DETERMINATION REPORT
"SERVICE-INVEST" LLC

DETERMINATION OF THE
RECONSTRUCTION OF THE ELECTRICITY GRID OF THE "SERVICE-INVEST" LLC.

REPORT NO. UKRAINE-DET/0460/2012

REVISION NO. 01

BUREAU VERITAS CERTIFICATION

Date of first issue: 04/05/2012	Organizational unit: Bureau Veritas Certification Holding SAS
Client: "Service-Invest" LLC	Client ref.: Iryna Protopopova

Summary:
Bureau Veritas Certification has made the determination of the "Reconstruction of the Electricity Grid of the "Service-Invest" LLC." project of "Service-Invest" LLC located in Donetsk and Dnipropetrovs'k 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 project's baseline study, monitoring plan and other relevant documents, and consisted of the following three phases: i) desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final determination report and opinion. The overall determination, from Contract Review to Determination Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

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

In summary, it is Bureau Veritas Certification's opinion that the project correctly 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/0460/2012	Subject Group: JI
Project title: "Reconstruction of the Electricity Grid of the "Service-Invest" LLC."	
Work carried out by: Oleg Skoblyk – Team Leader, Lead Verifier Vyacheslav Yeriomin – Team Member, Verifier Denis Pishchalov - Team Member, Finansial specialist	
Work reviewed by: Ivan Sokolov - Internal Technical Reviewer Daniil Ukhanov - Technical Specialist	
Work approved by: Ivan Sokolov - Operational Manager	
Date of this revision: 11/07/2012	Rev. No.: 01 / Number of pages: 76

Indexing terms

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1 INTRODUCTION

"Service-Invest" LLC has commissioned Bureau Veritas Certification to determine its JI project "Reconstruction of the Electricity Grid of the "Service-Invest" LLC." (hereafter called "the project") at Donetsk and Dnipropetrovs'k 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 of all projects. The determination is an independent third party assessment of the project design. In particular, the project's baseline, the monitoring plan (MP), and the project's compliance with relevant UNFCCC and host country criteria are determined in order to confirm that the project design, as documented, is sound and reasonable, and meets the stated requirements and identified criteria. Determination is a requirement for all JI projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of emission reduction units (ERUs).

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

1.2 Scope

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

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

1.3 Determination team

The determination team consists of the following personnel:

Oleg Skoblyk
Bureau Veritas Certification Team Leader, Climate Change Verifier

Vyacheslav Yeriomin
Bureau Veritas Certification Climate Change Verifier

Denis Pishchalov

Bureau Veritas Certification, Finansial specialist

This determination report was reviewed by:

Ivan Sokolov
Bureau Veritas Certification, Internal reviewer

Daniil Ukhanov
Bureau Veritas Certification, Technical 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 determination and the results from determining the identified criteria. The determination protocol serves the following purposes:

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

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

2.1 Review of Documents

The Project Design Document (PDD) submitted by "Elta-Eco" LLC and additional background documents related to the project design and baseline, i.e. country Law, Guidelines for users of the joint implementation project design document form, Approved CDM methodology and/or Guidance on criteria for baseline setting and monitoring, Kyoto Protocol, Clarifications on Determination Requirements to be Checked by an Accredited Independent Entity were reviewed.

To address Bureau Veritas Certification corrective action and clarification requests,"Elta-Eco" LLC revised the PDD and resubmitted it on 25/06/2012.

The determination findings presented in this report relate to the project as described in the PDD version 1.2.2.

2.2 Follow-up Interviews

On 25/04/2012 Bureau Veritas Certification performed on-site interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of "Service-Invest" LLC and "Elta-Eco" LLC were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
"Service-Invest" LLC	➢ Project History ➢ Project Approach ➢ Project boundary ➢ Implementation Schedule ➢ Organization structure ➢ Authorities and responsibilities ➢ Training of personnel ➢ Quality management procedures and technologies ➢ Records on rehabilitation/implementation of equipment ➢ Metering equipment control ➢ Metering record keeping system, database ➢ Technical documentation ➢ Monitoring plan and procedures ➢ Permits and licenses
CONSULTANT: "Elta-Eco" LLC	➢ Baseline methodology ➢ Monitoring plan ➢ Additionality proofs ➢ Calculation of emission reductions

