <a href="http://ji.unfccc.int/UserManagement/FileStorage/XQ0CYFTBQDSELQJSZUKHKRMANMD6QD">http://ji.unfccc.int/UserManagement/FileStorage/XQ0CYFTBQDSELQJSZUKHKRMANMD6QD</a></p>	
<b>6.</b> The host Party shall be a Party to the Kyoto Protocol	Marrakech Accords, JI Modalities, §21(a)/24	The Ukraine is a Party (Annex I Party) to the Kyoto Protocol and has ratified the Kyoto Protocol at April 12th, 2004.	


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REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
7. The host Party's assigned amount shall have been calculated and recorded in accordance with the modalities for the accounting of assigned amounts	Marrakech Accords, JI Modalities, §21(b)/24	In the Initial Report submitted by Ukraine on 29. Dec. 2006 the AAUs are quantified with: 925 362 174.39 (x 5) = 4 626 810 872 tCO <sub>2</sub> -e	
8. The host Party shall have in place a national registry in accordance with Article 7, paragraph 4	Marrakech Accords, JI Modalities, §21(d)/24	The designed system of the national registry has been described in the Initial Report mentioned above	
9. Project participants shall submit to the independent entity a project design document that contains all information needed for the determination	Marrakech Accords, JI Modalities, §31	OJSC "Donbasenergo" has submitted the PDD to Bureau Veritas Certification, which contains information needed for determination.	
10. The project design document shall be made publicly available and Parties, stakeholders and UNFCCC accredited observers shall be invited to, within 30 days, provide comments	Marrakech Accords, JI Modalities, §32	The PDD was made publicly available through AIE website from 27/05/2010 till 26/06/2010.	
11. Documentation on the analysis of the environmental impacts of the project activity, including transboundary impacts, in accordance with procedures as determined by the host Party shall be submitted, and, if those impacts are considered significant by the project participants or the Host Party, an environmental impact assessment in accordance with procedures as required by the Host Party shall be carried out	Marrakech Accords, JI Modalities, §33(d)	OK	Table 2, Section F
12. The baseline for a JI project shall be the scenario that	Marrakech	OK	Table 2, Section B



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REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
reasonably represents the GHG emissions or removal by sources that would occur in absence of the proposed project	Accords, JI Modalities, Appendix B		
<b>13.</b> A baseline shall be established on a project-specific basis, in a transparent manner and taking into account relevant national and/or sectoral policies and circumstances	Marrakech Accords, JI Modalities, Appendix B	OK	Table 2, Section B
<b>14.</b> The baseline methodology shall exclude to earn ERUs for decreases in activity levels outside the project activity or due to force majeure	Marrakech Accords, JI Modalities, Appendix B	OK	Table 2, Section B
<b>15.</b> The project shall have an appropriate monitoring plan	Marrakech Accords, JI Modalities, §33(c)	OK	Table 2, Section D
<b>16.</b> A project participant may be: (a) A Party involved in the JI project; or (b) A legal entity authorized by a Party involved to participate in the JI project.	JISC “Modalities of communication of Project Participants with the JISC” Version 01, Clause A.3	Conclusion is pending until Letters of Approval authorizing the project participants by Parties involved will be issued (ref. CAR 01).	Table 2, Section A



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**Table 2 Requirements Checklist**

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Final Concl
<i>A. General Description of the project</i>				OK


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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS		Final Concl
<b>A.1 Title of the project</b>				OK	
A.1.1. Is the title of the project presented?		DR	The title of the project is indicated: "Rehabilitation and technical re-equipment of Starobeshivska thermal power plant of the OJSC "Donbasenergo".	OK	OK
A.1.2. Is the current version number of the document presented?		DR	The current version of the project is indicated. See section A.1.	OK	OK
A.1.3. Is the date when the document was completed presented?		DR	The date of completeness of the current version of the project design document is 30/06/2010.	OK	OK
<b>A.2. Description of the project</b>				OK	
A.2.1. Is the purpose of the project included?		DR	The main purpose of the project is decreasing of fuel consumption in the power generation cycle at Starobeshivska TPP through implementation of technically available energy saving technologies in order to facilitate sustainable development and improve ecological situation through fuel saving and corresponding reduction of greenhouse gases and pollution emissions.	OK	OK
A.2.2. Is it explained how the proposed project reduces greenhouse gas emissions?		DR	Proposed project covers rehabilitation and technical re-equipment of some units of Starobeshivska TPP, and employs the increase in fuel consumption efficiency aiming to reduce greenhouse gas emissions relative to current practice.	OK	OK


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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS		Final Concl
			<b>CAR 02.</b> Please, provide a brief description of the Baseline scenario in section A.2.	CAR 02	OK
<b>A.3. Project participants</b>				OK	
A.3.1. Are project participants and Party(ies) involved in the project listed?		DR	Parties involved in the project are the following: OJSC «Donbasenergo» (Ukraine) and E-Energy B.V. (The Netherlands).	OK	OK
A.3.2. Are project participants authorized by a Party involved?		DR	<b>CL 01.</b> Please, clarify whether the project participants are authorized by a Party involved.	CL01	OK
A.3.3. The data of the project participants are presented in tabular format?		DR	Information on the project participants is presented (see section A.3. of the PDD).	OK	OK
A.3.4. Is contact information provided in annex 1 of the PDD?		DR	Contact information on the project participants is provided in Annex 1 of the PDD version 03.	OK	OK
A.3.5. Is it indicated, if it is the case, if the Party involved is a host Party?		DR	Ukraine is indicated as a Host Party.	OK	OK
<b>A.4. Technical description of the project</b>				OK	
<b>A.4.1. Location of the project activity</b>				OK	
A.4.1.1. Host Party(ies)		DR	Ukraine is indicated as a Host Party.	OK	OK
A.4.1.2. Region/State/Province etc.		DR	Donetsk region	OK	OK
A.4.1.3. City/Town/Community etc.		DR	Novyj Svit village, Starobeshevsky district	OK	OK



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<p>A.4.1.4. Detail of the physical location, including information allowing the unique identification of the project. (This section should not exceed one page)</p>		DR	<p>Starobeshivska TPP is situated on the South-East of Ukraine in 27 km to the South from the city of Donetsk on the left bank of Starobeshevo water reservoir, at the distance of 11 km from Starobeshevo village. The nearest inhabited place is village Novyj Svit. Coordinates: <u>47°48'00" N I, 38°00'00" E I.</u></p> <p>All the information is provided according to the template and does not exceed one page.</p>	OK	OK
<p>A.4.2. Technology(ies) to be employed, or measures, operations or actions to be implemented by the project</p>				OK	
<p>A.4.2.1. Does the project design engineering reflect current good practices?</p>		DR	<p>The project design engineering represents current good practices of using high efficiency technology of air circulating boiling layer and other methods for electricity production.</p> <p><b>CAR 03.</b> Please, reorganise figure A.4 in the PDD and present all information in this figure in English.</p> <p><b>CL 25.</b> There is no information on the activities implemented before the JI project starts.</p> <p>Please, provide this information in the</p>	CAR 03  CL 25	OK  OK



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			implementation schedule.	
A.4.2.2. Does the project use state of the art technology or would the technology result in a significantly better performance than any commonly used technologies in the host country?		DR	As stated in the PDD, the project uses more efficient technology and units. <b>CAR 04.</b> Please, indicate whether the project uses the-state-of-the-art technology or would the technology result in a significantly better performance than any commonly used technologies in the host country.	CAR 04 OK
A.4.2.3. Is the project technology likely to be substituted by other or more efficient technologies within the project period?		DR	<b>CL 02.</b> Please, give grounds in section A.4.2. for whether the given technology is likely to be substituted by other or more efficient technologies within the project period.	CL 02 OK
A.4.2.4. Does the project require extensive initial training and maintenance efforts in order to work as presumed during the project period?		DR	<b>CAR 05.</b> Please, state in section A.4.2 whether the project requires extensive initial training and maintenance efforts.	CAR 05 OK
A.4.2.5. Does the project make provisions for meeting training and maintenance needs?		DR	<b>CL 03.</b> Please, clarify in section A.4.2 of the PDD, are additional provisions for meeting training and maintenance needs envisaged.	CL 03 OK
A.4.3. Brief explanation of how the anthropogenic emissions of greenhouse gases by sources are to be reduced by the proposed JI project, including why the emission reductions would not occur in the absence of the proposed project, taking into account national and/or sectoral policies and circumstances				OK



