DETERMINATION REPORT

VEMA S.A.

DETERMINATION OF THE

"IMPLEMENTATION OF ENERGY EFFICIENCY MEASURES AT SE "DONETSKA ZALIZNYTSYA"

REPORT №UKRAINE-DET/0391/2011

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BUREAU VERITAS CERTIFICATION

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DETERMINATION REPORT

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Client: VEMA S.A.	Client ref.: Fabian Knodel

Summary:

Bureau Veritas Certification has made the determination of the "Implementation of energy efficiency measures at SE "Donetska zaliznytsya" project of VEMA S.A. located in Donetsk, Lugansk, Dnipropetrovsk, Zaporizhzhya and Kharkiv regions, 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 study of project's baseline, monitoring plan and other relevant documents. It 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 these requests, the project proponent revised its project design document.

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

Report No.: UKRAINE-det/0391/2011	Subject Group: JI
Project title: "Implementation of energy efficiency measures at SE "Donetska zaliznytsya"	
Work carried out by: Oleg Skoblyk – Team Leader, Climate Change Lead Verifier Olena Manziuk – Team Member, Climate Change Lead Verifier	
Work reviewed by: Ivan Sokolov - Internal Technical Reviewer Juliya Berdnikova – Technical specialist	
Work approved by: Flavio Gomes - Operational Manager	

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1 INTRODUCTION

VEMA S.A. has commissioned Bureau Veritas Certification to determine its JI project “Implementation of energy efficiency measures at SE “Donetska zaliznytsya” (hereafter called “the project”) located Donetsk, Lugansk, Dnipropetrovsk, Zaporizhzhya and Kharkiv regions, 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 to 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 and obligatory to provide assurance to stakeholders of the quality of the project and its intended generation of emissions reductions units (ERUs).

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

1.2 Scope

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

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

1.3 Determination team

The determination team consists of the following personnel:

Oleg Skoblyk – Bureau Veritas Certification Team Leader, Climate Change Lead Verifier

Olena Manziuk
Bureau Veritas Certification Team member, Climate Change Lead Verifier

This determination report was reviewed by:

Ivan Sokolov
Bureau Veritas Certification Internal technical reviewer

Juliya Berdnikova Bureau Veritas Certification Climate Change Specialist

2 METHODOLOGY

The overall determination, from Contract Review to Determination Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.
In order to ensure transparency, a determination protocol was customized for the project, according to the version 01 of the "Joint Implementation Determination and Verification Manual", issued by the Joint Implementation Supervisory Committee at its 19 meeting on 04/12/2009. The protocol shows, in a transparent manner, criteria (requirements), means of verification and the results from determining the identified criteria.

The determination protocol serves the following purposes:

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

The determination protocol consists of two tables and is enclosed in Appendix A to this report.

2.1 Review of Documents

The Project Design Document (PDD version 01 dated 01/11/2011) together with such additional documents related to the project design, baseline and monitoring plan, as: host country Law, Guidelines for users of the joint implementation project design document form, Approved CDM methodology and Guidance on criteria for baseline setting and monitoring, the Kyoto Protocol, Clarifications on Determination Requirements to be checked by an Accredited Independent Entity, were submitted by VEMA S.A.

To address Bureau Veritas Certification corrective action, forward action

and clarification requests, VEMA S.A. revised the PDD and resubmitted it on 12/12/2011 as version 02 which is deemed final.

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

2.2 Follow-up Interviews

On 05/12/2011 Bureau Veritas Certification performed on-site interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of SE "Donetska zaliznytsya" and VEMA S.A. were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1. Interview topics

Interviewed organization	Interview topics
SE "Donetska zaliznytsya"	➢ Project History ➢ Project approach ➢ Project boundary ➢ Schedule of implementation ➢ Organizational Structure ➢ Responsibilities and obligations ➢ Training ➢ Quality control procedures and technologies ➢ Modernization / installation of equipment (records) ➢ Control of metering equipment ➢ The system of keeping records of measurements, the database ➢ Technical Documentation ➢ Monitoring Plan and procedures ➢ Permits and licenses ➢ Environmental Impact Assessment ➢ Answers of stakeholders
VEMA S.A.	➢ Baseline methodology ➢ Monitoring Plan ➢ Additionality proofs ➢ The calculations of emission reductions ➢ Project design ➢ Legal issues relating to the project ➢ Environmental Impacts ➢ Approval of the host party

2.3 Resolution of Clarification and Corrective Action Requests

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

Corrective Action Requests (CAR) are issued, where:

(a) The project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions;

(b) The JI requirements were not met;

(c) There is a risk that it will be impossible to monitor or calculate emission reductions.

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

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

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

3 PROJECT DESCRIPTION

SE «Donetska zaliznytsya» was registered by the Executive committee of Donetsk City Council in May 1998. The company is included into the structure of the Ministry of Infrastructure of Ukraine. The company is subordinated to the State Administration of Railway Transport of Ukraine (Ukrzaliznytsya).

SE «Donetska zaliznytsya» provides transportation services for more than 1.8 thousand cargo owners at 189 stations open for freight traffic. The link between the railway and the users is 172 trade offices and 16 branches.

Based on the fact that provision of freight and passenger rail transportation is complex and includes all administrative and technical resources and means of SE «Donetska zaliznytsya», it is impossible to divide modernization of the facilities into separate directions. Therefore,

the project provides for a comprehensive modernization of facilities of SE «Donetska zaliznytsya», leading to reduced consumption of electricity, diesel and fossil fuels.

The main purpose of the Joint Implementation Project (JIP) "Implementation of energy efficiency measures at SE "Donetska zaliznytsya" is decrease in consumption of energy resources in the course of rendering services on cargo and passengers rail transportation.
Complex modernization includes:

1. Modernization of locomotive facilities that will result in decrease of electric power and diesel fuel consumption in the course of rendering services on cargo and passenger transportation;

2. Modernization of the heat supply system that will result in decrease of electric power and fossil fuel consumption in the course of rendering services on cargo and passenger transportation;

3. Modernization of buildings and structures that will result in decrease of heat energy consumption in the course of rendering services on cargo and passenger transportation;

4. Modernization of transformer sub-stations that will result in decrease of electric power losses and consumption in the course of rendering services on cargo and passenger transportation.

The project provides for the following measures and technologies:

- Introduction of electric locomotives DE1 of domestic manufacture for cargo and passenger transportation.
- Modernization of diesel-powered locomotives by means of split-phase start system (SPSS).
- Introduction of the system of control and accounting of diesel fuel consumption of «BIS-R» type.
- Implementation of multifunctional additive «Adizol T-6».
- Introduction of the system of control over fuel consumption and operating modes of diesel engines of diesel-powered locomotives of "Delta SU" type.
- Modernization of diesel locomotives with the diesel engines 4D80.
- Introduction of high-efficiency natural gas-based boilers.
- Replacement of burners.
- Installation of contact and contactless heat-utilization gas-cleaning apparatus.
- Replacement of heat networks with pre-insulated pipelines in boiler-houses.
- Replacement of heat networks with pre-insulated pipelines.
- Implementation of frequency control devices of pump electrical drives.
- Replacement of circulating pumps of heat supply and HWS system.
- The use of modern gas meters.
- Installation of solar collectors in order to use solar energy for heat supply.
- Thermal insulation of external walls and roofs of buildings and structures to improve their thermal resistance.
- Replacement of windows to improve the efficiency of their thermal resistance.

- Introduction of automated system for commercial metering of electricity consumption (ASCMEC) along the perimeter of SE «Donetska zaliznytsya».
- Replacement of cables and wires at transformer sub-stations.
- Replacement of transformers at transformer substations.
- Replacement of meters with lower accuracy class by meters with higher accuracy class.

Maximal decrease in energy resources consumption that will result in reduction of GHG emissions into the atmosphere will be achieved due to complex modernization of company's facilities under the project "Implementation of energy efficiency measures at SE "Donetska zaliznytsya".

The determination protocol includes CARs and CLs for the 1 st and 2 nd versions of the PDD.

4 DETERMINATION CONCLUSIONS

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

The findings from the desk review of the inital project design document and the findings from interviews during the follow up visit are described in the Determination Protocol in Appendix A.

The Clarification, Corrective Action Requests and Forward Action Requests are stated, where applicable, in the following sections and are further documented in the Determination Protocol in Appendix A. The determination of the Project resulted in 43 Corrective Action Requests and 7 Clarification Requests.

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

4.1 Project approvals by Parties involved (19-20)

The project "Implementation of energy efficiency measures at SE "Donetska zaliznytsya" has already obtained support of the government of Ukraine, namely a Letter of Endorsement №3306/23/7 dated 09/11/2011 issued by the State Environmental Investment Agency.
Bureau Veritas Certification got this letter from the Project Participants and has no doubts in its authenticity.

The project obtained a written approval from the Federal Office for the Environment (FOEN) (Switzerland) – the Letter of Approval №J294-0485 dated 28/11/2011.

After completion of Determination Report the project documentation will be submitted to the State Environmental Investment Agency of Ukraine for obtaining a Letter of Approval.

As the project has no approval by the Host Party, CAR 43 remains pending and will be closed after report finalizing (see Appendix A).

The identified areas of concern as to project approvals by the Parties, project participants response and Bureau Veritas Certification's conclusion are described in Appendix A to Determination report (refer to CAR 43, CAR 14).

4.2 Authorization of project participants by Parties involved (21)

The official authorization of each legal entity listed as a project participant in the PDD by the Parties involved will be executed in the written Letters of Approval. See Section 4.1 of this report.

4.3 Baseline setting (22-26)

The PDD explicitly indicates that the use of a methodology for baseline setting and monitoring developed in accordance with Appendix B of the JI Guidelines (hereinafter referred to as "specific approach") was the selected approach for setting the baseline (in accordance with paragraph 9 (a) of the Guidance on criteria for baseline setting and monitoring for JI projects, version 03).

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

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

   a. "Business-as-usual" scenario in which the company continues its current practice, without the JI project.

   b. Scenario in which the project activities are implemented without the Joint Implementation mechanism.

   c. Scenario of implementation of partial project activities (not all project activities will be implemented) without use of the Joint Implementation mechanism.

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

a. Considering the importance of simplification and acceleration of control over cargo at border crossings, "Ukrzaliznytsya" regards Ukraine's adjunction to international conventions, which provide for reduction of both cost of customs clearance and time of delay of goods at the borders, appropriate.
In March 2010, the Program on Cooperation between OCR (Organization for Cooperation between Railways) and IGC (International Union of Railways) for 2010-2015 was signed. The program includes issues of the cooperation with regard to the harmonization of a common system of description and coding of cargo, operational and technical provisions in the field of freight transportation with a purpose to improve interoperability and efficiency of rail transport, improvement of its competitiveness, development of rail services for clients etc.; this emphasizes the importance of cooperation with international organizations.

b. 86% of rolling stock of railways of Ukraine is currently worn out and in 2011 because of the impossibility of further operation 202 cars, which were parts of the night trains and 11 passenger locomotives, are to be written off. Passenger transportation remains unprofitable from year to year; this does not allow for updating of the rolling stock and locomotives in the required amount. Overall the number of passenger cars has declined by 3,623 units in the last 10 years. According to the Law of Ukraine "On Railway Transport", purchase of rolling stock, particularly for passenger transportation, shall be funded by the government. Since the adoption of the Law, financing of railway rolling stock from the state budget has never been provided. "Ukrzaliznytsya" compensates the passenger transportation sector losses by means of cross-subsidization.

c. Tariff policy of "Urkrzaliznytsya", which is approved annually, regulates rates for all types of transportation by rail transport in Ukraine. Decree "On approval of Rules for the carriage of passengers, baggage, cargo and mail by railway transport of Ukraine" defines category of people that have concessional terms for passenger transportation. Compensation of non-obtained revenue from carrying out

socially necessary passenger transportation of suburban and regional traffic is provided by the State Budget of Ukraine, but it does not provide compensation to the full extent. "Ukrzaliznytsya" provides the following data: losses from uncompensated transportation of reduced fare passengers (26 categories of reduced fare passengers) in 2004 were 1.8 billion UAH; in 2005 - almost 2.2 billion UAH, in 2006 - 2.8 billion UAH, in 2007 - 4 billion UAH and in 2008 - 4.3 billion UAH. This situation leads to significant losses of "Ukrzaliznytsya" and actually makes it impossible to implement modernization measures to improve energy efficiency of rail transport on company's own expense.

d. State support in the field of railway transport is provided in amounts of funds provided by the law of Ukraine on State Budget of Ukraine for the relevant year, for financing the modernization and reconstruction of railway technological complex that has national or inter-regional significance for provision of safe operation of the unified complex of public rail transport and resource preservation. Technological rules of the railway sector in Ukraine do not require the implementation of new technologies.

e. It is planned to implement high-speed railway traffic in Ukraine in the future. The trains will develop speed of up to 180 km/h in some areas and reduce time of travel by 30%. Exploitation of trains of this type will result in significant saving of energy consumed by the railway sector.

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

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

The methods of calculation used to determine the estimated and actual baseline emissions, are sufficiently described in sections E and D of the PDD, respectively.
The identified areas of concern as to baseline setting, project participants response and Bureau Veritas Certification's conclusion are described in Appendix A to Determination report (refer to CAR 15 – CAR 22; CL 24).

4.4 Additionality (27-31)

The most recent version of the "Tool for the demonstration and assessment of additionality" approved by the CDM Executive Board was used, in accordance with the JI specific approach, defined in accordance with paragraph 9 (a) of the Guidance on criteria for baseline setting and monitoring for JI projects, version 03. All explanations, descriptions and analyses are made in accordance with the selected tool or method.