2.3 Resolution of Clarification and Corrective Action Requests

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

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

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

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

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

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

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

3 PROJECT DESCRIPTION

The "Service-Invest" LLC is the enterprise inside the DTEK Holding for the electricity transportation and supply. The enterprise is the member of the Wholesale Electricity Market. The main consumers of the "Service-Invest" LLC are the Ukrainian mining sector enterprises. The significant parts among them are the coalmines, metal works and machinery plants. The "Metinvest Holding" LLC enterprises cover 47.7% of the "Service-Invest" LLC electricity supply. The electricity supply to the DTEK Holding enterprises covers about 7.3% of the whole electricity supply by the "Service-Invest" LLC.

The Project foresees the implementation of the electricity loses reduction measures at the transmission lines of the "Service-Invest" LLC as well as the electricity transportation and loses registration precision increase measures – the installation of the electricity meters with the higher level of accuracy.

Moreover, the Project foresees the implementation of the Automatic Electricity Registration System for the Company balance compilation and, starting from 2011, for the commercial accounting with the SE "Energorynok".

Thus due to the above-mentioned actions the specific electricity loses at the grid will be lowered. That will lead to the electricity production

reduction at the Ukrainian TPPs by the value of the electricity losses reduction that, in its turn, will lead to the GHG emission reduction.

It should be mentioned, that there are no non-technical loses (as they are described in the GKD 34.09.104-2003) among the electricity loses at the "Service-Invest" LLC Grid. Thus, the electricity loses reduction in the Grid will lead to the equivalent emission reduction.

For these purpose the Project foresees such measures:

1. The replacement of the power transformers, circuit breakers, control panels and other equipment at the electricity substations that will lower loses significantly. For example, in 2006 at the substation Davydovka-Pivnichna-110 the transformer TDTNG-31500/110 (loses coefficient – 5.05) was replaced by the TDTN-40000/110 (loses coefficient – 0.21) transformer.

The reconstruction of the substations leads to the electricity loses decrease, the equipment reliability increase.

2. The Project foresees the replacement of the wires and cables for those with the bigger section and the higher transmission capacity. New self-supporting cables with bigger section have lower specific weight for linear unit. Bigger section of installed wires will reduce thermal losses and let increase carrying capacity of transmitting lines. Replacement of wires will unload transmitting towers and increase reliability of power supply.

3. The other significant aspect of the Project is the installation of the glass and polymer insulators. That is the important part of the electricity transmission process and the reliability of the insulators makes an influence on the value of the electricity transmitted. Use of new flexible polymeric insulators with self-cleaning ability will reduce surface-leakage currents on transmitting lines towers and reduce losses for energy transmitting as result. New glass insulators have more void-free and dense surface so will be polluted less than older ones.

All proposed measures are forwarded on decreasing electric losses in power lines and reducing GHG emissions as a result.

CAR01-CAR05 and CL01, CL02 and their resolutions/conclusions applicable to Project description is listed in the Annex A (Table 2)

4 DETERMINATION CONCLUSIONS

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

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

The Clarification and Corrective Action Requests are stated, where applicable, in the following sections and are further documented in the Determination Protocol in Appendix A. The determination of the Project resulted in 27 Corrective Action Requests and 8 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 has already received Letter of Endorsement #3540/23/7 dated 01/12/2011 issued by State Environmental Investment Agency.
The Bureau Veritas Certification obtained Letter of Endorsement from "Service-Invest LLC" and doesn't doubt in its authenticity.
As for this time any written project approvals of the project from the Parties Involved are available. After receiving Determination Report from the Accredited Independent Entity (AIE) project documentation will be submitted to the Ukrainian Designated Focal Point (DFP) which is State Environment Investment Agency for receiving the Letter of Approval.
The written approvals from the other Parties will be obtained later on.

CAR06, CAR 27 and their resolutions/conclusions applicable to Project approvals is listed in the Annex A (Table 2)

4.2 Authorization of project participants by Parties involved (21)

Next legal entities are listed in the PDD version 1.2.2 dated 25/06/2012 as project participants:

- "Service-Invest" LLC from Ukraine, the Party Involved;
- ING Bank N.V. from the Netherlands, the Party-buyer of ERU.

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

The official authorization of each legal entity listed as a project participant in the PDD by Parties involved will be provided in written project approvals (see section 4.1 of this Report).