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A.4.3.1. Is it stated how anthropogenic GHG emission reductions are to be achieved? (This section should not exceed one page)		DR	Based on information stated in the PDD, improvement of the power efficiency of equipment and fuel saving in the process of power will result in reduction of the CO2 emissions. The information is provided according to the requirements and does not exceed one page.	OK	OK
A.4.3.2. Is it provided the estimation of emission reductions over the crediting period?		DR	The estimation of emission reductions over the crediting period is provided in Table A.3 in section A.4.3.1 of the PDD version 3.0. <b>CAR 06.</b> Format of the table in section A.4.3.1 is changed. Please, make appropriate correction. <b>CAR 07.</b> Information connected with estimation of the emission reduction in Table A.3 of the PDD does not correspond to the calculations presented in excel spreadsheets of Appendix A. Please, correct nonconformity.	CAR 06  CAR 07	OK  OK
A.4.3.3. Is it provided the estimated annual reduction for the chosen credit period in tCO <sub>2</sub> e?		DR	The estimated annual reduction for the chosen credit period in tCO <sub>2</sub> e is provided in Table A.3 in section A.4.3.1. of the PDD version 3.0. Please, refer to CAR07.	-	OK
A.4.3.4. Are the data from questions A.4.3.2 to A.4.3.4 above		DR	Yes, the data on emission reduction	OK	OK



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presented in tabular format?			calculation is presented in tabular format (see Table A.3 of the PDD).		
<b>A.5. Project approval by the Parties involved</b>				OK	
A.5.1. Are written project approvals by the Parties involved attached?		DR, I	<p>The Project has received the Letter of Endorsement #6140/11/10-08 dated 15.05.2008 from the Ministry of Environmental Protection of Ukraine.</p> <p>The Project is supported by the Ministry of Fuel and Energy of Ukraine and JSC "Donbassenergo" (Protocol of the "Donbassenergo" Technical Council meeting dated 22.05.2008)</p> <p>The contract on ERUs selling between the Seller (JSC "Donbassenergo") and the Buyer ("E-energia") is signed.</p> <p>After finishing the Project determination procedure, the PDD and Determination Report will be submitted to the National Environmental Investment Agency of Ukraine for receiving the Host Country Letter of Approval. Refer to CAR01.</p>	-	Pending
<b>B. Baseline</b>				OK	
<b>B.1. Description and justification of the baseline chosen</b>				OK	
B.1.1. Is the chosen baseline described?		DR	Project participants have established a project specific approach (taking into consideration methodologies ACM0002,		



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B.1.2. Is it justified the choice of the applicable baseline for the project category?			ACM0011, and AM0061) to baseline setting and monitoring in accordance with appendix B of the “Criteria for baseline setting and monitoring” to the “JI Guidelines”.  <b>CL 04.</b> Please, specify which elements, approaches and algorithms from “Tool to calculate project or leakage CO2 emissions from fossil fuel combustion” (version 02) have been used while establishing a baseline.	CL 04 OK
	DR		The elaborated specific approach for this project is similar to the approach used in several determined and verified JI projects on rehabilitation of the district heating systems in cities and regions of Ukraine, also developed by the Institute of Engineering Ecology.	OK OK
B.1.3. Is it described how the methodology is applied in the context of the project?			This is a JI specific approach. Its application is described in a complete and transparent manner.	OK OK
B.1.4. Are the basic assumptions of the baseline methodology in the context of the project activity presented (See Annex 2)?			<b>CL 05.</b> Please, summarize basic assumptions of the baseline methodology in the context of the project activity in section B.1 and in Annex 2.	CL 05 OK
B.1.5. Is all literature and sources clearly referenced?			<b>CAR 08.</b> Please, correct the reference to Annex 1 in section A.4.1.1 of the PDD.	CAR 08 OK
	DR		<b>CAR 09.</b> Please, provide the reference to «Procedure for estimating remaining lifetime	CAR 09 Pendi ng



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			<p>of the power equipments» in the first table of the parameter of Annex 2.</p> <p><b>CL 24.</b> Please, clarify what the following abbreviations stand for and make appropriate amendments to PDD: UCTE (p.8); VTV, PTC, RD (p.59); VTS (p.65)</p> <p><b>CAR 26.</b> The format of tables containing the key information and data used to establish the baseline in Annex 2 is modified. Please, bring it in line with the requirements of Guidelines for users of the JI PDD form. Otherwise, provide this information in the required tabular form in Section B.1. as well.</p>	<p>CL 24</p> <p>CAR 26</p>	<p>OK</p> <p>OK</p>
<b>B.2. Description of how the anthropogenic emissions of greenhouse gases by sources are reduced below those that would have occurred in the absence of the JI project</b>				OK	
B.2.1. Is the proposed project activity additional?		DR	<p>The four-step-wise approach (“Tool for the demonstration and assessment of additionality (version 05.2)”) is applied to demonstrate additionality of the project. The requirements of the applied tool are met; the proposed activities are reasonably explained, consequently, the project is considered to be additional.</p> <p><b>CAR 10.</b> Please, explicitly indicate the</p>	CAR 10	OK



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			approaches in section B.2 of the PDD. <b>CAR 11.</b> According to the “Tool for the demonstration and assessment of additionality (version 05.2)” you should provide sub-steps 4a and 4b under Step 4. Without conducting these sub-steps the proposed project activity can not be considered additional.	CAR 11	OK
B.2.2. Is the baseline scenario described?		DR	<b>CAR 12.</b> Please, provide in section B.2 a clear and vivid statement on which baseline scenario is chosen.	CAR 12	OK
B.2.3. Is the project scenario described?		DR	The project scenario is clearly described and compared to the baseline one with the help of the “Tool for the demonstration and assessment of additionality (version 05.2)”.	OK	OK
B.2.4. Is an analysis showing why the emissions in the baseline scenario would likely exceed the emissions in the project scenario included?		DR	The analysis presented in PDD showed that the emissions in the baseline scenario would likely exceed the emissions in the project scenario due to the use of the inefficient equipments for power production. Implementation of the project measures will improve the power efficiency of equipment and will decrease the specific fuel charges for electric energy production. Fuel saving upon power production and reduction of power charges for own needs of power units will result in reduction of the CO <sub>2</sub> emissions.	OK	OK
B.2.5. Is it demonstrated that the project activity itself is		DR	Yes, it is demonstrated that the project		



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not a likely baseline scenario?			activity itself is not a likely baseline scenario in the section B.2 of the PDD.	OK	OK
B.2.6. Are national policies and circumstances relevant to the baseline of the proposed project activity summarized?		DR	Establishment of the baseline is carried out with taking into account the mandatory law and regulations (see section B.2 of the PDD).	OK	OK
<b>B.3. Description of how the definition of the project boundary is applied to the project activity</b>				OK	
B.3.1. Are the project’s spatial (geographical) boundaries clearly defined?		DR	<p>All emission sources which are subjected to the impacts and are under the project control are included to the project boundary.</p> <p><b>CAR 13.</b> Project participants must undertake an assessment of the potential leakage of the proposed JI project and explain which sources of leakage are to be calculated, and which can be neglected.</p> <p><b>CL 06.</b> It is stated in the PDD section B.3 that CH4 is excluded from consideration for simplification based on conservative analysis. Please, provide justification for this statement.</p> <p><b>CL 07.</b> Please, provide justification for the exclusion of the emissions connected with the fuel production and transportation from the project boundary.</p>	CAR 13  CL 06  CL 07	OK  OK  OK