The PDD provides a justification of the applicability of the approach with a clear and transparent description, as per item 4.3 above.
The developer of the project proved that anthropogenic emissions under the project are lower than the emissions that would take place in the absence of the project activity.
Additionality proofs are provided. Three plausible and realistic alternative scenarios were identified for each type of modernization identified in the project:

- Alternative 1.1: Continuation of current practice, without the JI project.
- Alternative 1.2: The project activities without the Joint Implementation mechanism.
- Alternative 1.3: Partial project activities (not all project activities will be implemented) without use of the Joint Implementation mechanism.

Sensitivity analysis was used to assess the sensitivity of the project to the changes that may occur during the project implementation and operation of the unified complex of rail transportation. The sensitivity analysis is conducted to confirm whether the conclusions on the financial / economic attractiveness are enough stable at different substantiated variants of the baseline conditions change.
The two key factors were considered in sensitivity analysis: investment and operational expenses as well as tariff for freight and passenger rail transportation.

Thus, the overall conclusion is that the project activity meets the criteria of additionality, is not a baseline scenario and is additional.

Additionality is demonstrated properly, as a result of the analysis, which is used by the approach chosen.
The identified areas of concern as to additionality, project participants response and Bureau Veritas Certification's conclusion are described in Appendix A to Determination report (refer to CAR 23 – CAR 25; CL 04).

4.5 Project boundary (32-33)

The project boundary defined in the PDD, which in accordance with the specific approach is delineated by the physical, geographical site of the entire technological complex (railway lines, means of cargo and passenger transportation, means of railway lines maintenance, railway stations, transformer substations, boiler-houses, etc.) of the unified public rail transportation system of SE «Donetska zaliznytsya» and encompasses all anthropogenic emissions by sources of greenhouse gases (GHG) that are:

(i) Under the control of the project participants, such as:

- CO_2 emissions due to diesel fuel combustion and electricity consumption by locomotive facilities.

(ii) Reasonably attributable to the project, such as:

- CO_2 emissions due to fossil fuel combustion by boiler equipment of the heat supply system for heat generation.

(iii) Significant, i.e., as a rule of thumb, would by each source account on average per year over the crediting period for more than 1 per cent of the annual average anthropogenic emissions by sources of GHGs, or exceed an amount of 2,000 tonnes of CO2 equivalent, whichever is lower.

The delineation of the project boundary and the gases and sources included are appropriately described and justified in the PDD.
The identified areas of concern as to project boundary, project participants response and Bureau Veritas Certification's conclusion are described in Appendix A to Determination report (refer to CAR 26).

4.6 Crediting period (34)

The PDD states the starting date of the project as the date on which the participants of SE «Donetska zaliznytsya» made a decision about the launch of the JI project, and the starting date is 22/08/2003 which is after the beginning of 2000.

The PDD states the expected operational lifetime of the project in years and months, which is 17 years or 204 months.

The PDD states the length of the crediting period in years and months, which is 17 years or 204 months and the date on which first assigned amount units are expected to be generated was taken as the starting date of the crediting period, namely January 1, 2004.

The PDD states that the crediting period for ERUs issuance starts only after the beginning of 2008 and doesn't exceed the operational lifetime of the project.

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

The identified areas of concern as to crediting period, project participants response and Bureau Veritas Certification's conclusion are described in Appendix A to Determination report (refer to CAR 27 – CAR 30).

4.7 Monitoring plan (35-39)

The PDD in the section relating to the monitoring plan clearly states that a specific JI approach was chosen.

The monitoring plan describes all the necessary factors and key characteristics that will be monitored, and the period during which they will be monitored, particularly all the critical factors for controlling and reporting on project activities, such as reporting forms, the operating structure and management structure of the enterprise, that will be applied when implementing the monitoring plan.

The monitoring plan specifies the parameters, constant values and variables that are reliable (ie consistent and accurate values), dependable (that is clearly related to results that are measured) and provide a clear picture of emissions reductions that are subject to monitoring, such as: total amount of natural gas, diesel fuel, hard coal, fuel oil and electricity consumed.
The monitoring plan has properly given a list of standard variables that are contained in Annex B to the "Guidance on criteria for baseline setting and monitoring," developed by the JISC, including: baseline emissions (BEy), project emissions (PE_y), electricity consumption (EC_y), CO_2 emission factor for electricity ($EF_{CO2,ELEC,y}$), other emission factors ($EF_{XX,YY}$), amount of fuel consumed (FC_{xx}), electricity consumption (EC_y),.

According to the guidelines for users of the JI PDD forms, revision # 04, the described approach to monitoring clearly states:

a) Data and parameters that are not subject to monitoring during the crediting period but are identified only once and are available at the PDD development stage:

N_b^j	Total volume of rail transportation in historical period «j», in the baseline scenario, mln t km
EC_b^j	Electric power consumption in historical period «j», in the baseline scenario, MWh
$EF_{b,CO2,ELEC}^j$	Carbon dioxide emission factor for electricity consumption by electricity consumers in historical period «j», in the baseline scenario, tCO_2/MWh
$FC_{b,NG}^j$	Total volume of natural gas consumed in historical period «j», in the baseline scenario, ths m^3
$NCV_{b,NG}^j$	Net Calorific Value of natural gas in historical period “j, in the baseline scenario, TJ/mln.m^3
$EF_{b,C,NG}^j$	Carbon emission factor for the process of natural gas combustion in historical period “j”, in the baseline scenario, t C/TJ
$OXID_{b,NG}^j$	Carbon oxidation factor for the process of natural gas combustion in historical period “j”, in the baseline scenario, Relative units.
$FC_{b,diesel}^j$	Total amount of diesel fuel consumed in historical period “j”, in the baseline scenario, t
$NCV_{b,diesel}^j$	Net Calorific Value of diesel fuel in historical period “j, in the baseline scenario, TJ/ ths t
$EF_{b,C,diesel}^j$	Carbon emission factor for the process of diesel fuel combustion in historical period “j”, in the baseline scenario, t C/TJ
$OXID_{b,diesel}^j$	Carbon oxidation factor for the process of diesel fuel combustion in historical period “j”, in the baseline scenario, Relative units.
$FC_{b,coal}^j$	Total amount of hard coal consumed in historical period “j”, in the baseline scenario, t
$NCV_{b,coal}^j$	Net Calorific Value of hard coal in historical period “j, in the baseline scenario, TJ/ ths t
$EF_{b,C,coal}^j$	Carbon emission factor for the process of hard coal combustion in historical period “j”, in the baseline scenario, t C/TJ
$OXID_{b,coal}^j$	Carbon oxidation factor for the process of hard coal combustion in historical period “j”, in the baseline scenario, Relative units
$FC_{b,FO}^j$	Total amount of fuel oil consumed in historical period “j”, in the baseline scenario, t
$NCV_{b,FO}^j$	Net Calorific Value of fuel oil in historical period “j, in the baseline scenario, TJ/ ths t
$EF_{b,C,FO}^j$	Carbon emission factor for the process of fuel oil combustion in historical period “j”, in the baseline scenario, t C/TJ
$OXID_{b,FO}^j$	Carbon oxidation factor for the process of fuel oil combustion in historical period “j”, in the baseline scenario, Relative units

b) Data and parameters that are not monitored during the crediting period but are identified only once and are not available at the PDD development stage: none

c) Data and parameters that are monitored during the crediting period:

N_p^y	Total volume of rail transportation in monitoring period «y», in the project scenario, mln t km
EC_p^y	Electric power consumption in monitoring period «y», in the project scenario, MWh
$EF_{p,CO2,ELEC}^y$	Carbon dioxide emission factor for electricity consumption by electricity consumers in monitoring period «y», in the project scenario, tCO_2/MWh
$FC_{p,NG}^y$	Total volume of natural gas consumed in monitoring period «y» in the project scenario, ths m^3
$NCV_{p,NG}^y$	Net Calorific Value of natural gas in monitoring period «y», in the project scenario, TJ/ths.m^3
$EF_{p,C,NG}^y$	Carbon emission factor for the process of natural gas combustion in monitoring period «y», in the project scenario, t C/TJ
$OXID_{p,NG}^y$	Carbon oxidation factor for the process of natural gas combustion in monitoring period «y», in the project scenario, Relative units
$FC_{p,diesel}^y$	Total amount of diesel fuel consumed in monitoring period «y», in the project scenario, t
$NCV_{p,diesel}^y$	Net Calorific Value of diesel fuel in monitoring period «y», in the project scenario, TJ/ ths t
$EF_{p,C,diesel}^y$	Carbon emission factor for the process of diesel fuel combustion in monitoring period «y», in the project scenario, t C/TJ
$OXID_{p,diesel}^y$	Carbon oxidation factor for the process of diesel fuel combustion in monitoring period «y», in the project scenario, Relative units
$FC_{p,coal}^y$	Total amount of hard coal consumed in monitoring period «y», in the project scenario, t
$NCV_{p,coal}^y$	Net Calorific Value of hard coal in monitoring period «y», in the project scenario, TJ/ ths t
$EF_{p,C,coal}^y$	Carbon emission factor for the process of hard coal combustion in monitoring period «y», in the project scenario, t C/TJ
$OXID_{p,coal}^y$	Carbon oxidation factor for the process of hard coal combustion in monitoring period «y», in the project scenario, Relative units
$FC_{p,FO}^y$	Total amount of fuel oil consumed in monitoring period «y», in the project scenario, t
$NCV_{p,FO}^y$	Net Calorific Value of fuel oil in monitoring period «y», in the project scenario, TJ/ ths t
$EF_{p,C,FO}^y$	Carbon emission factor for the process of fuel oil combustion in monitoring period «y», in the project scenario, t C/TJ
$OXID_{p,FO}^y$	Carbon oxidation factor for the process of fuel oil combustion in monitoring period «y», in the project scenario, Relative units

$[j]$ - relates to historical period;

$[b]$ - relates to baseline scenario;

$[y]$ - relates to monitoring period;

$[p]$ - relates to project scenario;

$[ELEC]$ - relates to electric power;

$[NG]$ - relates to natural gas;

$[diesel]$ - relates to diesel fuel;

$[coal]$ - relates to hard coal;

$[FO]$ - relates to fuel oil

The monitoring plan describes the methods applied for monitoring data (including its frequency) and record-keeping methods such as data of the system of control and accounting of diesel fuel consumption of «BIS-R» type direct measurement by electricity and gas meters, electricity bills, Form N 11-MTP «Report on results of fuel, heat energy and electricity consumption».

The most objective and cumulative factors that provide a clear picture of whether the emission reduction took place:

1) Electricity savings;
2) Gas savings;
3) Fuel oil savings.

These factors can be defined as the difference between the baseline consumption and electricity, gas and fuel oil consumption after the project implementation.

The monitoring plan develops all the algorithms and formulae used to estimate / calculate baseline emissions and project emissions:

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

$$BE_b^j = N_p^y * BPER$$

N_p^y - Total volume of rail transportation in monitoring period “y”, in the project scenario, (mln. t km);

$BPER$ - before-project efficiency ratio of rail transportation, (tCO_2-equiv / mln. t km);

$$BPER = \frac{\sum_{n=1}^{3} BE_b^j}{\sum_{n=1}^{3} N_b^j}$$

BE_b^j - total GHG emissions in the process of rendering services on rail transportation in historical period «j», in the baseline scenario, (tCO_2-equiv);

N_b^j - total reduced volume of rail transportation in historical period «j», in the baseline scenario, (mln t km gross);

$[y]$ - index corresponding to monitoring period;

$[p]$ - index corresponding to project scenario;

$[j]$ - index corresponding to historical period;

$[b]$ - index corresponding to baseline scenario;

$BE_b^j = BE_{b,ELEC}^j + BE_{b,NG}^j + BE_{b,diesel}^j + BE_{b,coal}^j + BE_{b,FO}^j$, where

$BE_{b,ELEC}^j$ - GHG emissions from combustion of fossil fuel when generating electric energy consumed in the course of rendering services on cargo and passenger rail transportation, in historical period "j", in the baseline scenario, (t CO_2-equiv.);

$BE_{b,NG}^j$ - GHG emissions from combustion of natural gas for rendering services on cargo and passenger rail transportation, in historical period "j", in the baseline scenario, (t CO_2-equiv.);

$BE_{b,diesel}^j$ - GHG emissions from combustion of diesel fuel for rendering services on cargo and passenger rail transportation, in historical period "j", in the baseline scenario, (t CO_2-equiv.);

$BE_{b,coal}^j$ - GHG emissions from combustion of hard coal for rendering services on cargo and passenger rail transportation, in historical period "j", in the baseline scenario, (t CO_2-equiv.);

$BE_{b,FO}^j$ - GHG emissions from combustion of fuel oil for rendering services on cargo and passenger rail transportation, in historical period "j", in the baseline scenario, (t CO_2-equiv.);

$[j]$ - index corresponding to historical period;

$[b]$ - index corresponding to baseline scenario;

$[ELEC]$ - relates to electric energy;

$[NG]$ - relates to natural gas;

$[diesel]$ - relates to diesel fuel;

$[coal]$ - relates to hard coal;

$[FO]$ - relates to fuel oil.

$BE_{b,ELEC}^j = EC_b^j * EF_{b,CO2,ELEC}^j$,

EC_b^j - consumption of electric energy in historical period "j", in the baseline scenario, (MWh);

$EF_{b,CO2,ELEC}^j$ - Carbon dioxide emission factor for electricity consumption by electricity consumers in historical period "j", in the baseline scenario, (tCO_2/MWh);

$[j]$ - index corresponding to historical period;

$[b]$ - index corresponding to baseline scenario;

$[ELEC]$ - relates to electric energy;

$BE^{j}_{b,NG} = FC^{j}_{b,NG} * NCV^{j}_{b,NG} * EF^{j}_{b,CO2,NG}$

$FC^{j}_{b,NG}$ - Total volume of natural gas consumed in historical period "j", in the baseline scenario, (ths m^3);

$NCV^{j}_{b,NG}$ - Net Calorific Value of natural gas in historical period "j", in the baseline scenario, (TJ/ths.m^3);

$EF^{j}_{b,CO2,NG}$ - Carbon emission factor on default for stationary combustion of natural gas in historical period "j", in the baseline scenario, (t CO_2 /TJ).