4.3 Baseline setting (22-26)

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

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

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

b) Identifying the most plausible alternatives considering relevant sectoral policies and circumstances, such as economic situation in the energetic sector in Ukraine and other key factors that may affect the baseline. The baseline is identified by screening of the alternatives based on the technological and economic considerations for the project developer, as well as on the prevailing technologies and practices in Ukrainian energy industry at the time of the investment decision.
The alternatives has been identified based on national practice and reasonable assumptions with regard to sectoral legislation and reform, economic situation in the country, availability of materials as technologies and logistics

The project developer proposed three alternatives to the project activity's measures are:

Alternative 1. The proposed project activity not undertaken as a JI project. This *Alternative* is eliminated by the situation that in the host country (Ukraine) there are no compensations for the electricity loses reduction in the grid. The losses reduction is taken into account while calculating the losses normative for the next reporting year. Thus, there are no financial benefits from the Project implementation except the ERUs selling.

Alternative 2. The implementation of the part of the Project measures. The *Alternative 2* is unacceptable because the electricity loses in the "Service-Invest" LLC grid are quite low and the partial Project implementation will not give any significant effect and it will be too low for the JI registration. So, the *Alternative 2* is technically possible, but not reasonable and feasible.

Alternative 3. The continuation of the existing situation. The existing situation is the situation of the equipment usage without any major investments in the reliability and repairs. The repairs are being provided on occasion, if some emergency accidents occur. There would not be any schedule for the repairs or major repairs. In this situation the Service-Invest LLC grid would continue it's operation with the constant lowering of the efficiency (loses coefficient increase).

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

Project developer uses values of electricity transmitting emission factors for baseline calculations in accordance with "Carbon dioxide emission factors (for energy consumption according to the methodology "Ukraine - Assessment of new calculation of CEF", approved by TUV SUD 17.08.2007 and the National GHG Inventory Report of Ukraine for 2008 – 2011 years.

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

CR07-CAR09, CL03 and their resolutions/conclusions applicable to Project baseline settings are listed in the Annex A (Table 2)

4.4 Additionality (27-31)

The most resent version of "Tool for the demonstration and assessment of additionality" (Version 05.2.1)" approved by CDM Executive board in accordance with JI specific approach. All explanations, descriptions and analyses was provided in accordance with this tool.

The project developer provides justification of the chosen project approach applicability. Due to the fact, there are no similar approved CDM Methodologies for baseline and monitoring establishment. The Additionality tool applied which is considered as a good practice for additionality justification.

Additionality proofs are provided. Three alternatives to the proposed project scenario were identified in the PDD. Proposed alternatives were proven into compliance with actual Ukraine legislation and regulations of Ukraine energy sector.

The proposed project is not common practice in the Ukraine comparing with project implemented on Regional electricity supply enterprises.

Additionality is demonstrated appropriately way as a result of analysis using to chosen approach.

CAR10-CAR16 and their resolution/conclusion applicable to the project additionality are listed in the Annex A (Table 2)

4.5 Project boundary (32-33)

The project boundaries were identified in a way to cover all GHG emissions associated with the project. With respect to "Service-Invest" LLC organizational structure project boundaries include power

transmitting lines and distribution substations with transformers, insulating, measuring and auxiliary equipment. Coal-burning TPPs, local distribution grids and fossil fuels are not directly included in the project boundaries.

The leakage occur to the "Reconstruction of the Electricity Grid of the "Service-Invest" LLC." Project and the other similar JI projects are currently under development. In case if other projects that are causing effect on energy transmitting at "Service-Invest" LLC will be registered under JI mechanisms, at the stage of monitoring report development the following emission reductions that are generated due to the specific project will be subtracted from the total volume of emission reductions generated by this project in the specific monitoring period.

SF_6 insulated commutation equipment, such as switch breakers, circuit breakers, measuring transformers and switch houses is widely used at "Service-Invest" LLC owned substations. Project developer explains in appropriate way that leakages of SF_6 is negligible. The pressure of SF_6 in commutation devices is monitored by automatic system which is a part of ASCMPC continuously. Also, substations operating personnel monitor SF_6 leakages in manual run. There were no significant leakages of SF_6 during period of project implementation and crediting period according to the "Service-Invest" LLC documentation. Probably the SF6 leakages are under the level that can be detected.