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<b>B.4. Further baseline information, including the date of baseline setting and the name(s) of the person(s)/entity(ies) setting the baseline</b>				OK	
B.4.1. Is the date of the baseline setting presented (in DD/MM/YYYY)?		DR	<b>CAR 14.</b> Please provide date of baseline setting (DD/MM/YYYY).	CAR 14	OK
B.4.2. Is the contact information provided?		DR	The contact information is provided. Engineering Ecology is the project's developer, and OJSC "Donbasenergo" is the project's supplier.	OK	OK
B.4.3. Is the person/entity also a project participant listed in Annex 1 of PDD?		DR	The entity is the project participant listed in Annex 1 of the PDD version 02.	OK	OK
<b>C. Duration of the project and crediting period</b>				OK	
<b>C.1. Starting date of the project</b>				OK	
C.1.1. Is the project's starting date clearly defined?		DR	The project's starting date is 16/05/2007 (see to section C.1. of the PDD). <b>CL 08.</b> Please, indicate which document confirms the starting date of the project.	CL 08	OK
<b>C.2. Expected operational lifetime of the project</b>				OK	
C.2.1. Is the project's operational lifetime clearly defined in years and months?		DR	<b>CAR 15.</b> Please define the expected operational lifetime of the project in years and months.	CAR 15	OK
<b>C.3. Length of the crediting period</b>				OK	
C.3.1. Is the length of the crediting period specified in years and months?		DR	Yes, the length of the crediting period is specified in correct order.	OK	OK



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			The starting date of the crediting period was the expected date of first generated ERUs, namely: January 01, 2009.	
<b>D. Monitoring Plan</b>				OK
<b>D.1. Description of monitoring plan chosen</b>				OK
D.1.1. Is the monitoring plan defined?		DR	<p>The monitoring plan adopted for the project is aimed to insure the availability of all data necessary to define emission levels in the baseline and project scenarios. It goes in line with the Guidance on criteria for baseline setting and monitoring, approved by JISC. Monitoring of GHG generation comes to the measurements of fuel consumption quantity, its calorific value, as well as measurements of productive energy supply to the grid. The other parameters will be obtained by calculations and from the adopted norms.</p> <p><b>CAR 16.</b> Please, indicate the approach in section D.1 of the PDD.</p> <p><b>CL 09.</b> Please, clarify what OCB stands for in Annex 3.</p> <p><b>CL 10.</b> There is a mistake after tables of parameters in Annex 3. It is stated “GG emissions”. Please, correct it and indicate as “GHG emissions”.</p> <p><b>CL 11.</b> Please, present in Annex 3 a chart</p>	<p>CAR 16 OK</p> <p>CL 09 OK</p> <p>CL 10 OK</p>



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			of data flow from the primary data source (measuring equipment) to the archiving system (computer database)with indication of the persons responsible for each monitoring step and the monitoring process on the whole.	CL 11	OK
D.1.2. Option 1 – Monitoring of the emissions in the project scenario and the baseline scenario.		DR	A detailed records management system has been established to record and document all required data. It includes paper and electronic records maintained by the staff of the production and technical department, fuel transportation shop, chemical laboratory and Accountant Department. Please, refer to <b>CL 11</b> .	OK	OK
D.1.3. Data to be collected in order to monitor emissions from the project, and how these data will be archived.		DR	<p>Data to be collected in order to monitor emissions from the project are presented in Table D.1.1.1 in the PDD version 03. These data will be archived both in electronic and paper way.</p> <p><b>CL 12.</b> Please, precisely indicate frequency of recording of the fuel consumption and net calorific value in the Table of section D.1.1.1.</p> <p><b>CL 13.</b> Please, explain what is meant by “in total for year” in connection with total amount of electricity supplied to the electricity grid.</p>	CL 12  CL 13	OK  OK


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D.1.4. Description of the formulae used to estimate project emissions (for each gas, source etc.; emissions in units of CO2 equivalent).		DR	See Section D.1.1.2. of the PDD version 03. The formulae used in the PDD is in conformity with the one from the Methodological tool used.	OK	OK
D.1.5. Relevant data necessary for determining the baseline of anthropogenic emissions of greenhouse gases by sources within the project boundary, and how such data will be collected and archived.		DR	Relevant data necessary for determining the baseline of anthropogenic emissions of greenhouse gases by sources within the project boundary are presented in the Table D.1.1.3 in the PDD version 03. These data will be archived both in electronic and paper way.	OK	OK
D.1.6. Description of the formulae used to estimate baseline emissions (for each gas, source etc.; emissions in units of CO2 equivalent).		DR	See Section D.1.1.4 of the PDD version 03.	OK	OK
D.1.7. Option 2 – Direct monitoring of emissions reductions from the project (values should be consistent with those in section E)		DR	Not applicable. See section D.1.2.	OK	OK
D.1.8. Data to be collected in order to monitor emission reductions from the project, and how these data will be archived.		DR	Not applicable. See section D.1.2.	OK	OK
D.1.9. Description of the formulae used to calculate emission reductions from the project (for each gas, source etc.; emissions/emission reductions in units of CO2 equivalent).		DR	See Section D.1.2.2. of the PDD version 03.	OK	OK
D.1.10. If applicable, please describe the data and information that will be collected in order to monitor leakage effects of the project.		DR	Leakages are not included. <b>CAR 17.</b> Please, state in the PDD section D.1.3.1 whether it was left blank on purpose	CAR 17	OK


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			or not. <b>CL 14.</b> Please, clarify in what way dynamic baseline excludes all possible leakages. <b>CL 15.</b> Please, indicate in what way all accidental leakage of emissions will be removed.	CL 14 CL15	OK OK
D.1.11. Description of the formulae used to estimate leakage (for each gas, source etc.; emissions in units of CO2 equivalent).		DR	Not applicable as no leakages are included. See Section D.1.3.2. of the PDD version 03.	OK	OK
D.1.12. Description of the formulae used to estimate emission reductions for the project (for each gas, source etc.; emissions in units of CO2 equivalent).		DR	See Section D.1.4. of the PDD version 03.	OK	OK
D.1.13. Is information on the collection and archiving of information on the environmental impacts of the project provided?		DR, I	<b>CAR 18.</b> PDD lacks information on monitoring the environmental impacts. Please, provide information on the procedures of monitoring and archiving of data on the environmental impacts of the project. <b>CAR 23.</b> Information on person in charge of monitoring of environmental impacts of the project should be included to the Management and Operational Structure.	CAR 18 CAR 23	OK OK
D.1.14. Is reference to the relevant host Party regulation(s) provided?		DR, I	Project's influence on environment is determined according to the several permits of the host Party. Refer to section D.1.5 of	CL 16	OK



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			the PDD. <b>CL 16.</b> Please, submit to the determination team Permit No. Ukr-Don-3776 and Permit No.37.05 that are stated in the PDD section D.1.5.		
D.1.15. If not applicable, is it stated so?		DR, I	See section D.1.5 of the PDD.	OK	OK
<b>D.2. Qualitative control (QC) and quality assurance (QA) procedures undertaken for data monitored</b>				OK	
D.2.1. Are there quality control and quality assurance procedures to be used in the monitoring of the measured data established?		DR	See section D.2 of the PDD version 03 and Annex 3. <b>CL 17.</b> Please, specify/name according to which national regulations measurement equipment is calibrated. <b>CL 18.</b> Please, explain/prove why all monitored data have low uncertainty level.	CL 17 CL 18	OK OK