$EF^{j}_{b,CO2,NG} = EF^{j}_{b,C,NG} * OXID^{j}_{b,NG} * 44/12$

$EF^{j}_{b,C,NG}$ - Carbon emission factor for the process of natural gas combustion in historical period "j", in the baseline scenario, (t C/TJ);

$OXID^{j}_{b,NG}$ - Carbon oxidation factor for the process of natural gas combustion in historical period "j", in the baseline scenario, (relative units);

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

$[j]$ - index corresponding to historical period;

$[b]$ - index corresponding to baseline scenario;

$[NG]$ - relates to natural gas;

$BE^{j}_{b,diesel} = FC^{j}_{b,diesel} * NCV^{j}_{b,diesel} * EF^{j}_{b,CO2,diesel}$

$FC^{j}_{b,diesel}$ - Total amount of diesel fuel consumed in historical period "j", in the baseline scenario, (t);

$NCV^{j}_{b,diesel}$ - Net Calorific Value of diesel fuel in historical period "j", in the baseline scenario, (TJ/ths t);

$EF^{j}_{b,CO2,diesel}$ - Carbon dioxide emission factor on default for stationary combustion of diesel fuel in historical period "j", in the baseline scenario, (t CO_2 /TJ).

$EF^{j}_{b,CO2,diesel} = EF^{j}_{b,C,diesel} * OXID^{j}_{b,diesel} * 44/12$

$EF^{j}_{b,C,diesel}$ - Carbon emission factor for the process of diesel fuel combustion in historical period "j", in the baseline scenario, (t C/TJ);

$OXID^{j}_{b,diesel}$ - Carbon oxidation factor for the process of diesel fuel combustion in historical period "j", in the baseline scenario, (relative units);

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

$[j]$- index corresponding to historical period;

$[b]$ - index corresponding to baseline scenario;

$[diesel]$ - relates to diesel fuel;

$BE^{j}_{b,coal} = FC^{j}_{b,coal} * NCV^{j}_{b,coal} * EF^{j}_{b,CO2,coal}$

$FC^{j}_{b,coal}$ - Total amount of hard coal consumed in historical period "j", in the baseline scenario, (t);

$NCV^{j}_{b,coal}$ - Net Calorific Value of hard coal in historical period "j", in the baseline scenario, (TJ/ths t);

$EF^{j}_{b,CO2,coal}$ - Carbon dioxide emission factor on default for stationary combustion of hard coal in historical period "j", in the baseline scenario, (t CO_2 /TJ).

$EF^{j}_{b,CO2,coal} = EF^{j}_{b,C,coal} * OXID^{j}_{b,coal} * 44/12$

$EF^{j}_{b,C,coal}$ - Carbon emission factor for the process of hard coal combustion in historical period "j", in the baseline scenario, (t C/TJ);

$OXID^{j}_{b,coal}$ - Carbon oxidation factor for the process of hard coal combustion in historical period "j", in the baseline scenario, (relative units);

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

$[j]$ - index corresponding to historical period;

$[b]$ - index corresponding to baseline scenario;

$[coal]$ - relates to hard coal;

$BE^{j}_{b,FO} = FC^{j}_{b,FO} * NCV^{j}_{b,FO} * EF^{j}_{b,CO2,FO}$

$FC^{j}_{b,FO}$ - Total amount of fuel oil consumed in historical period "j", in the baseline scenario, (t);

$NCV^{j}_{b,FO}$ - Net Calorific Value of fuel oil in historical period "j", in the baseline scenario, (TJ/ths t);

$EF^{j}_{b,CO2,FO}$ - Carbon dioxide emission factor on default for stationary combustion of fuel oil in historical period "j", in the baseline scenario, (tCO_2 /TJ).

$EF^{j}_{b,CO2,FO} = EF^{j}_{b,C,FO} * OXID^{j}_{b,FO} * 44/12$

$EF^{j}_{b,C,FO}$ - Carbon emission factor for the process of fuel oil combustion in historical period "j", in the baseline scenario, (t C/TJ);

$OXID^{j}_{b,FO}$ - Carbon oxidation factor for the process of fuel oil combustion in historical period "j", in the baseline scenario, (relative units);

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

$[j]$- index corresponding to historical period;

$[b]$ - index corresponding to baseline scenario;

$[FO]$ - relates to fuel oil.

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

$PE_p^y = PE_{p,ELEC}^y + PE_{p,NG}^y + PE_{p,diesel}^y + PE_{p,coal}^y + PE_{p,FO}^y$, where

$PE_{p,ELEC}^y$ - GHG emissions from combustion of fossil fuel when generating electric energy consumed in the course of rendering services on cargo and passenger rail transportation, in monitoring period "y", in the project scenario, (t CO_2-equiv.);

$PE_{p,NG}^y$ - GHG emissions from combustion of natural gas for rendering services on cargo and passenger rail transportation, in monitoring period "y", in the project scenario, (t CO_2-equiv.);

$PE_{p,diesel}^y$- GHG emissions from combustion of diesel fuel for rendering services on cargo and passenger rail transportation, in monitoring period "y", in the project scenario, (t CO_2-equiv.);

$PE_{p,coal}^y$- GHG emissions from combustion of hard coal for rendering services on cargo and passenger rail transportation, in monitoring period «y", in the project scenario, (t CO_2-equiv.);

$PE_{p,FO}^y$- GHG emissions from combustion of fuel oil for rendering services on cargo and passenger rail transportation, in monitoring period «y", in the project scenario, (t CO_2-equiv.);

$[y]$ - index corresponding to monitoring period;

$[p]$ - index corresponding to project scenario;

$[ELEC]$ - relates to electric energy;

$[NG]$ - relates to natural gas;

$[diesel]$ - relates to diesel fuel;

$[coal]$ - relates to hard coal;

$[FO]$ - relates to fuel oil.

$PE_{p,ELEC}^y = EC_p^y * EF_{p,CO2,ELEC}^y$,

EC_p^y - consumption of electric energy in monitoring period «y», in the project scenario, (MWh);

$EF_{p,CO2,ELEC}^y$- Carbon dioxide emission factor for electricity consumption by electricity consumers in monitoring period «y», in the project scenario, (tCO_2/MWh);

$[y]$ - index corresponding to monitoring period;

$[p]$ - index corresponding to project scenario;

$[ELEC]$ - relates to electric energy;

$PE_{p,NG}^y = FC_{p,NG}^y * NCV_{p,NG}^y * EF_{p,CO2,NG}^y$

$FC^{y}_{p,NG}$ - Total volume of natural gas consumed in monitoring period «y», in the project scenario, (ths m^3);

$NCV^{y}_{p,NG}$ - Net Calorific Value of natural gas in monitoring period «y», in the project scenario, (TJ/thous.m^3);

$EF^{y}_{p,CO2,NG}$ - Carbon emission factor on default for stationary combustion of natural gas in monitoring period «y», in the project scenario, (t CO_2 /TJ).

$$EF^{y}_{p,CO2,NG} = EF^{y}_{p,C,NG} * OXID^{y}_{p,NG} * 44/12$$

$EF^{y}_{p,C,NG}$ - Carbon emission factor for the process of natural gas combustion in monitoring period «y», in the project scenario, (t C/TJ);

$OXID^{y}_{p,NG}$ - Carbon oxidation factor for the process of natural gas combustion in monitoring period «y», in the project scenario, (relative units);

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

$[y]$ - index corresponding to monitoring period;

$[p]$ - index corresponding to project scenario.

$[NG]$ - relates to natural gas;

$$PE^{y}_{p,diesel} = FC^{y}_{p,diesel} * NCV^{y}_{p,diesel} * EF^{y}_{p,CO2,diesel}$$

$FC^{y}_{p,diesel}$ - Total amount of diesel fuel consumed in monitoring period «y», in the project scenario, (t);

$NCV^{y}_{p,diesel}$ - Net Calorific Value of diesel fuel in monitoring period «y", in the project scenario, (TJ/ths t);

$EF^{y}_{p,CO2,diesel}$ - Carbon dioxide emission factor on default for stationary combustion of diesel fuel in monitoring period «y», in the project scenario, (t CO_2 /TJ).

$$EF^{y}_{p,CO2,diesel} = EF^{y}_{p,C,diesel} * OXID^{y}_{p,diesel} * 44/12$$

$EF^{y}_{p,C,diesel}$ - Carbon emission factor for the process of diesel fuel combustion in monitoring period «y", in the project scenario, (t C/TJ);

$OXID^{y}_{p,diesel}$ - Carbon oxidation factor for the process of diesel fuel combustion in monitoring period «y", in the project scenario, (relative units);

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

$[y]$ - index corresponding to monitoring period;

$[p]$ - index corresponding to project scenario.

$[diesel]$ - relates to diesel fuel;

$$PE^{y}_{p,coal} = FC^{y}_{p,coal} * NCV^{y}_{p,coal} * EF^{y}_{p,CO2,coal}$$

$FC^{y}_{p,coal}$ - Total amount of hard coal consumed in monitoring period «y», in the project scenario, (t);

$NCV^{y}_{p,coal}$ - Net Calorific Value of hard coal in monitoring period «y», in the project scenario, (TJ/ths t);
$EF^{y}_{p,CO2,coal}$ - Carbon emission factor on default for stationary combustion of hard coal in monitoring period «y», in the project scenario, (t CO_2 /TJ).
$EF^{y}_{p,CO2,coal} = EF^{y}_{p,C,coal} * OXID^{y}_{p,coal} * 44/12$
$EF^{y}_{p,C,coal}$ - Carbon emission factor for the process of hard coal combustion in monitoring period «y», in the project scenario, (t C/TJ);
$OXID^{y}_{p,coal}$ - Carbon oxidation factor for the process of hard coal combustion in monitoring period «y", in the project scenario, (relative units);
$44/12$ - stoichiometric ratio between the molecular weight of carbon dioxide and carbon, (t CO_2 /t C);

$[y]$ - index corresponding to monitoring period;
$[p]$ - index corresponding to project scenario.
$[coal]$ - relates to hard coal;

$PE^{y}_{p,FO} = FC^{y}_{p,FO} * NCV^{y}_{p,FO} * EF^{y}_{p,CO2,FO}$
$FC^{y}_{p,FO}$ - Total amount of fuel oil consumed in monitoring period "y", in the project scenario, (t);
$NCV^{y}_{p,FO}$ - Net Calorific Value of fuel oil in monitoring period "y", in the project scenario, (TJ/ths t);
$EF^{y}_{p,CO2,FO}$ - Carbon emission factor on default for stationary combustion of fuel oil in monitoring period «y», in the project scenario, (tCO_2 /TJ).
$EF^{y}_{p,CO2,FO} = EF^{y}_{p,C,FO} * OXID^{y}_{p,FO} * 44/12$
$EF^{y}_{p,C,FO}$ - Carbon emission factor for the process of fuel oil combustion in monitoring period "y", in the project scenario, (t C/TJ);
$OXID^{y}_{p,FO}$ - Carbon oxidation factor for the process of fuel oil combustion in monitoring period "y", in the project scenario, (relative units);
$44/12$ - stoichiometric ratio between the molecular weight of carbon dioxide and carbon, (t CO_2 /t C);

$[y]$ - index corresponding to monitoring period;
$[p]$ - index corresponding to project scenario.
$[FO]$ - relates to fuel oil.

Formulae used to estimate emission reductions for the project (for each gas, source, reduction units of CO_2):
Number of Emission Reduction (ER) Units, t CO_{2e}:

$$ER^{y} = BE^{y}_{b} - PE^{y}_{p}$$

ER^y – emission reductions as a result of project activities in monitoring period "y", in the project scenario, (t CO_2-equiv);

BE_b^y - total GHG emissions caused by the process of rendering services on cargo and passenger rail transportation in monitoring period "y", in the baseline scenario, (t CO_2-equiv);

PE_p^y - total GHG emissions caused by the process of rendering services on cargo and passenger rail transportation in monitoring period "y", in the project scenario, (t CO_2-equiv);

$[y]$ - index corresponding to monitoring period;

$[p]$ - index corresponding to project scenario;

$[b]$ - index corresponding to baseline scenario.

The monitoring plan represents quality control procedures and quality assurance for the monitoring process, which are sufficiently described in tabular form in sections of the PDD D.1.1.1., D.1.1.3. and D.2. This includes, where appropriate, provision and submission on request of information about calibration, as well as information about how data are recorded and / or how the applicability of the method and accuracy of data are assured.

The monitoring plan clearly establishes responsibility and authority in respect of monitoring actions. Collection of all the key parameters necessary for monitoring and calculation of greenhouse gases emissions reduction are constantly carried out according to the practice, established in SE "Donetska zaliznytsya". Monitoring under the project does not require changes in existing data accounting and collection system.

Overall monitoring report reflects the proper practice of monitoring, it is appropriate for this type of project.

The monitoring plan provides, in tabular form, a complete compilation of the data that need to be collected for its application, including data that is measured or sampled and data that are collected from other sources (for example, official statistics, experts' opinions, company's own data, IPCC, commercial and scientific literature, etc.) but excluding data that are calculated with the help of equasions.
The monitoring plan specifies that the data that is subject to monitoring and is required for verification should be kept for two years after the last transfer of ERUs under the project.

The identified areas of concern as to the monitoring plan, project participants' response and Bureau Veritas Certification's conclusion are

described in Appendix A to Determination Report (refer to CAR 31 – CAR 40, CL 05 – CL 06).

4.8 Leakage (40-41)

The PDD properly describes the evaluation of potential leakage of the project and clearly explaines which of the sources of leakage must be subject to calculation, and which can be neglected.

No leakage is expected.

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

The PDD provides estimates of emissions in the baseline scenario and project scenario as the selected approach for calculation of emission reductions generated by the project.