The project boundaries were identified by project developer with account of "Service-Invest" LLC operating facilities expansion.

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

(i) Under the control of the project participants such as distribution substations with transformers, commutation, auxiliary and measuring equipment and transmitting lines (with wires, insulators, supporting towers etc) which is owned to the "Service-Invest" LLC;

(ii) Reasonably attributable to the project such as electricity transmitted and lost in "Service-Invest" LLC grids; and

(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

CAR17, CL04, CL05 and their resolution/conclusion applicable to the project boundaries are listed in the Annex A (Table 2)

4.6 Crediting period (34)

The PDD states the starting date of the project as the date on which the implementation of the project began, and the starting date is 06/06/2003, which is after the beginning of 2000.

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

The PDD states the length of the crediting period in years and months, which is 5 years (60 months), and its starting date as 01/01/2008, which is after the date the first emission reductions or enhancements of net removals are generated by the project.

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

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

CAR18, CL06 and their resolution/conclusion applicable to the project crediting period are listed in the Annex A (Table 2)

4.7 Monitoring plan (35-39)

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

The monitoring plan describes all relevant factors and key characteristics that will be monitored, and the period in which they will be monitored, in particular also all decisive factors for the control and reporting of project performance, such as statistic reporting forms, quality control (QC) and quality assurance (QA) procedures; detailed guidelines regulating the monitoring procedures and responsibilities; the operational and management structure that will be applied in implementing the monitoring plan.

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

The monitoring plan draws on the list of standard variables indicated in appendix B of "Guidance on criteria for baseline setting and monitoring" developed by the JISC, such as emission factor for electricity transmitting, baseline and project emissions, emission reductions.

The monitoring plan explicitly and clearly distinguishes:

(i) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), and that are available already at the stage of determination, such as electricity losses coefficient in baseline scenario

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

(iii) Data and parameters that are monitored throughout the crediting period, such as emission factor for electricity transmitting, values of electricity transmitted through "Service-Invest" grids and lost during transportation.

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

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

The Baseline emission is being calculated as follows:

$$BEy=Qy\times PPER\times EFy \quad (1)$$

where:
BEy – the Baseline Emission in year *y*, tCO2eq.;
Qy – the volume of the electricity supplied to the Grid in year *y* in Project Scenario, MWh;
PPER – the electricity loses coefficient in the Baseline scenario;

EFy – the carbon dioxide emission factor for the production of the electricity, supplied to the Grid in Ukraine in year *y*, tCO2eq./MWh;

$$PPER=Vybl/Qybl \quad (2)$$

where:
PPER **–** the electricity loses coefficient in the Baseline scenario;
Vybl – factual transportation electricity loses in year *y* in the Baseline Scenario, MW*h;
Qybl **–** the volume of the electricity supplied to the Grid in year *y* in the Baseline Scenario, MWh;

The Project emission is being calculated as follows:

$$PEy = Vyp \times EFy \quad (3)$$

where
PEy – the Project Emission in year *y*, tCO2eq.;
Vyp – the volume of the electricity loses in year *y* in the Project scenario, MWh;
EFy – the carbon dioxide emission factor for the electricity transportation through the Ukrainian Electricity Grid in year *y*, tCO2eq./MWh;

The emission reductions achieved during the project period are calculated as a difference between annual baseline emission and annual project emission. It is shown by the formula:

$$ERy = BEy - PEy \quad (4)$$

where:
ERy – emission reductions achieved by the project activity in year *y,* tons of CO2/year;
BEy – baseline CO2 emission in year *y,* tons of CO2/year;
PEy – project CO2 emission in year *y,* tons of CO2/year.

The monitoring plan presents the quality assurance and control procedures for the monitoring process which are mentioned in the section D and Annex 3 of the PDD. This includes, as appropriate, information on calibration and on how records on data and/or method validity and accuracy are kept and made available on request.

The monitoring plan clearly identifies the responsibilities and the authority regarding the monitoring activities. The data required to JI monitoring is routinely collected within the normal operations of "Service-Invest" LLC therefore the JI monitoring is a part of routine monitoring. The data is

complied in shift and day-to-day reports, monthly and year report and state report form 1B-TRE. All records a finally stored in the Power sales Department.