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<b>D.3. Please describe of the operational and management structure that the project operator will apply in implementing the monitoring plan</b>				OK	
D.3.1. Is it described briefly the operational and management structure that the project participants(s) will implement in order to monitor emission reduction and any leakage effects generated by the project		DR	The operational and management structure to monitor emission reduction generated by the project is described in section D.3 and annex 3 of the PDD version 03. Please, refer to CL 11. <b>CAR 25.</b> Operational and Management Structure for the project monitoring does not describe troubleshooting procedure, responsible persons and their roles.	CAR 25	OK
<b>D.4. Name of person(s)/entity(ies) establishing the monitoring plan</b>				OK	
D.4.1. Is the contact information provided?		DR	The contact information is provided in the Annex 1 of the PDD version 03.	OK	OK
<ul style="list-style-type: none"> <li>Is the person/entity also a project participant listed in Annex 1 of PDD?</li> </ul>		DR	<b>CAR 19.</b> Please, indicate if the person/entity is also a project participant listed in Annex 1.	CAR 19	OK
<b>E. Estimation of greenhouse gases emission reductions</b>				OK	
<b>E.1. Estimated project emissions</b>				OK	
E.1.1. Are described the formulae used to estimate anthropogenic emissions by source of GHGs due the project?		DR	It is stated in the PDD that Project Carbon Emission Factors are assumed equal to the Baseline Carbon Emission Factors CO <sub>2</sub> e. <b>CL 19.</b> Please, provide explanations to this	CL 19	OK



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E.1.2. Is there a description of calculation of GHG project emissions in accordance with the formula specified in for the applicable project category?		DR	statement. The estimated values of the project emissions are presented in PDD section E.1. An excel spreadsheet was made available to the verifiers. See CAR 07 <b>CAR 20.</b> Calculations of GHG project emission reductions are inconsistent (See Table E.1., E.5. and excel spreadsheets)	CAR 20	OK
E.1.3. Have conservative assumptions been used to calculate project GHG emissions?		DR	<b>CL 20.</b> Please, show in the PDD whether conservative assumptions have been used to calculate project GHG emissions.	CL 20	OK
<b>E.2. Estimated leakage</b>				OK	
E.2.1. Are described the formulae used to estimate leakage due to the project activity where required?		DR	Project participants consider the possible leakages insignificant, therefore don't include them to the calculation. Refer to CAR 13 in Section B.3. of the present Protocol.	OK	OK
E.2.2. Is there a description of calculation of leakage in accordance with the formula specified in for the applicable project category?		DR	Not applicable. See section E.2.1 of the present Protocol. Refer to CAR 13 in Section B.3. of the present Protocol.	OK	OK
E.2.3. Have conservative assumptions been used to calculate leakage?		DR	Not applicable. See section E.2.1 of the present Protocol. Refer to CAR 13 in Section B.3. of the	OK	OK



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			present Protocol.		
<b>E.3. The sum of E.1 and E.2.</b>				OK	
E.3.1. Does the sum of E.1. and E.2. represent the small-scale project activity emissions?		DR	It is a large scale project	OK	OK
<b>E.4. Estimated baseline emissions</b>				OK	
E.4.1. Are described the formulae used to estimate the anthropogenic emissions by source of GHGs in the baseline using the baseline methodology for the applicable project category?		DR	The formulae used to estimate the anthropogenic emissions by source of GHGs in the baseline using the baseline methodology for the applicable project category is described in Section D.	OK	OK
E.4.2. Is there a description of calculation of GHG baseline emissions in accordance with the formula specified in for the applicable project category?		DR	Description of calculation of GHG baseline emissions for the applicable project are presented in the table E.3 and Excel table of Annex A.	OK	OK
E.4.3. Have conservative assumptions been used to calculate baseline GHG emissions?		DR	<b>CL 21.</b> Please, clarify in the PDD Section E whether conservative assumptions have been used to calculate baseline GHG emissions.	CL 21	OK
<b>E.5. Difference between E.4. and E.3. representing the emission reductions of the project</b>				OK	
E.5.1. Does the difference between E.4. and E.3. represent the emission reductions due to the project during a given period?		DR	See Table E.4 of the PDD version 03. <b>CAR 24.</b> Please, line up the figure in the last column in Table E.4.	CAR 24	OK



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<b>E.6. Table providing values obtained when applying formulae above</b>				OK	
E.6.1. Is there a table providing values of total CO <sub>2</sub> abated?		DR	<p>There is a table E.5 providing values of total CO<sub>2</sub> abated.</p> <p><b>CAR 21.</b> Format of the table in section E.6 is modified. Please, correct the table E.5 of the PDD.</p> <p>Refer to <b>CAR 20.</b></p> <p><b>CL 26.</b> Please, explain what caused the difference in calculation of emission reduction in the PDD version 02 and 04?</p> <p><b>CL 28.</b> It is stated in the PDD on p.2 that the content of ash in the burnt coal increases. At the same time its NCV in the period 2006-2008 increases as well from 4968 to 5315). How could it be explained?</p> <p><b>CL 29.</b> Why is the quality of coal and natural gas supposed to be worse in the years 2009-2012 comparing to 2006-2008, and the quality of black oil to be better?</p> <p><b>CL 30.</b> Please explain why NCV of coal in 2009 is the highest?</p> <p><b>CL 31.</b> Please, provide your comments on the following:</p>	<p>CAR 24</p> <p>CL 26</p> <p>CL 28</p> <p>CL 29</p> <p>CL 30</p> <p>CL 31</p>	<p>OK</p> <p>OK</p> <p>OK</p> <p>OK</p> <p>OK</p> <p>OK</p>



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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS		Final Concl
			Ratio of coal, natural gas and black oil consumption in the period 2006-2008 makes approximately 90:9:1, and is quite stable. Why does the ratio in the proposed baseline scenario in the period 2009-2012. make 6:4:0? When recalculated according to the ratio of 90:9:1, the baseline emissions will be lower than those offered (22,714,900 tCO <sub>2</sub> ). Then the reduction of emissions for the years 2009-2012 will make 117,721 tCO <sub>2</sub> , not 656 293 tCO <sub>2</sub> .		
<b>F. Environmental Impacts</b>				OK	
<b>F.1. Documentation on the analysis of the environmental impacts of the project, including transboundary impacts, in accordance with procedures as determined by the host Party</b>				OK	
F.1.1. Has an analysis of the environmental impacts of the project been sufficiently described?		DR, I	Analysis of the environmental impacts of the project is sufficiently described in the section F of the project design document.  <b>CL 27.</b> It is stated in Table B.2. that N <sub>2</sub> O emissions will appear in project scenario after implementation of the combustion technology with air circulating boiling layer at power unit #4. Please, provide information on whether this has been treated and reflected in the TPP environmental documentation?	CL 27	OK



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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS		Final Concl
F.1.2. Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is and EIA approved?		DR, I	<p>According to Ukrainian legislation, an Environmental Impact Assessment (EIA), as a part of the project design documents, has been done for the proposed project and approved by local authority.</p> <p><b>CL 22.</b> There is an assumption that statement "Estimation of Environmental Impact" in the PDD means Environmental Impact Assessment (EIA). Please, correct the statement in the PDD section F.1 according to the standard phrase.</p>	CL 22	OK
F.1.3. Are the requirements of the National Focal Point being met?		DR, I	Refer to section F.1 of the PDD.	OK	OK
F.1.4. Will the project create any adverse environmental effects?		DR, I	The project creates some adverse environmental effects connected with wastes. Detailed information is described in the section F.2 of the PDD.	OK	OK
F.1.5. Are transboundary environmental considered in the analysis?		DR, I	<b>CAR 22.</b> The information considering transboundary environmental effects is not provided. Please, include the one into section F of the PDD.	CAR 22	OK
F.1.6. Have identified environmental impacts been addressed in the project design?		DR, I	Yes, in support of the positive environmental effect of the project statements 1 to 4 are provided in section F.1, as well as in section F.2 of the PDD.	OK	OK


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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS		Final Concl
<b>G. Stakeholders' comments</b>				OK	
<b>G.1. Information on stakeholders' comments on the project, as appropriate</b>				OK	
G.1.1. Is there a list of stakeholders from whom comments on the project have been received?		DR	The Stakeholders' comments were presented in several publications. Project «Reconstruction and technical re-equipment of Starobeshivska TPP of "Donbasenergo" PJSC was presented at XVIII International conference „Problems of ecology and operation of energy facilities" (Yalta, June 10-14, 2008), and at XIX International conference „Problems of ecology and operation of energy facilities" (Yalta, June 8-12, 2009), where it was comprehensively discussed by the representatives of generating companies and potential investors.	OK	OK
G.1.2. The nature of comments is provided?		DR	See section G.1.1 above.	OK	OK
G.1.3. Has due account been taken of any stakeholder comments received?		DR	See section G.1.1 above.	OK	OK