PDD provides projected estimates:

(a) emissions in the project scenario (within the project boundary), which are 5 161 228 tonnes of CO_{2e} in 2004-2007, 5 996 375 tonnes of CO_{2e} in 2008-2012, 9 521 064 tonnes of CO_{2e} in 2013-2020;

(b) leakage, as appropriate, are equal to zero tonnes of CO_{2e};

(c) emissions for the baseline scenario (within the project boundary), which are 6 143 862 tonnes of CO_{2e} in 2004-2007, 7 777 847 tonnes of CO_{2e} in 2008-2012, 12 494 448 tonnes of CO_{2e} in 2013-2020;

(d) reduction of emissions adjusted by leakage (based on the above (a) - (c)) that make up 982 634 tonnes of CO_{2e} in 2004-2007, 1 781 472 tonnes of CO_{2e} in 2008-2012, 2 973 384 tonnes of CO_{2e} in 2013 - 2020.

The above calculations are:

(a) on an annual basis;

(b) from 01/01/2004 to 31/12/2020, covering the entire crediting period;

(c) based on primary sources and sources;

(d) for each GHG, such as CO_2;

(e) in tonnes of CO_2 equivalent using global warming potentials defined in the decision 2/CR.3 or amended in accordance with Article 5 of the Kyoto Protocol.

Formulae for calculating the above estimations are given in section 4.7. All formulae are in the correct sequence and compliance across the PDD.

To calculate the above estimations such key factors as actual monitoring data, predicted performance indicators, data approved at the national level relating to CO_2 emission factors for the Ukrainian electrical grid, the National inventory report of anthropogenic emissions, the Ukrainian environmental legislation and other national legislation, as well as key relevant factors such as availability of funds for implementation of measures envisaged by the project, tariffs that are set by the state, modern technology and the ability to implement know-how in rail transportation spheres, that affect the baseline emissions level, project activity level and level of emissions, as well as risks associated with the project were properly taken into account.

Sources of data that were used for calculation of the above estimations such as documents and archival data of the enterprise, standards and statistical forms, etc. are clearly defined, credible and transparent.

Emission factors, such as carbon dioxide emission factor for electricity consumption by electricity consumers, carbon emission factor for natural gas combustion, carbon emission factor for diesel fuel combustion, coarbon emission factor for hard coal combustion and carbon emission factor for fuel oil combustion were chosen through careful balancing of accuracy and appropriateness and properly justified their choice.

The calculations are based on conservative assumptions and the most likely scenarios in a transparent manner.

All calculations are in the correct sequence and are in compliance throughout the entire PDD.

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

Detailed algorithms of calculations and their results are described in section D, E and supporting documents to the PDD.

The identified areas of concern as to the evaluation of emission reductions, project participants' response and Bureau Veritas Certification's conclusion are described in Appendix A to Determination Report (refer to CAR 41).

4.10 Environmental impacts (48)

Sections F.1. and F.2. of the PDD provide information about the documentation that contains the analysis of environmental impacts caused by the project, including the transboundary impact, in accordance with procedures defined by the Host Party.
The PDD states that according to the law of Ukraine "On Environmental Protection" and State Building Norms A.2.2-1-2003, "Structure and content of environmental impact assessment (EIA) in the process of design and construction of plants, buildings and structures" SE «Donetska zaliznytsya» is not obliged to develop the environmental impact assessment for this type of project.

SE «Donetska zaliznytsya» has all necessary permits and licenses for the maintenance and operation of rail routes, means of rolling stock, heating, transformer substations, complex of administrative and technical constructions and buildings.

The main directions of reducing the factors of impacts on the environment are a rational selection of technological processes for rendering services on rail transportation of freight and passengers, the use of the means for environmental protection and maintaining them in good condition.

The PDD clearly states that all harmful impacts on the environment that arise in the course of rendering services on rail transportation of cargo and passengers do not exceed the permissible limits prescribed according to:

- Law of Ukraine № 1264-XII «On environmental protection" dated 25/06/1991;
- Law of Ukraine № 2707-XII «On atmospheric air protection» dated 16/10/1992;
- Current rules on emission limitation: «Norms of maximum permissible emissions of pollutants from permanent sources» – approved by the Ministry of Environmental Protection of Ukraine dated 27/06/2006, №309 and registered in the Ministry of Justice of Ukraine dated 01/09/2006, №912/12786.

Upon conducting of environmental impact assessment, it is clear that the project doesn't generate any significant adverse environmental impact, but rather has a positive impact on the environment. In addition, transboundary impacts of the project activity according to their definition in the text of Convention on long-distance transboundary pollution that was ratified by Ukraine, don't take place.

PDD provides conclusions and all references to supporting documentation to assess the environmental impact, which is in accordance with procedures established by the Host Party

The identified areas of concern as to the environmental impacts, project participants' response and Bureau Veritas Certification's conclusion are described in Appendix A to Determination Report (refer to CAR 42).

4.11 Stakeholder consultation (49)

Since the project activities do not imply any negative environmental impact and negative social effect, special public discussions were not necessary. Consultations with stakeholders were held in meetings of local authorities.

All comments relating to the project implementation were positive. No negative comments were received.

The program on increase in the efficiency of fuel and energy resources consumption in the process of providing services on rail transportation of freight and passengers is regularly highlighted in the press.

The identified areas of concern as to the stakeholder consultation, project participants' response and Bureau Veritas Certification's conclusion are described in Appendix A to Determination Report (CL 16).

4.12 Determination regarding small-scale projects (50-57)

Not applicalbe.

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

Not applicalbe.

4.14 Determination regarding programmes of activities (65-73)

Not applicalbe.

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

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

6. DETERMINATION OPINION

Bureau Veritas Certification has performed a determination of the "Implementation of energy efficiency measures at SE "Donetska zaliznytsya" Project in Ukraine. The determination was performed on the basis of UNFCCC criteria and host country criteria and also on the criteria given to provide for consistent project operations, monitoring and reporting.

The determination consisted of the following three phases:

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

The project participants used the latest tool for demonstration and assessment of additionality. According to this tool the PDD contains investment analysis and analysis of common practice to determine that the project activity isn't the baseline scenario.

Emission reductions that occur due to the project are therefore additional to those that would have occurred without the project activity. On condition of the introduction and implementation of the project according to the design decision, the project is likely to reach the estimated amount of emission reductions.

The determination revealed one pending issue related to the current determination stage of the project: the written approval of the project by the host Country (Ukraine) wasn't obtained. If the written approval by the host Country is provided, it is our opinion that the project as described in the Project Design Document, version 02 dated 12/12/2011 meets all the relevant UNFCCC requirements for the determination stage and the relevant host Country criteria as well as expectations of the stakeholders.

The review of the project design documentation (version 02 dated 12/12/2011) and the subsequent follow-up interviews have provided Bureau Veritas Certification with sufficient evidence to determine the fulfillment of stated criteria. In our opinion, the project correctly applies

and meets the relevant UNFCCC requirements for the JI and the relevant host country criteria.

The determination is based on the information made available to us and the engagement conditions detailed in this report.

7 REFERENCES

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

/1/	PDD "Implementation of energy efficiency measures at SE Donetska zaliznytsya", version 01 dated 01/11/2011
/2/	PDD "Implementation of energy efficiency measures at SE "Donetska zaliznytsya", version 02 dated 12/12/2011
/3/	Supporting document 1 to Joint Implementation Project Design Document (JI PDD); project title: "Implementation of energy efficiency measures at SE "Donetska zaliznytsya" A. Greenhouse gas emissions in the baseline scenario B. Greenhouse gas emissions in the project scenario C. Estimated amount of emission reductions in the crediting period

Category 2 Documents:

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

/1/	Guidelines for users of the JI PDD form. Version 04, JISC
/2/	The Kyoto Protocol
/3/	Marrakesh Agreement, JI Methods
/4/	National inventory report on emissions and removals of greenhouse gases in Ukraine for the period of 1990-2004
/5/	Ukraine's Third National Communication on Climate Change under the Kyoto Protocol
/6/	Ukraine's Fourth National Communication on Climate Change under the Kyoto Protocol
/7/	Ukraine's Fifth National Communication on Climate Change under the Kyoto Protocol
/8/	The decree of the Cabinet of Ministers of Ukraine as of 01/03/1999 № 303 "Procedure of environmental pollution fee estimation and charging of this fee"
/9/	Law of Ukraine "On ecological expertise"
/10/	Law of Ukraine "On licensing of certain types of entrepreneurial activities"
/11/	JI Guidelines. Annex to decision 9/CDM.1.
/12/	JI Guidance for determination and verification, version 01
/13/	Guidance on criteria for baseline setting and monitoring, JISC. Version 02
/14/	JI PDD form, version 01
/15/	Guidance on criteria for baseline setting and monitoring, JISC. Version 03
/16/	JI glossary, version 03, JISC
/17/	"Tool for the demonstration and assessment of additionality", version 06.0.0
/18/	National Inventory of GHG emissions by sources and removals by sinks in Ukraine for 1990-2009
/19/	State Building Norms A.2.2-1-2003, "Structure and content of environmental impact assessment (EIA) in the process of design and construction of plants, buildings and structures"

/20/	Operational Guidelines for Project Design Documents of Joint Implementation Projects, Volume 1: General guidelines, version 2.3, the Ministry of Economy of Netherlands
/21/	“Ukraine - Assessment of new calculation of EF”, approved by TUV SUD on 17/08/2007
/22/	Decree of the National Environmental Investment Agency of Ukraine №43 dated 28/03/2011 " On approval of specific carbon dioxide emission factors in 2010"
/23/	Decree of the National Environmental Investment Agency of Ukraine №62 dated 15/04/2011 "On approval of specific carbon dioxide emission factors in 2008"
/24/	Decree of the National Environmental Investment Agency of Ukraine №63 dated 15/04/2011 " On approval of specific carbon dioxide emission factors in 2009 "
/25/	Decree of the National Environmental Investment Agency of Ukraine №75 dated 12/05/2011 "On approval of specific carbon dioxide emission factors in 2011"
/26/	Letter of Endorsement №3306/23/7 dated 09/11/2011 of the project “Implementation of energy efficiency measures at SE Donetska zaliznytsya” issued by the State Environmental Investment Agency
/27/	Letter of Approval №J294-0485 dated 28/11/2011, issued by the Federal Office for the Environment (FOEN) (Switzerland)
/28/	Agreement № D/E-06769/NU dated 31/05/2006
/29/	Certificate of acceptance of the works performed in June 2006
/30/	Cost breakdown for installation of OPN-35 № 1530 as of November 2007
/31/	Certificate of acceptance of the work performed № 1530 as of December 2008
/32/	Record № 1530 of equipment defects at traction substations, power, air, cable lines, and contacts of the network to be repaired as of December 2008
/33/	Record № 1530 of equipment defects at traction substations, power, air, cable lines, and contacts of the network to be repaired as of September 2008
/34/	Certificate of acceptance of the work performed №1525 in July

	2010
/35/	Certificate of acceptance of contract work performed №1 in December 2009
/36/	Certificate of acceptance of contract work performed №1 in August 2009
/37/	Certificate of acceptance of work performed №1525 in November 2010
/38/	Certificate of acceptance of contract work performed №2 in August 2009
/39/	Certificate of acceptance of work performed №1525a in November 2010
/40/	Certificate of assembling vacuum circuit-breaker of VBET-35III-25/630 type dated 01/04/2010
/41/	Certificate of assembling vacuum circuit-breaker of VBET-35III-25/630 type dated 18/06/2010
/42/	Certificate of acceptance of contract work performed №1 in December 2008.

Persons interviewed:

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

	Name	Organization	Title
/1/	Podluzskyi V.O.	SE "Donetska zaliznytsya"	The deputy chief engineer of the railway - head of technical services
/2/	Lola V.M.	SE "Donetska zaliznytsya"	Deputy Head of Technical Services
/3/	Alekseeva V.S.	SE "Donetska zaliznytsya"	Head of Department of Ecology
/4/	Kuzmenko T.M.	SE "Donetska zaliznytsya"	Chief Specialist of Environmental Sector
/5/	Pyanikin O.O.	SE "Donetska zaliznytsya"	Chief of Technical Division of locomotive facilities
/6/	Sklyarevska N.O.	SE "Donetska zaliznytsya"	Head of legal department
/7/	Petrov D.O.	SE "Donetska zaliznytsya"	Deputy Head of the NKM service
/8/	Stryuk O.V.	SE "Donetska zaliznytsya"	Head of Finance and Economics
/9/	Savchenko V.L.	SE "Donetska zaliznytsya"	Chief Engineer of the electrification and power supply service
/10/	Sobolev V.Yu.	SE "Donetska zaliznytsya"	Chief Engineer ECh-4 of the electrification and power supply service
/11/	Chekh E.V.	SE "Donetska zaliznytsya"	Head of technical department ECh-1 of the electrification and power supply service
/12/	Palamarchuk D.	LLC "Carbon Emission	VEMA S.A.