The monitoring plan will be implemented by different specialists of the "Service-Invest" LLC under supervision of power sales department. All main departments and specialists of the enterprise will be involved into the preparation of monitoring report under coordination of the power sales department.

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

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

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

CAR19–CAR25, CL07 and their resolutions/conclusions applicable to Project monitoring plan are listed in the Annex A (Table 2)

4.8 Leakage (40-41)

The PDD appropriately describes an assessment of the potential leakage of the project and appropriately explains absence of leakages in proposed project:

- Modernisation of power transmitting lines and auxiliary equipment doesn't connect with extraction, enrichment, transportation or burning of fossil fuels.
- Leakages of SF6 are excluded from project boundaries for conservativeness justification

CL08 and its resolution/conclusion applicable to Project leakages is listed in the Annex A (Table 2)

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

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

The PDD provides the ex ante estimates of:

(a) Emission from the project (within the project boundary), which are 520596 tonnes of CO2eq for period 01/01/2004-31/12/2007, 786460 tonnes of CO2eq for period 01/01/2008-31/12/2012, 2837377 tonnes of CO2eq for period 01/01/2013-31/12/2023;

(b) Leakage, as applicable, which are 0 tonnes of CO2eq,

(c) Emission from the baseline scenario (within the project boundary) 628 484 tonnes of CO2eq for period 01/01/2004-31/12/2007, 1342311 tonnes of CO2eq for period 01/01/2008-31/12/2012, 4 227 357 tonnes of CO2eq for period 01/01/2013-31/12/2023

(d) Emission reductions adjusted by leakage (based on (a)-(b) above), which are 125887 tonnes of CO2eq for period 01/01/2004-31/12/2007, 555851 tonnes of CO2eq for period 01/01/2008-31/12/2012, 1389978 tonnes of CO2eq for period 01/01/2013-31/12/2023.

The estimates referred to above are given:

(a) On a annually basis;

(b) From 01/01/2004 to 31/12/2023, covering the whole crediting period;

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

(d) For CO2

(e) In tonnes of CO2 equivalent, using global warming potentials defined by decision 2/CP.3 or as subsequently revised in accordance with Article 5 of the Kyoto Protocol;

The formula used for calculating the estimates referred above, which are the same than used for monitoring and described in the section 4.7 of this Report, are consistent throughout the PDD.

For calculating the estimates referred to above, key factors, e.g. electricity tariffs and availability, expected market development, etc, influencing the baseline emissions or removals and the activity level of the project and the emissions or net removals as well as risks associated with the project were taken into account, as appropriate.

Data sources used for calculating the estimates referred to above, such as delivery substation logbooks, department reports, production forecasts are clearly identified, reliable and transparent.

Emission factors, such as emission factor for electricity transmitting in Ukraine grid, was selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice.

The estimation referred to above is based on conservative assumptions and the most plausible scenarios in a transparent manner.

The estimates referred to above are consistent throughout the PDD.

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

CAR26 and its resolution/conclusion applicable to Project estimation of emission reduction is listed in the Annex A (Table 2)

4.10 Environmental impacts (48)

The PDD lists and attaches documentation on the analysis of the environmental impacts of the project, including transboundary impacts, in accordance with procedures as determined by the Host Party.

The PDD provides conclusion and all references to supporting documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party, if the analysis referred to above indicates that the environmental impacts are considered significant by the project participants or the host Party

4.11 Stakeholder consultation (49)

The project has been presented to the Ukraine Government and to the local authorities as a Project Idea Note and later as a Project Design Document. No written project approvals or endorsement has been obtained.
Actual Ukrainian legislation doesn't require stakeholders' consultation for the JI projects. Project owner did not inform local society by newspapers, public hearing or another way which is in compliance with Ukrainian legislation.

4.12 Determination regarding small scale projects (50-57)

"Not applicable"

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

"Not applicable"

4.14 Determination regarding programmes of activities (65-73)

"Not applicable"

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

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

6 DETERMINATION OPINION

Bureau Veritas Certification has performed a determination of the "Reconstruction of the Electricity Grid of the "Service-Invest" LLC." Project in Donetsk and Dnipropetrovs'k Regions, Ukraine. The determination was performed on the basis of UNFCCC criteria and host country criteria and also on the criteria given to provide for consistent project operations, monitoring and reporting.