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**Table 3 Legal requirements**

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
<b>1. Legal requirements</b>					
1.1. Is the project activity environmentally licensed by the competent authority?		DR, I	<b>CL 23.</b> Please, clarify whether the project activity is environmentally licensed by the competent authority.	CL 23	OK
1.2. Are there conditions of the environmental permit? In case of yes, are they already being met?		DR, I	There are conditions of the environmental permit. It is indicated in the PDD and in the list of documents of the report.	OK	OK
1.3. Is the project in line with relevant legislation and plans in the host country?		DR, I	This project is in line with relevant legislation and plans of the Host country.	OK	OK



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**Table 4 Resolution of Corrective Action and Clarification Requests**

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, and 4	Summary of project owner response	Determination team conclusion
<b>CAR 01.</b> The project has no approval of the host Party.	Table 1, 1	National Environmental Investment Agency of Ukraine issued the Letter of Endorsement for this JI project (# 6140/11/10-08 from 15.05.2008). Only after finishing project determination report, the PDD and Determination Report will be presented to National Environmental Investment Agency of Ukraine for receiving the Letter of Approval. The Letter of Approval from the country - investor will be provided after approval of project by Ukraine.	Pending
<b>CAR 02.</b> Please, provide a brief description of the Baseline scenario in section A.2.	Table 2, A.2.2	Brief description of the Baseline scenario is added into section A.2 of the PDD v.04.	CAR 02 is closed based on the amendment made to the PDD.
<b>CAR 03.</b> Please, reorganise figure A.4 in the PDD and present all information in this figure in English.	Table 2, A.4.2.1	Figure A.4 is excluded from the PDD v.04.	CAR 03 is closed based on the change made to the PDD.
<b>CAR 04.</b> Please, indicate whether the project uses the-state-of-the-art technology or would the technology result in a significantly better performance than any commonly used technologies in the host	Table 2, A.4.2.2	The project uses the-state-of-the-art technologies, as well as the technology of the air circulating boiling layer that would be the first example in Ukraine and would result in a significantly better performance than any commonly used technologies in the country.	CAR 04 is closed based on the exhaustive explanation provided by the PPs.


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<b>Draft report clarifications and corrective action requests by determination team</b>	<b>Ref. to checklist question in tables 1, 2, and 4</b>	<b>Summary of project owner response</b>	<b>Determination team conclusion</b>
country.		This information is added into section A.4.2 of the PDD v.04.	
<b>CAR 05.</b> Please, state in section A.4.2 whether the project requires extensive initial training and maintenance efforts.	Table 2, A.4.2.4	Standard training procedures are established at the plant, and staff is qualified enough for making maintenance work. Since the boiler's air circulating boiling layer is quite different technology from the commonly used technologies in Ukraine, the corresponding special initial training of operating staff will be necessary in addition to the usual professional training. This information is added into section A.4.2 of the PDD v.04.	CAR 05 is closed based on the exhaustive explanation provided by the PPs.
<b>CAR 06.</b> Format of the table in section A.4.3.1 is changed. Please, make appropriate correction.	Table 2, A.4.3.2	Format of the table in section A.4.3.1 is corrected in the PDD version 04 according to the "Guidelines for users of the JI PDD form" version 04.	CAR 06 is closed based on the respective corrections made to the PDD.
<b>CAR 07.</b> Information connected with estimation of the emission reduction in Table A.3 of the PDD does not correspond to the calculations presented in excel spreadsheets of Appendix A. Please, correct nonconformity.	Table 2, A.4.3.2	The difference in Table A.3 of the PDD v/03 and excel spreadsheets of Appendix A was caused by rounding. Calculations in excel spreadsheets of Appendix A and Table A.3 of the PDD are corrected and correspond to each other in the PDD v.04.	CAR 07 is closed based on the corrections made to the PDD.


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<b>Draft report clarifications and corrective action requests by determination team</b>	<b>Ref. to checklist question in tables 1, 2, and 4</b>	<b>Summary of project owner response</b>	<b>Determination team conclusion</b>
<b>CAR 08.</b> Please, correct the reference to Annex 1 in section A.4.1.1 of the PDD.	Table 2, B.1.5	The reference to Annex 1 in section A.4.1.1 of the PDD is corrected in the PDD version 04.	CAR 08 is closed based on the corrections made by the PPs.
<b>CAR 09.</b> Please, provide the reference to «Procedure for estimating remaining lifetime of the power equipments» in the first table of the parameter of Annex 2.	Table 2, B.1.5	Estimation of remaining lifetime of the power equipment is conducted by the specialized organization “DONORGRES” This is corrected in the PDD v.04  No reference is available.	CAR 09 is not closed.  Please, provide to the AIE estimation of remaining lifetime of power equipment conducted by the specialized organization “DONORGRES”  Estimation of remaining lifetime of power equipment conducted by the specialized organization “DONORGRES” will be checked during periodic verification.
<b>CAR 10.</b> Please, explicitly indicate the approaches in section B.2 of the PDD.	Table 2, B.2.1	For demonstration of additionality the approach (c), defined in paragraph 2 of the Annex I to the “Guidance on criteria for baseline setting and monitoring” is used. This is explicitly indicated in section B.2 of the PDD v.04.	CAR 10 is closed based on the amendments made to the PDD.


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<b>Draft report clarifications and corrective action requests by determination team</b>	<b>Ref. to checklist question in tables 1, 2, and 4</b>	<b>Summary of project owner response</b>	<b>Determination team conclusion</b>
<p><b>CAR 11.</b> According to the "Tool for the demonstration and assessment of additionality (version 05.2)" you should provide sub-steps 4a and 4b under Step 4. Without conducting these sub-steps the proposed project activity can not be considered additional.</p>	<p>Table 2, B.2.1</p>	<p>The sub-steps 4a and 4b under Step 4 according to the "Tool for the demonstration and assessment of additionality (version 05.2)" are provided in section B.2 of the PDD version 04.</p>	<p>CAR 11 is closed based on the provided information.</p>
<p><b>CAR 12.</b> Please, provide in section B.2 a clear and vivid statement of which baseline scenario is chosen.</p>	<p>Table 2, B.2.2</p>	<p>The clear and vivid statement of which baseline scenario is chosen is provided in section B.2 of the PDD v.04.</p>	<p>Explanation is accepted based on the explanation provided by the PPs. CAR 12 is closed.</p>
<p><b>CAR 13.</b> Project participants must undertake an assessment of the potential leakage of the proposed JI project and explain which sources of leakage are to be calculated, and which can be neglected.</p>	<p>Table 2, B.3.1</p>	<p>Within the framework of this Project, leakages may occur when coal, natural gas and black oil are delivered to the Starobeshivska TPP. Their may be caused by:</p> <ul style="list-style-type: none"> <li>- Physical losses when natural gas is delivered via the gas transmission system. This leakages are not controlled by the project participants.</li> <li>- CO2 emissions that occur as a result of the consumption of fuel when coal and black oil are delivered by railway. This leakages are not controlled by the project</li> </ul>	<p>CAR 13 is closed based on the information amended to the PDD.</p>


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Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, and 4	Summary of project owner response	Determination team conclusion
		<p>participants.</p> <p>In Baseline scenario fuel is delivered in larger volumes than in the project scenario, therefore there might be more leakages versus the Project activity. This leads to an increase of emission reductions in the project scenario. Accordingly, from the viewpoint of a conservative estimate, such leakages are ignored.</p> <p>This information is added into section B.3 of the PDD v.04</p>	
<b>CAR 14.</b> Please provide date of baseline setting (DD/MM/YYYY).	Table 2, B.4.1	Date of baseline setting is provided in corresponding format (31/03/2008) in section B.4 of the PDD v.04.	CAR 14 is closed based on the appropriate corrections made to the PDD.
<b>CAR 15.</b> Please define the expected operational lifetime of the project in years and months.	Table 2, C.2.1	The expected operational lifetime of the project is defined in section C.2 of the PDD v.04.	CAR 15 is closed based on the proper corrections made by the PPs.
<b>CAR 16.</b> Please, indicate the approach in section D.1 of the PDD.	Table 2, D.1.1	The JI specific approach is used for monitoring plan .The monitoring plan chosen is described in accordance with paragraph 30 of the "Guidance on criteria for baseline setting and monitoring". Information is provided in section D.1 and Annex 3 of the	CAR 16 is closed based on the explanations provided by the PPS.