		Partnership”	consultant

APPENDIX A: COMPANY PROJECT DETERMINATION PROTOCOL

BUREAU VERITAS CERTIFICATION HOLDING SAS

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

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participant's measures review	Final Conclusion
Guidelines for Users of the JI PDD form Section A General description of the project				
A.1. Title of the project				
A.1	Is the title of the project presented?	The title is presented. The title of the project is "Implementation of energy efficiency measures at SE "Donetska zaliznytsya"	OK	OK
A.1	Is the sectoral scope to which the project pertains presented?	The sectoral scopes to which project pertains were listed: **CAR 01.** Please provide the correct sectoral scopes to which the project pertains and correct this information in Section A.1. of the PDD.	**CAR 01**	OK
A.1	Is the current version number of the document presented?	The current version of the document is presented. See Section A.1.	OK	OK
A.1	Is the date when the document was completed presented?	The date when the document was completed is also presented in Section A1..	OK	OK
A.2. Description of the project				
A.2	Is the purpose of the project included with a concise, summarizing explanation (max. 1-2 pages) of the: a) Situation existing prior to the starting date of the project;	The main purpose of the Joint Implementation Project (JIP) "Implementation of energy efficiency measures at SE "Donetska zaliznytsya" is decrease in consumption of energy resources in the course of rendering services on cargo and	**CAR 02**	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participant's measures review	Final Conclusion
	b) Baseline scenario; and c) Project scenario (expected outcome, including a technical description)?	passengers rail transportation. This can be achieved by means of complex modernization of SE "Donetska zaliznytsya". Detailed information about the baseline and project scenarios together with technical description is provided in sections A.2. and A.4.2. in the PDD. **CAR 02.** Please provide an explanation of abbreviations and acronyms when first mentioned throughout the text of the PDD.		
A.2	Is the history of the project (incl. its JI component) briefly summarized?	**CAR 03.** Please provide more detailed information about the history of the project (including its JI component) as well as the documents confirming this information as supporting ones. **CAR 04.** Letter of Endorsement for the JI Project "Implementation of energy efficiency measures at SE «Donetska zaliznytsya» issued by the State Environmental Investment Agency of Ukraine was received on 09/11/2011. In section A.2. another date is indicated. Please make the appropriate corrections.	**CAR 03** **CAR 04**	OK OK
A.3. Project participants				
A.3	Are project participants and Party(ies) involved in the project listed?	Parties involved in the project: SE «Donetska zaliznytsya» (Ukraine is the Host Party) and "VEMA S.A." (Switzerland).	OK	OK
A.3	Is the data of the project participants presented in tabular format?	The data of the project participants is presented in tabular format.	OK	OK
A.3	Is contact information provided in Annex 1 of the PDD?	Contact information is provided in Annex 1 of the PDD.	OK	OK
A.3	Is it indicated, if it is the case, if the Party involved is a host Party?	Ukraine is the Host Party.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participant's measures review	Final Conclusion
A.4 Technical description of the project				
Location of the project				
A.4.1.1	Host Party(ies)	Ukraine is the Host Party.	OK	OK
A.4.1.2	Region/State/Province etc.	SE «Donetska zaliznytsya» is located in the territory of Donetsk, Lugansk, Dnipropetrovsk, Zaporizhzhya and Kharkiv regions.	OK	OK
A.4.1.3	City/Town/Community etc.	The JI project includes all administrative and territorial units wherein SE «Donetska zaliznytsya» is located and which are located in the territory of Donetsk, Lugansk, Dnipropetrovsk, Zaporizhzhya and Kharkiv regions.	OK	OK
A.4.1.4	Detail of the physical location, including information allowing the unique identification of the project. (This section should not exceed one page)	Information about location is given in section A.4.1.4 of the PDD. **CAR 05.** Please provide detailed information about facilities included in the project and the details of their physical location.	**CAR 05**	OK
A.4.2. Technologies to be employed, or measures, operations or actions to be implemented by the project				
A.4.2	Are the technology(ies) to be employed, or measures, operations or actions to be implemented by the project, including all relevant technical data and the implementation schedule described?	PDD Section A.4.3 provides the description of the main stages of the project implementation, some relevant technical data of main equipment to be installed and measures to be implemented under the project as well as the project implementation schedule. **CAR 06.** Please add information on the implementation schedule for each type of measures envisaged under the project to the PDD. **CAR 07.** Please provide references to sites of manufacturers of equipment which will be used in the project. **CAR 08.** Please provide information on quantitative indicators of the project activities for each measure.	**CAR 06** **CAR 07** **CAR 08** **CAR 09** **CAR 10** **CL 01**	OK OK OK OK OK OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participant's measures review	Final Conclusion
		CL 01. Please explain and provide evidence of how the fact that the measures implemented under the project activity are not a part of the maintenance program (emergency, planned repair works, etc.) will be guaranteed. **CAR 09.** Please provide references to Supporting documents where the quantitative indicators of the project implementations are specified. **CAR 10**. Please provide information about the reasons why the proposed measures will not be implemented without the project activity, taking into account national and/or sectoral policies and circumstances.		
A.4.3. Brief explanation of how the anthropogenic emissions of greenhouse gases by sources are to be reduced by the proposed JI project, including why the emission reductions would not occur in the absence of the proposed project, taking into account national and/or sectoral policies and circumstances				
A.4.3	Is it stated how anthropogenic GHG emission reductions are to be achieved? (This section should not exceed one page)	Maximal decrease in energy resources consumption that will result in reduction of GHG emissions into the atmosphere will be achieved due to complex modernization of company's facilities under the project "Implementation of energy efficiency measures at SE "Donetska zaliznytsya". Complex modernization includes: - Modernization of locomotive facilities that will result in decrease of electric power and diesel fuel consumption in the course of rendering services on cargo and passenger transportation; - Modernization of the heat supply system that will result in decrease of electric power and fossil fuel consumption in the course of rendering services on cargo and passenger transportation; - Modernization of buildings and structures that will result in	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participant's measures review	Final Conclusion
		decrease of heat energy consumption in the course of rendering services on cargo and passenger transportation; - Modernization of transformer sub-stations that will result in decrease of electric power losses and consumption in the course of rendering services on cargo and passenger transportation.		
A.4.3	Is it provided the estimation of emission reductions over the crediting period?	The estimation of emission reductions over the crediting period is provided in Section A.4.3.1. of the PDD. **CAR 11.** Please compare the values of ERUs, provided in section A.4.3.1, with the values in section E and the supporting Excel file and specify the correct values. **CAR 12.** In section A.4.3.1. there are incorrect references to section E and Supporting documents. Please provide the correct references.	**CAR 11** **CAR 12**	OK OK
A.4.3	Is it provided the estimated annual reduction for the chosen credit period in tCO_{2e}?	The estimated annual reduction for the first commitment period in tCO_{2e} is provided, as well as the estimated annual reduction for the period before and after the first commitment period within the project.	OK	OK
A.4.3	Are the data from questions above presented in tabular format?	Information for the credit period and after the credit period is presented in tabular format. See. PDD (version 02) tables 14, 15 and 16, section A.4.3.1. **CAR 13.** Please adjust the format of the tables in Section A.4.3.1 in accordance with the Guidelines for users of the JI PDD form version 04.	**CAR 13**	OK
A.4.3.1. Estimated amount of emission reductions over the crediting period				
A.4.3.1	Is the length of the crediting period Indicated?	The length of the crediting period is indicated in the PDD section A.4.3.1. and Section C	OK	OK
A.4.3.1	Are estimates of total as well as annual and	Total as well as annual and average annual emission	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participant's measures review	Final Conclusion
	average annual emission reductions in tonnes of CO_2 equivalent provided?	reductions in tonnes of CO_2 equivalent are provided in accordance with the calculated values in the tables of Section A of PDD and the Supporting documents.		
Project approvals by Parties				
19	Have the DFPs of all Parties listed as "Parties involved" in the PDD provided written project approvals?	**CAR 43.** The project has no approval of the Host Party. To obtain the Letter of Approval the final Determination report must be submitted to the State Environmental Investment Agency of Ukraine that includes this determination Protocol to the list of sources of reference information. The issue will be closed after the Letter of Approval is issued by the Host Party. **CAR 14.** Please provide information when a Letter of Endorsement for the Joint Implementation project was issued by the State Environmental Investment Agency.	**CAR 43** **CAR 14**	Pending OK
19	Does the PDD identify at least the host Party as a "Party involved"?	The Host Party involved is Ukraine.	OK	OK
19	Has the DFP of the host Party issued a written project approval?	Refer to **CAR 43.**	**CAR 43**	Pending
20	Are all the written project approvals by Parties involved unconditional?	The written project approvals by the Parties involved are unconditional.	**CAR 43**	Pending
Authorization of project participants by Parties involved				
21	Is each of the legal entities listed as project participants in the PDD authorized by a Party involved, which is also listed in the PDD, through: − A written project approval by a Party involved, explicitly indicating the name of the legal entity? or	The Party involved 1: Ukraine (the Host Party), legal entity is SE "Donetska zaliznytsya". Party involved 2: Switzerland, legal entity is VEMA S.A. The project participants will be authorized in accordance with the relevant project approvals.	**CAR 43**	Pending

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participant's measures review	Final Conclusion
	− Any other form of project participant authorization in writing, explicitly indicating the name of the legal entity?	Pending **CAR 43.**		
Baseline setting				
22	Does the PDD explicitly indicate which of the following approaches is used for identifying the baseline? − JI specific approach − Approved CDM methodology approach	The chosen baseline is described in section A.1. and section B.1 of the PDD. A specific JI approach is used for setting the baseline. **CAR 15.** Please specify, if elements of the approved CDM methodologies for setting the baseline were used.	**CAR 15**	OK
JI specific approach only				
23	Does the PDD provide a detailed theoretical description in a complete and transparent manner?	The choice of the applicable baseline for the project category is sufficiently justified; detailed theoretical description is provided in section B.1 of PDD version 02. **CAR 16.** Please include in Annex 2 all the key elements used to set the baseline, in tabular form.	**CAR 16**	OK
23	Does the PDD provide justification that the baseline is established: (a) By listing and describing plausible future scenarios on the basis of conservative assumptions and selecting the most plausible one? (b) Taking into account relevant national and/or sectoral policies and circumstance? − Are key factors that affect a baseline taken into account? (c) In a transparent manner with regard to the choice of approaches, assumptions, methodologies, parameters, date sources and key factors?	The PDD provides detailed, full and transparent description and justification that the baseline is established by: (a) Identifying plausible future scenarios and choosing the most plausible one. As a result of evaluation of several alternatives the most plausible of them have been identified and will be used as a baseline: (b) Taking into account key factors such as for example technological rules of the sector, Ukrainian environmental legislation and other national legislation, and key relevant factors, such as the ability of financing of construction and reconstruction of the rail transport system, tariffs, availability of local technologies and methods of the project, skills and	**CAR 17** **CAR 18** **CAR 19**	OK OK OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participant's measures review	Final Conclusion
	(d) Taking into account of uncertainties and using conservative assumptions? (e) In such a way that ERUs cannot be earned for decreases in activity levels outside the project or due to force majeure? (f) By drawing on the list of standard variables contained in appendix B to "Guidance on criteria for baseline setting and monitoring", as appropriate?	experience; (c) In a transparent manner with regard to the choice of JI approach and assumptions, parameters, data sources and key factors for identifying initial conditions listed in tabular format in Section B.1.; (d) Taking into account of uncertainties and using conservative assumptions; (e) In such a way that ERUs cannot be earned for decreases in activity levels outside the project or due to force majeure; (f) By drawing on the list of standard variables. The baseline is identified, the detailed description is given in Section B of the PDD version 02. **CAR 17.** Some parameter and data identifiers do not meet the list of standard variables, which are provided in Appendix B to the "Guidelines on criteria for baseline setting and monitoring." Please make corrections in Section B of the PDD. **CAR 18.** Please check the correctness of data units of parameters and data specified in Section B of the PDD. **CAR 19.** Please, provide a clear confirmation of the choice of data or description of measurement methods and procedures that were (will be) used in accordance with the Guidelines for users of the JI PDD form version 04 for each of the key parameters listed in section B.1.		
24	If selected elements or combinations of approved CDM methodologies or methodological tools for baseline setting are used, are the selected elements or	The baseline assumptions of the developed JI specific approach are clearly described in full in Section B.1 of the PDD version 02.	**CAR 20** **CL 02** **CAR 21**	OK OK OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participant's measures review	Final Conclusion
	combinations together with the elements supplementary developed by the project participants in line with 23 above?	**CAR 20**. Annex 2 must include a summary of key elements. Please add relevant information in Annex 2. **CL 02.** Please explain which of supporting documents were provided by the company relating to electricity and fuel consumption. **CAR 21.** Please add information on CO_2 emission factors for Ukrainian electrical grid to Annex 2.		
25	If a multi-project emission factor is used, does the PDD provide appropriate justification?	When calculating emissions reductions the following factors are used: - carbon dioxide emission factor for electricity consumption by electricity consumers; - carbon emission factor for natural gas combustion; - carbon emission factor for diesel fuel combustion; - coarbon emission factor for hard coal combustion **CAR 22.** Please provide the correct reference to the document Operational Guidelines for Project Design Documents of Joint Implementation Projects, Volume 1: General guidelines (ERUPT) issued by the Ministry of Economy of Netherland.	**CAR 22**	OK
Approved CDM methodology approach only				
26 (a)	Does the PDD provide the title, reference number and version of the approved CDM methodology used?	Not applicable	OK	OK
26 (a)	Is the approved CDM methodology the most recent valid version when the PDD is submitted for publication? If not, is the methodology still within the grace period (was the methodology	Not applicable	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participant's measures review	Final Conclusion
	revised to a newer version in the past two months)?			
26 (b)	Does the PDD provide a description of why the approved CDM methodology is applicable to the project?	Not applicable	OK	OK
26 (c)	Are all explanations, descriptions and analyses pertaining to the baseline in the PDD made in accordance with the referenced approved CDM methodology?	Not applicable	OK	OK
26 (d)	Is the baseline identified appropriately as a result?	Not applicable	OK	OK
Additionality				
JI specific approach only				
28	Does the PDD indicate which of the following approaches for demonstrating additionality is used? (a) Provision of traceable and transparent information showing the baseline was identified on the basis of conservative assumptions, that the project scenario is not part of the identified baseline scenario and that the project will lead to emission reductions or enhancements of removals; (b) Provision of traceable and transparent information that an AIE has already positively determined that a comparable project (to be) implemented under comparable circumstances has additionality; (c) Application of the most recent version of	The PDD indicates that the project scenario is not a part of the established baseline scenario. It is also stated that the project will lead to emission reductions. Additionality of the project activity is demonstrated and assessted using the "Tools for the demonstration and assessment of additionality" (Version 06.0.0). **CL 03.** Please specify what proposed technologies are already widely used in Ukraine. **CAR 23.** In the section devoted to demonstrating additionality the developer states that a methodological guidelines for the demonstration and assessment of additionality (hereinafter the Additionality guidelines) were used. Additionality assessment does not follow the example which was set by Additionality guidelines. Therefore, section relating to additionality assessment should be duly changed. **CAR 24.** Please specify the source of data on investment	**CAR 23** **CL 03** **CAR 24** **CAR 25**	OK OK OK OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participant's measures review	Final Conclusion
	the "Tool for the demonstration and assessment of additionality. (allowing for a two-month grace period) or any other method for proving additionality approved by the CDM Executive Board".	costs of the project. If actual investment costs in local currency were used, then during the conversion exchange rates for the respective years, when the costs were committed must be applied. Please check and make the appropriate corrections. **CAR 25.** Parameter identifier of the discount rate does not comply with the list of standard variables, which are presented in Appendix B to the "Guidelines on criteria for baseline setting and monitoring." Please make the corrections.		
29 (a)	Does the PDD provide a justification of the applicability of the approach with a clear and transparent description?	Detailed analysis described in Section A.4.3, B.1 and B.2, shows that emissions of the baseline scenario are likely to exceed emissions of the project scenario due to the implementation of project activities.	OK	OK
29 (b)	Are additionality proofs provided?	Yes, additionality proofs are provided. Refer to section B.2. of the PDD.	OK	OK
29 (c)	Is the additionality demonstrated appropriately as a result?	The fact that the project activity itself is not the baseline scenario is clearly demonstrated in sections A.2, B.1, B.2 . **CL 04.** Please specify whether there are any mandatory government programs or policy which provide for reconstruction and modernization of the rail transportation system.	**CL 04**	OK
30	If the approach 28 (c) is chosen, are all explanations, descriptions and analyses made in accordance with the selected tool or method?	All explanations, descriptions and analyses are made in accordance with the newest version of the "Tools for the demonstration and assessment of additionality". (Version 06.0.0)	OK	OK
Approved CDM methodology approach only_ Paragraphs 31(a) – 31(e)_Not applicable				

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participant's measures review	Final Conclusion
Project boundary (applicable except for JI LULUCF projects)				
JI specific approach only				
32 (a)	Does the project boundary defined in the PDD encompass all anthropogenic emissions by sources of GHGs that are: (i) Under the control of the project participants? (ii) Reasonably attributable to the project? (iii) Significant?	The project boundary defined in the PDD encompasses all anthropogenic emissions by sources of GHGs that are: (i) Under the control of the project participants, such as: - CO_2 emissions due to diesel fuel combustion and electricity consumption by locomotive facilities. (ii) Reasonably attributable to the project, such as: - CO_2 emissions due to fossil fuel combustion by boiler equipment of the heat supply system for heat generation. (iii) Significant, i.e., as a rule of thumb, would by each source account on average per year over the crediting period for more than 1 per cent of the annual average anthropogenic emissions by sources of GHGs, or exceed an amount of 2,000 tonnes of CO_2 equivalent, whichever is lower. The whole technological complex of the unified system of public rail transportation of SE "Donetska zaliznytsya" is included in the boundary of the project.	OK	OK
32 (b)	Is the project boundary defined on the basis of a case-by-case assessment with regard to the criteria referred to in 32 (a) above?	Project boundary is defined on the basis of case-by-case assessment of different emission sources.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participant's measures review	Final Conclusion
32 (c)	Are the delineation of the project boundary and the gases and sources included appropriately described and justified in the PDD by using a figure or flow chart if it is possible?	**CAR 26.** In the graphic figures 23 and 24 direction of the arrows is incorrectly displayed. Make the necessary corrections.	**CAR 26**	OK
32 (d)	Are all gases and sources included explicitly stated, and the exclusions of any sources related to the baseline or the project are appropriately justified?	All gases and sources included are explicitly stated. See section B of PDD version 02.	OK	OK
Approved CDM methodology approach only_Paragraph 33_ Not applicable				
Crediting period				
34 (a)	Does the PDD state the starting date of the project as the date on which the implementation or construction or real action of the project will begin or began?	According to the Guidelines for users of JI PDD form (version 04) the starting date of the project is the date on which the implementation or construction or real action of the project begins. The project's starting date is identified and specified in section C.1 of the PDD. 22/08/2003 is the date when the Management Board of SE «Donetska zaliznytsya» made a decision to create a Joint Implementation project. **CAR 27.** Date of decision making, specified in Section C.1 does not comply with the date specified in Section A.2. Please make necessary corrections. **CAR 28.** Please provide documentary evidence of the date of project commencement.	**CAR 27** **CAR 28**	OK OK
34 (a)	Is the starting date after 2000?	The starting date is after 2000.	OK	OK
34 (b)	Does the PDD state the expected operational lifetime of the project in years and months?	**CAR 29.** Please state the expected operational lifetime of the project in the format dd / mm / yyyy.	**CAR 29**	OK
34 (c)	Does the PDD state the length of the crediting	The length of the crediting period is stated in section C.3.	**CAR 30**	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participant's measures review	Final Conclusion
	period in years and months?	**CAR 30.** The date of the crediting period beginning - is a date when the first emission reductions are expected to be generated. Please clearly set the crediting period boundary and justify it.		
34 (c)	Is the starting date of the crediting period on or after the date of the first emission reductions or enhancements of net removals generated by the project?	The starting date of the crediting period is on the date when the first assigned amount units are expected, namely January 1, 2004.	OK	OK
34 (d)	Does the PDD state that the crediting period for issuance of ERUs starts only after the beginning of 2008 and does not extend beyond the operational lifetime of the project?	Generation of ERUs relates to the first commitment period of 5 years (January 1, 2008 – December 31, 2012).	OK	OK
34 (d)	If the crediting period extends beyond 2012, does the PDD state that the extension is subject to the host Party approval? Are the estimates of emission reductions or enhancements of net removals presented separately for those until 2012 and those after 2012?	The PDD states that the prolongation of the crediting period beyond 2012 is subject to approval of the host party and estimation of emission reductions of enhancements of net removals is presented separately for those until 2012 and those after 2012 in the relevant sections of PDD. If after the first commitment period under the Kyoto protocol it is prolonged, the crediting period under the project will be prolonged by 8 years/96 months until December 31, 2020.	OK	OK
Monitoring plan				
35	Does the PDD explicitly indicate which of the following approaches is used? − JI specific approach − Approved CDM methodology approach	The proposed project uses a JI specific approach based on the JI requirements in accordance with paragraph 9 (a) of the JI Guidance on criteria for baseline setting and monitoring, version 03.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participant's measures review	Final Conclusion
JI specific approach only				
36 (a)	Does the monitoring plan describe: − All relevant factors and key characteristics that will be monitored? − The period in which they will be monitored? − All decisive factors for the control and reporting of project performance?	**CAR 31.** Please indicate data and parameters which are controlled during the monitoring period, in Appendix 3. The monitoring plan specifies all decisive factors for the control and reporting on project performance: quality control (QC) and quality assurance (QA) procedures; operational and management structures that will be applied when implementing the monitoring plan.	**CAR 31**	OK
36 (b)	Does the monitoring plan specify the indicators, constants and variables used that are reliable, valid and provide transparent picture of the emission reductions or enhancements of net removals to be monitored?	The monitoring plan specifies indicators, constants and variables used that are reliable, valid and provide transparent picture of the emission reductions or enhancement of net removals to be monitored. Data to be monitored are presented in section D of the PDD version 02. Data subject to collection for monitoring of emissions in the project should be presented in Table D.1.1.1. of the PDD. **CL 05.** Please clarify whether the data necessary for determination will be stored after the last transfer of ERUs under the project. **CAR 32.** Please include information about each method of archiving the parameters. **CAR 33.** All parameters which are to be monitored and used to calculate baseline and project emissions should be included in the monitoring plan in sections D.1.1.1 and D.1.1.3 of the PDD according to the Guidelines for users of the JI PDD form version 04. **CAR 34.** Please correct data units of monitoring data and parameters in Sections D.1.1.1 and D.1.1.3 of the PDD. **CAR 35.** Identifiers of certain parameters in Sections D.1.1.1	**CAR 32** **CAR 33** **CAR 34** **CAR 35** **CAR 36** **CL 05**	OK OK OK OK OK OK OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participant's measures review	Final Conclusion
		and D.1.1.3 of the PDD do not correspond to the list of standard variables, which are presented in Appendix B to the "Guidelines on criteria for baseline setting and monitoring." Please make the corrections. **CAR 36.** Data sources that were (will be) used for monitoring parameters in Section D of the PDD, sometimes are provided in Russian. Please translate into Ukrainian.		
36 (b)	If default values are used: − Are accuracy and reasonableness carefully balanced in their selection? − Do the default values originate from recognized sources? − Are the default values supported by statistical analyses providing reasonable confidence levels? − Are the default values presented in a transparent manner?	Default values are provided in the table of Annex 3 to the PDD version 02. They originate from recognized sources and are presented in a transparent manner.	OK	OK
36 (b) (i)	For those values that are to be provided by the project participants, does the monitoring plan clearly indicate how the values are to be selected and justified?	The monitoring plan clearly indicates how the values are to be selected and justified.	OK	OK
36 (b) (ii)	For other values, − Does the monitoring plan clearly indicate the precise references from which these values are taken? − Is the conservativeness of the values provided justified?	**CAR 37.** Please, number all formulae in Section D of the PDD. **CAR 38.** Please provide all the values of emission reductions in tonnes of CO_2 equivalent in the PDD.	**CAR 37** **CAR 38**	OK OK
36 (b) (iii)	For all data sources, does the monitoring plan specify the procedures to be followed if expected data are unavailable?	Refer to section D of the PDD. **CAR 39.** Please add information regarding collecting and	**CAR 39**	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participant's measures review	Final Conclusion
		archiving of data in Section D.1.1.		
36 (b) (iv)	Are International System Unit (SI units) used?	IS units are used for certain parameters.	OK	OK
36 (b) (v)	Does the monitoring plan note any parameters, coefficients, variables, etc. that are used to calculate baseline emissions or net removals but are obtained through monitoring?	Relevant data necessary for determining the baseline of anthropogenic emissions of greenhouse gases within the project boundary is presented in table D.1.1.3. of the PDD.	OK	OK
36 (b) (v)	Is the use of parameters, coefficients, variables, etc. consistent between the baseline and monitoring plan?	The use of parameters, coefficients and variables are consistent between the baseline and monitoring plan.	OK	OK
36 (c)	Does the monitoring plan draw on the list of standard variables contained in appendix B of "Guidance on criteria for baseline setting and monitoring"?	The monitoring plan is established taking into account the "Guidance on criteria for baseline setting and monitoring".	OK	OK
36 (d)	Does the monitoring plan explicitly and clearly distinguish: (i) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), and that are available already at the stage of determination? (ii) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), but that are not already available at the stage of determination? (iii) Data and parameters that are monitored throughout the crediting period?	**CAR 40.** Please, after correction of the monitoring plan and the inclusion of all required monitoring data, indicate clearly: (I) Data and parameters not subjected to monitoring throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period) and are available at the time of determination; (Ii) Data and parameters not monitored throughout the crediting period, as determined only once (and consequently throughout the crediting period) and are not available at the time of determination; (Iii) Data and parameters that are subjected to monitoring throughout the crediting period.	**CAR 40**	OK
36 (e)	Does the monitoring plan describe the methods	In tables of parameters provided in section D.1.1.1. of the	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participant's measures review	Final Conclusion
	employed for data monitoring (including its frequency) and recording?	PDD the time of monitoring (frequency) and the source of data to be used, as well as recording method are indicated for all the monitored parameters and data.		
36 (f)	Does the monitoring plan elaborate all algorithms and formulae used for the estimation/calculation of baseline emissions/removals and project emissions/removals or direct monitoring of emission reductions from the project, leakage, as appropriate?	All algorithms and formulae used for the estimation of baseline and project emissions are indicated and explained in the PDD. The description of formulae is provided in Section D.1.4.	OK	OK
36 (f) (i)	Is the underlying rationale for the algorithms/formulae explained?	Refer to section 36 (f) of this table.	OK	OK
36 (f) (ii)	Are consistent variables, equation formats, subscripts etc. used?	Consistent variables, equation formats, subscripts etc. are used.	OK	OK
36 (f) (iii)	Are all equations numbered?	See **CAR 37**	Pending	OK
36 (f) (iv)	Are all variables, with units indicated defined?	Yes. Refer to section D of the PDD.	OK	OK
36 (f) (v)	Is the conservativeness of the algorithms/procedures justified?	Yes, algorithms/procedures comply with state norms and are conservative.	OK	OK
36 (f) (v)	To the extent possible, are methods to quantitatively account for uncertainty in key parameters included?	Uncertainty in parameters used is low taking into account the algorithms of data monitoring.	OK	OK
36 (f) (vi)	Is consistency between the elaboration of the baseline scenario and the procedure for calculating the emissions or net removals of the baseline ensured?	There is consistency between the elaboration on the baseline scenario and procedure for calculating the baseline emissions in the monitoring plan and in tables.	OK	OK
36 (f) (vii)	Are any parts of the algorithms or formulae that are not self-evident explained?	The formulae used in the PDD are sufficiently described.	OK	OK
36 (f) (vii)	Is it justified that the procedure is consistent	Monitoring under the project does not require changes in	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participant's measures review	Final Conclusion
	with standard technical procedures in the relevant sector?	existing accounting system and data collection existing at SE "Donetska zaliznytsya".		
36 (f) (vii)	Are references provided as necessary?	All necessary references are provided.	OK	OK
36 (f) (vii)	Are implicit and explicit key assumptions explained in a transparent manner?	All key assumptions are explained in a transparent manner.	OK	OK
36 (f) (vii)	Is it clearly stated which assumptions and procedures have significant uncertainty associated with them, and how such uncertainty is to be addressed?	N/A	OK	OK
36 (f) (vii)	Is the uncertainty of key parameters described and, where possible, is an uncertainty range at 95% confidence level for key parameters for the calculation of emission reductions or enhancements of net removals provided?	Electricity, gas and diesel meters are subject to a regular calibration according to the quality control procedures and the law of Ukraine "On metrology and metrological activity". Thus, the issue of uncertainty range and confidence interval is irrelevant for such measurements.	OK	OK
36 (g)	Does the monitoring plan identify a national or international monitoring standard if such standard has to be and/or is applied to certain aspects of the project? Does the monitoring plan provide a reference as to where a detailed description of the standard can be found?	The monitoring plan was set according to national norms and standards. The monitoring plan refers to the state statistic form 11-MTP.	OK	OK
36 (h)	Does the monitoring plan document statistical techniques, if used for monitoring, and that they are used in a conservative manner?	N/A	OK	OK
36 (i)	Does the monitoring plan present the quality assurance and control procedures for the monitoring process, including, as appropriate, information on calibration and on how records	Quality control and quality assurance procedures to be used in the monitoring of the measured data are presented in table of section D.2. of the PDD.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participant's measures review	Final Conclusion
	on data and/or method validity and accuracy are kept and made available upon request?			
36 (j)	Does the monitoring plan clearly identify the responsibilities and the authority regarding the monitoring activities?	Information on monitoring of greenhouse emissions according to the baseline and project scenario shall be archived and stored as electronic and hard copies and will be at disposal of a person responsible for project monitoring. Detailed operational and management structures are given in Appendix 3 to the PDD. **CL 06.** Please explain in section D.4., that VEMA S.A. and SE "Donetska zaliznytsya" are the project participants and make reference to Annex 1.	**CL 06**	OK
36 (k)	Does the monitoring plan, on the whole, reflect good monitoring practices appropriate to the project type? If it is a JI LULUCF project, is the good practice guidance developed by IPCC applied?	Monitoring under the project does not require changes in existing accounting system and data collection procedure.	OK	OK
36 (l)	Does the monitoring plan provide, in tabular form, a complete compilation of the data that need to be collected for its application, including data that are measured or sampled and data that are collected from other sources but not including data that are calculated with equations?	Tables D.1.1.1 and D.1.1.3 provide compilation of all data needed to monitor project and baseline emissions.	OK	OK
36 (m)	Does the monitoring plan indicate that the data monitored and required for verification are to be kept for two years after the last transfer of ERUs for the project?	Data to be monitored and required for determination will be kept for two years after the last transfer of ERUs under the project.	OK	OK
37	If selected elements or combinations of approved CDM methodologies or methodological tools are used for establishing	Selected elements elements that were additionally developed by the project participants are in line with requirements of paragraph 36 above.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participant's measures review	Final Conclusion
	the monitoring plan, are the selected elements or combination, together with elements supplementary developed by the project participants in line with 36 above?			
Approved CDM methodology approach only_Paragraphs 38(a) – 38(d)_Not applicable				
Applicable to both JI specific approach and approved CDM methodology approach				
39	If the monitoring plan indicates overlapping monitoring periods during the crediting period: (a) Is the underlying project composed of clearly identifiable components for which emission reductions or enhancements of removals can be calculated independently? (b) Can monitoring be performed independently for each of these components (i.e. the data/parameters monitored for one component are not dependent on/effect data/parameters to be monitored for another component)? (c) Does the monitoring plan ensure that monitoring is performed for all components and that in these cases all the requirements of the JI guidelines and further guidance by the JISC regarding monitoring are met? (d) Does the monitoring plan explicitly provide for overlapping monitoring periods of clearly defined project components, justify its need and state how the conditions mentioned in (a)-(c) are met?	No periods that overlap during the crediting period are expected.	OK	OK
Leakage				
JI specific approach only				