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<b>Draft report clarifications and corrective action requests by determination team</b>	<b>Ref. to checklist question in tables 1, 2, and 4</b>	<b>Summary of project owner response</b>	<b>Determination team conclusion</b>
		PDD v.04	
<b>CAR 17.</b> Please, state in the PDD section D.1.3.1 whether the Table was left blank on purpose or not.	Table 2, D.1.10	The Table in the PDD section D.1.3.1 is left blank on purpose. This is stated in PDD v.04.	CAR 17 is closed based on the PPS' explanation.
<b>CAR 18.</b> PDD lacks information on monitoring the environmental impacts. Please, provide information on the procedures of monitoring and archiving of data on the environmental impacts of the project.	Table 2, D.1.13	Information on the procedures of monitoring and archiving of data on the environmental impacts is provided in section D.1.5 of the PDD v.04	CAR 18 is closed based on the comprehensive explanation provided by the PPs.
<b>CAR 19.</b> Please, indicate if the person/entity is also a project participant listed in Annex 1.	Table 2, D.4	This information is indicated in section D.4 of the PDD v.04.	CAR 19 is closed based on amendments made to the PDD.
<b>CAR 20.</b> Calculations of GHG project emission reductions are inconsistent (See Table E.1., E.5. and excel spreadsheets).	Table 2, E.1.2	The inconsistency in Table E.3, E.5 and excel spreadsheets was caused by rounding. Calculations are corrected and made consistent to each other in the PDD v.04.	CAR 20 is closed based on the corrections made to the PDD.
<b>CAR 21.</b> Format of the table in section E.6 is modified. Please, correct the table E.5 of the PDD.	Table 2, E.6.1	Format of the table in section E.6 is corrected in the PDD v.04.	CAR 21 is closed based on the corrections to the PDD.
<b>CAR 22.</b> The information considering transboundary environmental effects is not provided. Please, include the one into section F of the PDD.	Table 2, F.1.5	Any transboundary environmental impacts of the project are not expected and are not considered in the analysis. This is described in section F.1 in the PDD v.04.	CAR 22 is closed based on the provided explanation.


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<b>Draft report clarifications and corrective action requests by determination team</b>	<b>Ref. to checklist question in tables 1, 2, and 4</b>	<b>Summary of project owner response</b>	<b>Determination team conclusion</b>
<b>CAR 23.</b> Information on person in charge of monitoring of environmental impacts of the project should be included to the Management and Operational Structure.	Table 2, D.1.13	This information is added into Annex 3 of the PDD v.04.	Car 23 is closed based on the required information provided in the PDD.
<b>CAR 24.</b> Please, line up the figure in the last column in Table E.4.	Table 2, E.5.1.	The figure in the last column in Table E.4 in the PDD v.04 is lined up.	CAR 24 is closed based on the corrections made to the PDD.
<b>CAR 25.</b> Operational and Management Structure for the project monitoring does not describe troubleshooting procedure, responsible persons and their roles.	Table 2, D.3.1.	The operation troubleshooting procedure at the Starobeshivska TPP is provided in accordance with the internal TPP's procedures by the Service of exploitation and controlled by Deputy Chief Engineer on Operation Bekerov Valeriy Ametovich.  This information is added into Annex 3 of the PDD v.04	CAR 25 is closed based on the amendments made to the PDD.
<b>CAR 26.</b> The format of tables containing the key information and data used to establish the baseline in Annex 2 is modified. Please, bring it in line with the requirements of Guidelines for users of the JI PDD form. Otherwise, provide this information in the required tabular form in Section B.1. as well.	Table 2, B.1.5.	The format of tables containing the key information is corrected in PDD.	Due amendments have been made to Annex 3 of the PDD. CAR 26 is closed.
<b>CL 01.</b> Please, clarify whether the project participants are authorized by a Party involved.	Table 2, A.3.2	Ukrainian project participant OJSC «Donbasenergo» is preliminary authorized by Ukrainian DFP through Letter of	CL 01 is closed.


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<b>Draft report clarifications and corrective action requests by determination team</b>	<b>Ref. to checklist question in tables 1, 2, and 4</b>	<b>Summary of project owner response</b>	<b>Determination team conclusion</b>
		<p>Endorsement for the JI project (№6140/11/10-08 dated May 15, 2008)</p> <p>Final authorization of the project participants through Letter of Approval from Ukraine is expected after submitting the PDD and Determination Report to the National Environmental Investment Agency of Ukraine; the Letter of Approval from The Netherlands will be provided after approval of project by Ukraine.</p>	
<p><b>CL 02.</b> Please, give grounds in section A.4.2. for whether the given technology is likely to be substituted by other or more efficient technologies within the project period.</p>	<p>Table 2, A.4.2.3</p>	<p>Since the project uses the-state-of-the-art technologies, as well as the technology of the air circulating boiling layer that would be the first example in Ukraine and would result in a significantly better performance than any commonly used technologies in the country, these technologies are likely not to be substituted by any other technologies within the project period.</p> <p>This information is added into section A.4.2 of the PDD v.04</p>	<p>CL 02 is closed made on the explanation provided by the PPs and official information on the pilot project on implementation of the air circulating boiling layer technology at Starobeshivska TPP available at Ministry of Fuel and Energy of Ukraine.</p>
<p><b>CL 03.</b> Please, clarify in section A.4.2 of the PDD, whether the additional provisions for meeting training and maintenance needs envisaged.</p>	<p>Table 2, A.4.2.5</p>	<p>Standard periodical training procedures are established at the plant, and staff is qualified enough.</p>	<p>CL 03 is closed based on the information provided by the PPS.</p>



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Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, and 4	Summary of project owner response	Determination team conclusion
		<p>Since the boiler's air circulating boiling layer is quite different from the commonly used technologies in Ukraine, the corresponding initial training of operating staff is envisaged in addition to the usual professional training.</p> <p>This information is added into section A.4.2 of the PDD v.04</p>	
<p><b>CL 04.</b> Please, specify which elements, approaches and algorithms from "Tool to calculate project or leakage CO2 emissions from fossil fuel combustion" (version 02) have been used while establishing a baseline, i.e. justify your choice of the Tool applied.</p>	<p>Table 2, B.1.1</p>	<p>From "Tool to calculate project or leakage CO2 emissions from fossil fuel combustion" (version 02) have been used baseline methodology procedure (1) with Option B for calculated <math>BE^{DYN}</math>, and monitoring methodology procedure for monitoring <math>FC_{i,y}</math>, <math>NCV_{i,y}</math>.</p>	<p>CL 04 is closed based on the explanation provided by the PPS.</p>
<p><b>CL 05.</b> Please, summarize basic assumptions of the baseline methodology in the context of the project activity in section B.1 and in Annex 2.</p>	<p>Table 2, B.1.4</p>	<p>Basic assumptions of the baseline methodology:</p> <ul style="list-style-type: none"> <li>- Baseline consumption of tone of coal equivalent corresponds to annual electricity supplied to the electricity grid by the project activity power plant in year</li> </ul>	<p>CL 05 is closed based on the information added to the PDD by the PPS.</p>