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participant's measures review	Final Conclusion
40 (a)	Does the PDD appropriately describe an assessment of the potential leakage of the project and appropriately explain which sources of leakage are to be calculated and which can be neglected?	Potential leakage sources due to project activity are not expected.	OK	OK
40 (b)	Does the PDD provide a procedure for an ex ante estimate of leakage?	Leakage due to project activity is not expected.	OK	OK
Approved CDM methodology approach only_Paragraph 41_Not applicable				
Estimation of emission reductions or enhancements of net removals				
42	Does the PDD indicate which of the following approaches it chooses? (a) Assessment of emissions or net removals in the baseline scenario and in the project scenario (b) Direct assessment of emission reductions	In the PDD the approach of assessment of emissions in the baseline scenario and in the project scenario is indicated. Formulae, used to estimate project emissions, are described in section D.1.1.2. of the PDD. **CAR 41.** Please, check the numbering of tables and make relevand corrections.	**CAR 41**	OK
43	If the approach (a) in 42 is chosen, does the PDD provide ex ante estimates of: (a) Emissions or net removals for the project scenario (within the project boundary)? (b) Leakage, as applicable? (c) Emissions or net removals for the baseline scenario (within the project boundary)? (d) Emission reductions or enhancements of net removals adjusted by leakage?	PDD provides ex ante estimates of: (a) Emissions in the project scenario (Section E.1); (b) Leakage (Section E.2); (c) Emissions in the baseline scenario (Section E.4); (d) Emission reductions adjusted by leakage (Section E.6).	OK	OK
44	If the approach (b) in 42 is chosen, does the PDD provide ex ante estimates of: (a) Emission reductions or enhancements of net removals (within the project boundary)? (b) Leakage, as applicable?	N/A	N/A	N/A

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participant's measures review	Final Conclusion
	(c) Emission reductions or enhancements of net removals adjusted by leakage?			
45	For both approaches in 42 (a) Are the estimates in 43 or 44 given: (i) On a periodic basis? (ii) At least from the beginning until the end of the crediting period? (iii) On a source-by-source/sink-by-sink basis? (iv) For each GHG? (v) In tones of CO_2 equivalent, using global warming potentials defined by decision 2/CP.3 or as subsequently revised in accordance with Article 5 of the Kyoto Protocol? (b) Are the formula used for calculating the estimates in 43 or 44 consistent throughout the PDD? (c) For calculating estimates in 43 or 44, are key factors influencing the baseline emissions or removals and the activity level of the project and the emissions or net removals as well as risks associated with the project taken into account, as appropriate? (d) Are data sources used for calculating the estimates in 43 or 44 clearly identified, reliable and transparent? (e) Are emission factors (including default emission factors) if used for calculating the estimates in 43 or 44 selected by carefully	(a) Estimates in 43 are given on the periodic basis, in tones of CO_2 equivalent, on a source-by-source basis, before, during and after the crediting perion. (b) The formulae used in PDD are consistent. (c) Key factors influencing the baseline emissions and the activity level of the project and the project emissions are taken into account, as appropriate. (d) Data sources used for calculating the estimates are clearly identified, reliable and transparent. (e) Default values are taken from identified sources. (f) Estimation in 43 is based on conservative assumptions and the most plausible scenario in a transparent manner. (g) Estimates in 43 are consistent throughout the PDD. (h) The annual average of estimated emission reductions are calculated correctly (by dividing the total estimated emission reductions over the crediting period by the total months of the crediting period and multiplying by twelve).	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participant's measures review	Final Conclusion
	balancing accuracy and reasonableness, and appropriately justified of the choice? (f) Is the estimation in 43 or 44 based on conservative assumptions and the most plausible scenarios in a transparent manner? (g) Are the estimates in 43 or 44 consistent throughout the PDD? (h) Is the annual average of estimated emission reductions or enhancements of net removals calculated by dividing the total estimated emission reductions or enhancements of net removals over the crediting period by the total months of the crediting period and multiplying by twelve?			
46	If the calculation of the baseline emissions or net removals is to be performed ex post, does the PDD include an illustrative ex ante emissions or net removals calculation?	Illustrative ex ante emissions calculation is provided in the PDD.	OK	OK
Approved CDM methodology approach only_Paragraphs 47(a) – 47(b)_Not applicable				
Environmental impacts				
48 (a)	Does the PDD list and attach documentation on the analysis of the environmental impacts of the project, including transboundary impacts, in accordance with procedures as determined by the host Party?	The environmental impacts of the project have been sufficiently described All adverse impacts on the environment that arise in the course of rendering services on rail transportation of cargo and passengers do not exceed the permissible limits prescribed according to: ▪ Law of Ukraine № 1264-XII "On environmental protection" dated 25/06/1991;	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participant's measures review	Final Conclusion
		▪ Law of Ukraine № 2707-XII «On atmospheric air protection» dated 16/10/1992; ▪ Current rules on emission limitation: «Norms of maximum permissible emissions of pollutants from permanent sources» – approved by the Ministry of Environmental Protection of Ukraine dated 27/06/2006, №309 and registered in the Ministry of Justice of Ukraine dated 01/09/2006, №912/12786.		
48 (b)	If the analysis in 48 (a) indicates that the environmental impacts are considered significant by the project participants or the host Party, does the PDD provide conclusion and all references to supporting documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party?	**CAR 42.** Please provide references to regulatory and legislative documents of Ukraine on assessment of the environmental impacts listed in Section F.1. and F.2. of the PDD.	**CAR 42**	OK
Stakeholder consultations				
49	If stakeholder consultation was undertaken in accordance with the procedure as required by the host Party, does the PDD provide: (a) A list of stakeholders from whom comments on the projects have been received, if any? (b) The nature of the comments? (c) A description on whether and how the comments have been addressed?	**CR 07.** Please explain how the stakeholders were informed about the project activity. Since the project activities do not imply any negative environmental impact and negative social effect, special public discussions were not necessary.	**CL 07**	OK
Determination regarding small-scale projects (additional elements for assessment)				
Determination regarding land use, land-use change and forestry projects (additional/alternative elements for assessment)				

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participant's measures review	Final Conclusion
Determination regarding programmes of activities (additional/alternative elements for assessment)				

Table 2 RESOLUTION OF CORRECTIVE ACTION AND CLARIFICATION REQUESTS

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participant's responses	Determination team conclusion
CAR 01. Please provide the correct sectoral scopes to which the project pertains and correct this information in Section A.1. of the PDD.	A.1	Sectoral Scopes were listed: Sectoral Scope 1 - Energy industries (renewable - / non-renewable sources) Sectoral Scope 2 – Energy distribution Sectoral Scope 3 – Energy demand	Information was corrected in Section A.1. of the PDD version 02.
CAR 02. Please provide an explanation of abbreviations and acronyms when first mentioned throughout the text of the PDD.	A.2	An explanation of abbreviations and acronyms were given throughout the text of the PDD version 02.	The issue is closed.
CAR 03. Please provide more detailed information about the history of the project (including its JI component) as well as the documents confirming this information as supporting ones.	A.2	22/08/2003 – In the meeting of the Management Board of SE «Donetska zaliznytsya» a decision to create a Joint Implementation project entitled "Implementation of electric energy efficiency measures at SE «Donetska zaliznytsya» was made 15/09/2003 - date of commencement of project documentation elaboration for Joint Implementation project "Implementation of energy efficiency measures at SE "Donetska zaliznytsya". 01/01/2004 - date of implementation of new energy efficient equipment according to the project documentation.	Information about the history of the project is provided in Section A.2 of the PDD version 02. The issue is closed.
CAR 04. Letter of Endorsement for the JI Project "Implementation of energy efficiency measures at SE «Donetska zaliznytsya» issued by the State Environmental Investment Agency of Ukraine was received on 09/11/2011. In section A.2. another date is indicated. Please make the appropriate	A.2	09/11/2011- obtaining of a Letter of Endorsement from the State Environmental Investment Agency of Ukraine.	Corrections are made in the PDD. The issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participant's responses	Determination team conclusion
corrections.			
CAR 05. Please provide detailed information about facilities included in the project and the details of their physical location.	A.4.1.4	The project includes the entire technological complex of public rail transportation, which includes: railway lines, facilities for transportation of cargo and passengers and means for maintenance of railways, railway stations, transformer-substations, boiler-houses, etc. Details of their physical location are provided in Table 2 of Section A.2 of the PDD.	Details of physical location of facilities are provided in Section A.2 of the PDD, the issue is closed.
CAR 06. Please add information on the implementation schedule for each type of measures envisaged under the project to the PDD.	A.4.2	Schedule of reconstruction and modernization of the unified rail transportation complex is presented in Table 13 in the PDD.	The information is provided, the issue is closed.
CAR 07. Please provide references to sites of manufacturers of equipment which will be used in the project.	A.4.2	The references to sites of manufacturers of equipment, which is planned for implementation under the project, are provided in the PDD version 02.	The references are checked, the issue is closed.
CAR 08. Please provide information on quantitative indicators of the project activities for each measure.	A.4.2	The quantity of equipment, its type and technical characteristics are presented in Supporting documents for each measure provided by the JI project.	The information was verified, the issue is closed.
CAR 09. Please provide references to Supporting documents where the quantitative indicators of the project implementations are specified.	A.4.2	References to relevant Supporting documents were provided in Section A.4.2.	The information was provided, the issue is closed.
CAR 10. Please provide information about the reasons why the proposed measures will not be implemented without the project activity, taking	A.4.2	Modernization and measures to improve the railway system by means of the use of energy saving technologies are to be	Explanations were accepted, the issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participant's responses	Determination team conclusion
into account national and/or sectoral policies and circumstances.		carried out by the company, and SE «Donetska zaliznytsya» has no incentive to introduce new equipment and new technologies. In the absence of the Joint Implementation project (JIP) the volume of consumed electricity and fossil fuels, would only increase (due to technical and moral depreciation of equipment). A detailed justification is presented in Sections A and B of the PDD.	
CAR 11. Please compare the values of ERUs, provided in section A.4.3.1, with the values in section E and the supporting Excel file and specify the correct values.	A.4.3	The correct values were presented in the Supporting documents.	Corrections were made, the issue is closed.
CAR 12. In section A.4.3.1. there are incorrect references to section E and Supporting documents. Please provide the correct references.	A.4.3	Incorrect references were corrected in Section A.4.3.1.	The correct references are provided, the issue is closed.
CAR 13. Please adjust the format of the tables in Section A.4.3.1 in accordance with the Guidelines for users of the JI PDD form version 04.	A.4.3	Format of Tables in A.4.3.1 corresponds to Guidelines for users of the JI PDD form version 04.	Corrections were made, the issue is closed.
CAR 14. Please provide information when a Letter of Endorsement for the Joint Implementation project was issued by the State Environmental Investment Agency.	19	The project "Implementation of energy efficiency measures at SE "Donetska zaliznytsya" has already obtained support of the government of Ukraine, namely a Letter of Endorsement №3306/23/7 dated 09/11/2011 issued by the State Environmental Investment Agency.	Information was provided. The issue is closed.
CAR 15. Please specify, if elements of the approved CDM methodologies for setting the baseline were used.	22	A specific approach was used to set the baseline. See Section B of the PDD.	Information was provided. The issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participant's responses	Determination team conclusion
CAR 16. Please include in Annex 2 all the key elements used to set the baseline, in tabular form.	23	All key elements used to set the baseline, were provided in Annex 2 in the form of a table.	The issue is closed, based on relevant corrections.
CAR 17. Some parameter and data identifiers do not meet the list of standard variables, which are provided in Appendix B to the "Guidelines on criteria for baseline setting and monitoring." Please make corrections in Section B of the PDD.	23	Identifiers of elements were corrected in accordance with the list of standard variables of the Guidelines.	The issue is closed, based on relevant corrections.
CAR 18. Please check the correctness of data units of parameters and data specified in Section B of the PDD.	23	Data units of parameters were verified. The appropriate corrections were made.	The issue is closed, based on relevant corrections.
CAR 19. Please, provide a clear confirmation of the choice of data or description of measurement methods and procedures that were (will be) used in accordance with the Guidelines for users of the JI PDD form version 04 for each of the key parameters listed in section B.1.	23	The relevant justification for each of the key parameters was included in section B.1. PDD Version 02.	The issue is closed, based on relevant corrections in the PDD.
CAR 20. Annex 2 must include a summary of key elements. Please add relevant information in Annex 2.	24	The key elements for setting the baseline (including their description, data source and data units) were presented in Annex 2 of the PDD.	The information is checked, the issue is closed.
CAR 21. Please add information on CO_2 emission factors for Ukrainian electrical grid to Annex 2.	24	Information on emission factors was added to Annex 2 to the PDD.	Checked. The issue is closed.
CAR 22. Please provide the correct reference to the document Operational Guidelines for Project Design Documents of Joint Implementation Projects, Volume 1: General guidelines (ERUPT) issued by the Ministry of Economy of Netherland.	25	References are given in Section B of the PDD version 02: http://ji.unfccc.int/CallForInputs/BaselineSettingMonitoring/ERUPT/index.html	The reference is checked, the issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participant's responses	Determination team conclusion
CAR 23. In the section devoted to demonstrating additionality the developer states that a methodological guidelines for the demonstration and assessment of additionality (hereinafter the Additionality guidelines) were used. Additionality assessment does not follow the example which was set by Additionality guidelines. Therefore, section relating to additionality assessment should be duly changed.	28	Section B.2. of the PDD, which describes the additionality of the JI project, was corrected according to the methodological guidance for the demonstration and assessment of additionality.	The section was corrected, the issue is closed.
CAR 24. Please specify the source of data on investment costs of the project. If actual investment costs in local currency were used, then during the conversion exchange rates for the respective years, when the costs were committed must be applied. Please check and make the appropriate corrections.	28	The financial model was adjusted with consideration of the comments. Appropriate corrections were made in the PDD version 02 and the supporting documents.	The issue is closed, based on relevant corrections in the PDD and Supporting documents.
CAR 25. Parameter identifier of the discount rate does not comply with the list of standard variables, which are presented in Appendix B to the "Guidelines on criteria for baseline setting and monitoring." Please make the corrections.	28	Identifier of the discount rate was changes tot *dr*.	Corrections were made, the issue is closed.
CAR 26. In the graphic figures 23 and 24 direction of the arrows is incorrectly displayed. Make the necessary corrections.	32(c)	Graphic pictures showing the project boundary for the baseline and project scenarios were fixed.	Corrections were made, the issue is closed.
CAR 27. Date of decision making, specified in Section C.1 does not comply with the date specified in Section A.2. Please make necessary corrections.	34(a)	The date of commencement of the project is 22/08/2003, when in the meeting of the Management Board of SE «Donetska zaliznytsya» a decision to create a Joint Implementation project was made	Corrections were made, the issue is closed.
CAR 28. Please provide documentary evidence of the date of project commencement.	34(a)	Minutes of the meeting of the SE "Donetska Zaliznytsya" management dated 22/08/2003 (Decision to implement	Documentary evidence is provided. The issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participant's responses	Determination team conclusion
		the JI project at the enterprise) were provided as Supporting document.	
CAR 29. Please state the expected operational lifetime of the project in the format dd / mm / yyyy.	34 (b)	Expected operational lifetime of the project lasts from 01/01/2004 to 31/12/2020 and is 17 years or 204 months, subject to proper maintenance.	The information was provided. The issue is closed.
CAR 30. The date of the crediting period beginning - is a date when the first emission reductions are expected to be generated. Please clearly set the crediting period boundary and justify it.	34(c)	The date on which the first assigned amount units are expected to be generated was taken as the starting date of the crediting period, namely January 1, 2004. ERU generation refers to the first commitment period of 5 years (January 1, 2008 – December 31, 2012). The PDD states that the extension of its crediting period beyond 2012 is subject to the host Party approval, and the estimates of emission reductions are presented separately for those until 2012 and those after 2012 in all relevant sections of the PDD. If after the first commitment period under the Kyoto Protocol its validity is prolonged, crediting period under the project will be prolonged by 8 years/96 months (January 01, 2013-December 31, 2020).	The Crediting period limits are set in Section C of the PDD. The issue is closed.
CAR 31. Please indicate data and parameters which are controlled during the monitoring period, in Appendix 3.	36(a)	The relevant data and parameters were provided in Appendix 3.	Corrections are made, the issue is closed.
CAR 32. Please include information about each method of archiving the parameters.	36(b)	Data necessary for estimation of GHG anthropogenic emission reductions within	Information was provided in relevant sections. The issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participant's responses	Determination team conclusion
		the project boundary and the method of archiving of such parameters (paper and electronic forms) are provided in tabular form in sections B.1., D.1.1.3., D.1.1.4	
CAR 33. All parameters which are to be monitored and used to calculate baseline and project emissions should be included in the monitoring plan in sections D.1.1.1 and D.1.1.3 of the PDD according to the Guidelines for users of the JI PDD form version 04.	36(b)	Sections D.1.1.1. and D.1.1.3. are complemented.	The information is checked, the issue is closed.
CAR 34. Please correct data units of monitoring data and parameters in Sections D.1.1.1 and D.1.1.3 of the PDD.	36(b)	Corrections are made in Sections D.1.1.1 and D.1.1.3. PDD.	Corrections are made, the issue is closed.
CAR 35. Identifiers of certain parameters in Sections D.1.1.1 and D.1.1.3 of the PDD do not correspond to the list of standard variables, which are presented in Appendix B to the "Guidelines on criteria for baseline setting and monitoring." Please make the corrections.	36(b)	Corrections are made in Sections D.1.1.1 and D.1.1.3. PDD.	Corrections are accepted, the issue is closed.
CAR 36. Data sources that were (will be) used for monitoring parameters in Section D of the PDD, sometimes are provided in Russian. Please translate into Ukrainian.	36(b)	Translation of data sources into Ukrainian is provided in Section D in PDD.	The issue is closed based on relevant corrections.
CAR 37. Please, please number all formulas in Section D of the PDD.	36 (b) (ii)	All the formulas presented in Section D of the PDD version 02, were numbered.	The issue is closed based on relevant corrections.
CAR 38. Please provide all the values of emission reductions in tonnes of CO_2 equivalent in the PDD.	36 (b) (ii)	The values of emission reductions were presented in tonnes of CO_2 equivalent throughout the PDD.	The issue is closed based on relevant corrections.
CAR 39. Please, add information on the collection	36 (b) (iii)	The way of collection and archiving of	Information was provided. The issue

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participant's responses	Determination team conclusion
and archiving of information in Section D.1.1.		data was specified in Sections D.1.1.1. and D.1.1.3.	is closed.
CAR 40. Please, after correction of the monitoring plan and the inclusion of all required monitoring data, indicate clearly: (I) Data and parameters not subjected to monitoring throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period) and are available at the time of determination; (Ii) Data and parameters not monitored throughout the crediting period, as determined only once (and consequently throughout the crediting period) and are not available at the time of determination; (Iii) Data and parameters that are subjected to monitoring throughout the crediting period.	36 (d)	All parameters of the monitoring plan, adjusted by taking into account all the comments, were divided into three groups: (i) Data and parameters not subjected to monitoring throughout the crediting period, but are defined only once and which are available at the time of determination; (ii) Data and parameters not subjected to monitoring throughout the crediting period, but are defined only once and which are not available at the stage of determination; (iii) Data and parameters that are monitored throughout the crediting period. These parameters are listed in Section D.1. PDD version 02.	The issue is closed, based on corrections made in the PDD.
CAR 41. Please, check the numbering of tables and make relevand corrections.	42	Numbering of tables was corrected in the PDD version 02.	Corrections were made, the issue is closed.
CAR 42. Please provide references to regulatory and legislative documents of Ukraine on assessment of the environmental impacts listed in Section F.1. and F.2. of the PDD.	48(b)	References to the following documents have been provided in Sections F.1 and F.2: ▪ Law of Ukraine № 1264-XII "On environmental protection" dated 25/06/1991; ▪ Law of Ukraine № 2707-XII «On atmospheric air protection» dated 16/10/1992; ▪ Current rules on emission limitation:	The references are checked. The issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participant's responses	Determination team conclusion
		«Norms of maximum permissible emissions of pollutants from permanent sources» – approved by the Ministry of Environmental Protection of Ukraine dated 27/06/2006, №309 and registered in the Ministry of Justice of Ukraine dated 01/09/2006, №912/12786.	
CAR 43. The project has no approval of the Host Party.	19	To obtain the Letter of Approval the final Determination report must be submitted to the State Environmental Investment Agency of Ukraine that includes this determination Protocol to the list of sources of reference information.	The issue will be closed after the Letter of Approval is issued by the Host Party.
CL 01. Please explain and provide evidence of how the fact that the measures implemented under the project activity are not a part of the maintenance program (emergency, planned repair works, etc.) will be guaranteed.	A.4.2	Before the JI project the SE «Donetska zaliznytsya» almost did not perform the complex modernization of equipment due to limited funding of works, lack of perspective plan of development and insufficient level of legal framework which didn't allow regulating functionality of company's facilities. Despite the poor condition of low-effective but still operable equipment, operational experience and economic factors one may conclude that the equipment which has been operated before the realization of JI project may be operated for at least 15-20 years. A detailed explanation is presented in Sections A and B of the PDD version 02.	The issue is closed based on provision of relevant clarifications.
CL 02. Please explain what documentary evidence was provided by the company relating to	24	The company provided the following documents:	Documentary evidence was checked, the issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participant's responses	Determination team conclusion
electricity and fuel consumption.		- Logbook of consumed electricity; - Form 11-MTP, reports on the use of fuel, heat and electricity. See PDD Version 02.	
CL 03. Please specify what proposed technologies are already widely used in Ukraine.	28	Information is provided in Section B of the PDD version 02.	Explanations are sufficient, the issue is closed.
CL 04. Please specify whether there are any mandatory government programs or policy which provide for reconstruction and modernization of the rail transportation system.	29(c)	In order to reform rail transport to meet the growing needs of the national economy and population in transportation, improve quality and reduce the cost of transport component in the price of products a Concept of the State program of reforming railway transport of Ukraine* № 651-r, approved by the Cabinet of Ministers of Ukraine dated December 27, 2006 was developed. But the financing of the Program is planned to be provided by railway and rail transport companies, which makes it unattractive from an investment standpoint, given the poor economic situation of the enterprises. In addition, the mechanisms for encouragement of implementation of the measures described in program are not provided, which leads to lack of interest of rail transport companies in conducting measures to improve energy efficiency and reduce environmental impact.	The issue is closed based on necessary clarification.
CL 05. Please clarify whether the data necessary	36 (b)	Data to be monitored and required for	Clarifications are accepted. The

*http:/www.uz.gov.ua/?m=info.menu_koncepc&lng=uk

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participant's responses	Determination team conclusion
for determination will be stored after the last transfer of ERUs under the project.		determination and subsequent verification will be archived and stored at SE "Donetska Zaliznutsya" for two years after the transfer of emission reduction units generated by the project.	issue is closed.
CL 06. Please explain in section D.4., that VEMA S.A. and SE "Donetska zaliznytsya" are the project participants and make reference to Annex 1.	36 (j)	It is stated in Section D.4 that VEMA S.A. and SE "Donetska Zaliznytsya" are the participants of the project. Contact information on project participants is provided in Annex 1.	The issue is closed based on corrections made.
CL 07. Please explain how the stakeholders were informed about the project activity.	49	SE "Donetska Zaliznytsya" constantly informs the public about the decisions on implementations and modernizations that are implemented or planned, and stages of their implementation at the official website of the company. Stakeholders may provide their comments and take part in the discussion of these issues.	Clarifications are accepted, the issue is closed.