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Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, and 4	Summary of project owner response	Determination team conclusion
		<p>y of the crediting period</p> <ul style="list-style-type: none"> <li>- Specific fuel consumption in year y of crediting period corresponds to the average annual consumption during the most recent three historical years x prior to the implementation of the project activity</li> <li>- Correlations between the baseline consumption of fossil fuels type i with various carbon intensity and their net calorific value are the same as in year y of the crediting period.</li> </ul> <p>This information is added into section B.1 and in Annex 2 of the PDD v.04.</p>	
<p><b>CL 06.</b> It is stated in the PDD section B.3 that CH<sub>4</sub> is excluded from consideration for simplification based on conservative analysis. Please, provide justification for this statement.</p>	<p>Table 2, B.3.1</p>	<p>Methane emission is minor source in processes of fuel combustion. Values of Methane emission factor (<b>MEF</b>) at combustion of the fuel types used at Starobeshivska TPP are respectively:  <b>Coal</b> = 1 kg CH<sub>4</sub>/TJ  <b>Natural gas</b> = 1 kg CH<sub>4</sub>/TJ  <b>Black oil</b> = 3 kg CH<sub>4</sub>/TJ            (From [2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 2, Table 2.2 page 2.17])</p>	<p>CL 06 is closed based on the explanation provided by the PPS.</p>


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<b>Draft report clarifications and corrective action requests by determination team</b>	<b>Ref. to checklist question in tables 1, 2, and 4</b>	<b>Summary of project owner response</b>	<b>Determination team conclusion</b>
		Influence of methane emission is insignificant, therefore it is excluded from consideration.	
<b>CL 07.</b> Please, provide justification for the exclusion of the emissions connected with the fuel production and transportation from the project boundary.	Table 2, B.3.1	The project activity doesn't impact the fuel production and transportation, therefore emissions associated with them are excluded from the project boundary	CL 07 is closed based on the explanation provided by the PPs.
<b>CL 08.</b> Please, indicate which document confirms the starting date of the project	Table 2, C.1.1	The starting date of the project is defined by the Protocol of the extended meeting of the Technical Board of OJSC «Donbasenergo» dated May 16, 2007.  This data of May 16, 2007 is defined as the project starting date.  See Section A.5 of PDD.	CL 08 is closed based on the information available in the PDD.
<b>CL 09.</b> Please, clarify what OCB stands for in Annex 3.	Table 2, D.1.1	OCB is Ukrainian term for ERU left by mistake. This is corrected in the PDD v.04.	CL 09 is closed based on the appropriate correction made to the PDD by the PPs.
<b>CL 10.</b> There is a mistake after tables of parameters in Annex 3. It is stated “GG emissions”. Please, correct it and indicate as “GHG emissions”.	Table 2, D.1.1	This is corrected in the PDD v.04.	CL 10 is closed based on the appropriate correction made to the PDD by the PPs.
<b>CL 11.</b> Please, present in Annex 3 a chart of data flow from the primary data source(measuring equipment) to the	Table 2, D.1.1	A chart of data flow from the primary data source (measuring equipment) to the	CL 11 is closed based on the amendments made to the PDD.


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<b>Draft report clarifications and corrective action requests by determination team</b>	<b>Ref. to checklist question in tables 1, 2, and 4</b>	<b>Summary of project owner response</b>	<b>Determination team conclusion</b>
archiving system (computer database)with indication of the persons responsible for each monitoring step and the monitoring process on the whole.		archiving system (computer database) is added into Annex 3 of the PDD v.04. The persons responsible for each monitoring step and the monitoring are written in Annex 3 of the PDD v.04.	
<b>CL 12.</b> Please, precisely indicate frequency of recording of the fuel consumption and net calorific value in the Table of section D.1.1.1.	Table 2, D.1.3	Recording of the fuel consumption in the Table of section D.1.1.1. should be made daily, and accounted monthly. Net calorific value measurements should be made every five days, and accounted monthly. This is corrected in the PDD v.04	CL 12 is closed based on the explanation provided.
<b>CL 13.</b> Please, explain what is meant by "in total for year" in connection with total amount of electricity supplied to the electricity grid.	Table 2, D.1.3	Recording of the total amount of electricity supplied to the electricity grid in the Table of section D.1.1.1. should be made daily, accounting monthly This is corrected in the PDD v.04	CL 13 is closed based on the corrections made to the PDD.
<b>CL 14.</b> Please, clarify in what way dynamic baseline excludes all possible leakages.	Table 2, D.1.10	This phrase is excluded from the PDD v.04	CL 14 is closed based on the corrections made to the PDD.
<b>CL15.</b> Please, indicate in what way all accidental leakage of emissions will be removed.	Table 2, D.1.10	All accidental leakage of emissions (for example caused by leakages in pipelines, etc.) in accordance with the TPP requirements must be removed as soon as possible by own staff and/or specialized	CL 15 is closed based on the information made available to the AIE.



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		teams	
<p><b>CL 16.</b> Please, submit to the determination team Permit No. Ukr-Don-3776 and Permit No.37.05 that are stated in the PDD section D.1.5.</p>	<p>Table 2, D.1.14</p>	<p>Permit No. Ukr-Don-3776 and Permit No.37.05 that are stated in the PDD section D.1.5 are submitted to the determination team</p>	<p>CL 16 is closed based on the documents made available for the determination team.</p>
<p><b>CL 17.</b> Please, specify/name according to which national regulations measurement equipment is calibrated.</p>	<p>Table 2, D.2.1</p>	<p>All equipment is calibrated in according to State Standards of Ukraine №2708:2006 "The Metrology. Check of facilities of measuring instruments"</p> <p>This information is added into section D.2 and Annex 3 of the PDD v.04</p>	<p>CL 17 is closed based on the information provided and corrections made to the PDD.</p>
<p><b>CL 18.</b> Please, explain/prove why all monitored data have low uncertainty level.</p>	<p>Table 2, D.2.1</p>	<p>The data from the belt-conveyer weighter (for coal) are controlled after installation and regularly controlled and calibrated in accordance with the service instruction of the producer. All defects should be rectified with the consequent calibration.</p> <p>The data from reservoir (for black oil) are regularly controlled and calibrated in accordance with the service instruction of the producer. All defects should be rectified with the consequent calibration.</p> <p>The gas meter is controlled and calibrated by</p>	<p>CL 18 is closed based on the explanation provided and corrections made to the PDD.</p>



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		the gas supplying company in accordance with it's procedures and current legislation. The defected meter should be replaced. This information is added into section D.2 of the PDD v.04 (p.43).	
<p><b>CL 19.</b> It is stated in the PDD that Project Carbon Emission Factors are assumed equal to the Baseline Carbon Emission Factors CO<sub>2</sub>e. Please, provide explanations to this statement.</p>	Table 2, E.1.1	<p>Carbon Emission Factors for Project Fuel Combustion and Carbon Emission Factors for Baseline Fuel Combustion are estimated from the 2006 <i>IPCC Guidelines for National Greenhouse Gas Inventories</i>, Volume 2, Table 2.2 page 2.17.</p> <p>Since these CEFs are energy-based, any changes in NCV will not cause changes in these CEFs.</p>	CL 19 is closed based on the comprehensive explanation provided.
<p><b>CL 20.</b> Please, show in the PDD whether conservative assumptions have been used to calculate project GHG emissions.</p>	Table 2, E.1.3	<p>Calculations of the project GHG emissions are based on fuel consumption calculated according to the specifications in the approved technical plans. Monitoring of emission reductions will be made based on actual fuel consumption.</p> <p>This information is added into section E.6 of the PDD v.04</p>	CL 20 is closed based on the amendments made to the PDD.
<p><b>CL 21.</b> Please, clarify in the PDD Section E whether conservative assumptions have</p>	Table 2, E.4.3	Calculations of the baseline GHG emissions are strictly based on the actual fuel	CL 21 is closed based on the clarification provided by the PPs.


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been used to calculate baseline GHG emissions.		consumption, without using any assumptions. This information is added into section E.6 of the PDD v.04	
<b>CL 22.</b> There is an assumption that statement "Estimation of Environmental Impact" in the PDD means Environmental Impact Assessment (EIA). Please, correct the statement in the PDD section F.1 according to the standard phrase.	Table 2, F.1.2	Yes, the statement "Estimation of Environmental Impact" in the PDD means Environmental Impact Assessment (EIA). This is corrected in the PDD v.04.	CL 22 is closed based on the due correction made to the PDD.
<b>CL 23.</b> Please, clarify whether the project activity is environmentally licensed by the competent authority.	Table 4, 1.1	<p>The maximal environmental impact of the Starobeshivska TPP when project activity was already begun is determined according to the following documents:</p> <ul style="list-style-type: none"> <li>- Permit No.1424555400-3 as of 2008/12/26 for emission of contaminants into the atmospheric air by stationary sources. Valid till: 2015/12/26. (Ministry of environment protection of Ukraine).</li> <li>- Permit No. Ukr-Don-3776 as of 2008/12/22 for special water consumption by Starobeshivska TPP. Valid till: 2012/01/01 (State Department of Environment Protection in Donetsk region).</li> <li>- Permit No.37.05 as of 2008/09/25 for</li> </ul>	CL 23 is closed based on the list of the required documents provided by the PPs.


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		<p>waste disposal in 2009. Valid till: 2010/01/01. (State Department of Environment Protection in Donetsk region).</p> <p>As far as the main activity of Starobeshivska TPP will not change in course of the JI project implementation, the special EIA is not necessary.</p>	
<p><b>CL 24.</b> Please, clarify what the following abbreviations stand for and make appropriate amendments to PDD: UCTE (p.8); VTV, PTC, RD (p.59); VTS (p.65)</p>	<p>Table 2, B.1.5.</p>	<p>This is corrected in the PDD v.04</p>	<p>The PDD has been amended with the required information. CL 24 is closed.</p>
<p><b>CL 25.</b> There is no information on the activities implemented before the JI project starts. Please, provide this information in the implementation schedule.</p>	<p>Table 2, A.4.2.1.</p>	<p>This information is added into section A.4.2 of the PDD v.04</p>	<p>Due amendments have been made to the PDD. CL 25 is closed.</p>
<p><b>CL 26.</b> Please, explain what caused the difference in calculation of emission reduction in the PDD version 02 and 04?</p>	<p>Table 2, E.6.1.</p>	<p>The difference in calculation of emission reduction in the PDD version 02 and 04 is caused the specified values of expense of fuel are used in a project.</p> <p>PDD version 02 : 2010 yr <math>FC_{c,y}=2587.6 \text{ tt}</math> ; 2011 yr <math>FC_{c,y}=2742.9 \text{ tt}</math></p> <p>PDD version 04 : 2010 yr <math>FC_{c,y}=2588.5 \text{ tt}</math> ;</p>	<p>CL 26 is closed based on the explanation provided.</p>


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		2011 yr $FC_{c,y} = 2742.0 \text{ tt}$	
<b>CL 27.</b> It is stated in Table B.2. that N <sub>2</sub> O emissions will appear in project scenario after implementation of the combustion technology with air circulating boiling layer at power unit #4. Please, provide information on whether this has been treated and reflected in the TPP environmental documentation?	Table 2, F.1.1.	In accordance with the Law of Ukraine dated 16.10.1992 № 2707-XII "On Air Protection" ( <a href="http://zakon.rada.gov.ua/cgi-bin/laws/main.cgi?nreg=2707-12">http://zakon.rada.gov.ua/cgi-bin/laws/main.cgi?nreg=2707-12</a> ) N <sub>2</sub> O emissions are not controlled.	CL 27 is closed based on the explanation provided.
<b>CL 28.</b> It is stated in the PDD on p.2 that the content of ash in the burnt coal increases. At the same time its NCV in the period 2006-2008 increases as well from 4968 to 5315). How could it be explained?	Table 2, E.6.1.	Coals which are burned at Starobeshivska TPP have the increased content of ash (more than 25%). But project coal should content not more than 20,8% of ash.	CL 28 is closed based on the explanation provided by the PPs.
<b>CL 29.</b> Why is the quality of coal and natural gas supposed to be worse in the years 2009-2012 comparing to 2006-2008, and the quality of black oil to be better?	Table 2, E.6.1.	The quality of coal, black oil and natural gas NCV in the years 2010-2012 accepted in power strategy of development of the Starobeshivska TPP. The quality of coal, black oil and natural gas NCV in the years 2006-2009 accepted in accordance with the real information from Starobeshivska TPP.	CL 29 is closed based on the information provided by the PPs.
<b>CL 30.</b> Please explain why NCV of coal in 2009 is the highest?	Table 2, E.6.1.	NCV of coal in 2009 accepted in accordance with the real information from Starobeshivska TPP.	CL 30 is closed based on the information provided by the PPs.



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<p><b>CL 31.</b> Please, provide your comments on the following:                      Ratio of coal, natural gas and black oil consumption in the period 2006-2008 makes approximately 90:9:1, and is quite stable. Why does the ratio in the proposed baseline scenario in the period 2009-2012. make 6:4:0? When recalculated according to the ratio of 90:9:1, the baseline emissions will be lower than those offered.</p>	<p>Table 2, E.6.1.</p>	<p>Dynamic JI project baseline was calculated in accordance with the basic technical and economic parameter of each TPP unit - reducing specific consumption of standard fuel for a unit of electrical energy generation.</p> <p>Calculation of dynamic baseline is based on the assumption that the ratio of fuels with different carbon intensity in the baseline scenario is the same as in a project reported year.</p>	<p>Comprehensive comments provided by the PPS are considered reasonable.                      CL 31 is closed.</p>



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## Appendix B: Verifiers CV's

### Work carried out by:

#### **Nadiia Kaiun, M. Sci. (environmental science)**

Team Leader, Climate Change Lead Verifier

Bureau Veritas Ukraine Health, Safety and Environment Department, Project Manager.

Nadiya Kaiun has graduated from National University of Kyiv-Mohyla Academy with the Master Degree in Environmental Science. She is a Lead auditor of Bureau Veritas Certification for Environment Management Systems. She has performed over 15 audits since 2008. She has undergone intensive training on Clean Development Mechanism /Joint Implementation and is involved in the determination/verification of 10 JI projects.

#### **Svitlana Gariyenchyk, Ecology Specialist**

Team Member, Climate Change Verifier

Bureau Veritas Ukraine Health, Safety and Environment Department, Project Manager.

She has 8 year working experience as a Project Manager, Head of Investment, Environmental Programs and Training Department in the company operating in the sphere of ecological audit, management and certification. She is experienced in European Union programs as an environmental protection expert. She followed study and training course within TACIS program on training of managers in the sphere of environmental protection. She has completed intensive training course "Lead verifier of JI projects". She is involved in the determination/verification of 7 JI projects.



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**Olena Manziuk, M.Sci. (environmental science)**

Climate Change Verifier Trainee

Bureau Veritas Ukraine Health, Safety and Environment Department Project Manager

She has graduated from National University of "Kyiv-Mohyla Academy" with the Master Degree in Environmental Science. She has successfully completed IRCA registered Lead Auditor Training Course for Environment Management Systems and Quality Management Systems. Also, Olena has completed training intensive course on Clean Development Mechanism (CDM) /Joint Implementation (JI), and is involved in the verification of 5 JI projects.

**Denis Pishchalov (specialist in economics)**

Team member, Financial Specialist

Bureau Veritas Ukraine, Specialist in economics

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

**The determination report was reviewed by:**

**Ivan G. Sokolov, Dr. Sci. (biology, microbiology)**

Climate Change Lead Verifier

Bureau Veritas Ukraine Health, Safety and Environment Department Manager.

Ivan Sokolov has over 25 years of experience in Research Institute in the field of biochemistry, biotechnology, and microbiology. He is a Lead Auditor of Bureau Veritas Certification for Environment Management Systems



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(IRCA registered), Quality Management Systems (IRCA registered), Occupational Health and Safety Management Systems, and Food Safety Management Systems. Mr. I.Sokolov has performed over 140 audits since 1999. He is a Lead Tutor of IRCA registered ISO 14000 EMS Lead Auditor Training Course, Lead Tutor of IRCA registered ISO 9000 QMS Lead Auditor Training Course. Ivan Sokolov is also a Tutor of Join Implementation/Clean Development Lead Verifier Training Course and has performed determination/verification of more than 50 JI projects.