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

Project participant/s used the latest tool for demonstration of the additionality. In line with this tool, the PDD provides investment analysis and common practice analysis, to determine that the project activity itself is not the baseline scenario.

Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. Given that the project is implemented and maintained as designed, the project is likely to achieve the estimated amount of emission reductions.

The review of the project design documentation version 1.2.2 and the subsequent follow-up interviews have provided Bureau Veritas Certification with sufficient evidence to determine the fulfillment of stated criteria. In our opinion, the project correctly applies and meets the relevant UNFCCC requirements for the JI and the relevant host country criteria.

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

7 REFERENCES

Category 1 Documents:
Documents provided by "Elta-Eco" LLC that relate directly to the GHG components of the project.

/1/ Project Design Document "Reconstruction of the Electricity Grid of the "Service-Invest" LLC." version 1.1 dated 01/04/2012
/2/ Project Design Document "Reconstruction of the Electricity Grid of the "Service-Invest" LLC." version 1.2 dated 13/05/2012
/3/ Project Design Document "Reconstruction of the Electricity Grid of the "Service-Invest" LLC." version 1.2.1 dated 05/06/2012
/4/ Project Design Document "Reconstruction of the Electricity Grid of the "Service-Invest" LLC." version 1.2.2 dated 25/06/2012
/5/ ERUs calculation Excel file "ERU_Calculations_Service-Invest_1.2"
/6/ Financial analysis Excel-file "Financial_Analisys_SI"
/7/ Letter of Endorsement #3540/23/7 dated 01/12/2011 issued by State Environment Investment Agency

Category 2 Documents:
Background documents related to the design and/or methodologies employed in the design or other reference documents.

/1/ Certificate #12SPK 768290 dated 02/03/2012 on air transmitting line work and repair specialist advanced training
/2/ Certificate #12SPK 768286 dated 02/03/2012 on air transmitting line work and repair specialist advanced training
/3/ Certificate #12SPK 826704 dated 23/03/2012 on region energy system auditor advanced training
/4/ Certificate #12SPK 779453 dated 23/03/2012 on relay protection and emergency automatic specialist advanced training
/5/ Certificate #12SPK 826713 dated 23/03/12 on energy system central dispatcher service specialist advanced training
/6/ Certificate #12SPK 779486 dated 23/03/2012 on region energy system auditor advanced training
/7/ Certificate #12SPK 826701 dated 23/03/2012 on region energy system auditor advanced training
/8/ Statements #58, 60 dated 27/01/2012 on equipment repair workshop and substation groups electrical fitters advanced training
/9/ Statements #86 dated 10/02/2012 on equipment repair workshop and substation groups electrical fitters advanced training and #59 on testing and measuring wiremans advanced training
/10/ Statements #111-120 dated 24/02/21012 on substation 35-110 KV servicing wireman advanced training
/11/ Statements #55, 56 dated 27/01/2012 on equipment repair workshop and substation groups electrical fitters advanced training
/12/ Certificate #1623-1626 dated 10/02/2012 on air transmitting line work and

repair specialist advanced training

/13/ Certificates #1804, 1805 dated 24/02/2012 on air transmitting lines departments chiefs advanced trainings

/14/ Certificates #2050 on "Service-Invest" LLC electric laboratory head advanced training, #2051 on insulation and voltage overload service engineer advanced training, dated 23/03/2012

/15/ Certificates of training "Terminal ABB RED500" dated 24/07/2007

/16/ Certificates of training "Grid protection system ABB REL-570" dated 24/07/2007

/17/ Certificate on training "Line protection devices 7SA6x, 7UT6x, 7SJ6x and software DIGSI4.8x operation" dated 25/04/2008

/18/ Certificates of training "Terminal ABB RED500" dated 24/07/2007

/19/ Certificate on training "Line protection devices 7SA6x, 7UT6x, 7SJ6x and software DIGSI4.8x operation" dated 25/04/2008

/20/ Certificates of training "Terminal ABB REL670" dated 24/07/2007

/21/ Certificate #627 of training "automatic system for commercial measuring of power consumption Elster-metronica" dated 26/11/2003

/22/ Certificate #385 on training "complex energy accounting software devices on the basis on data acquisition and transmittion device RTU-300 series. Commissioning and technical maintenance" dated 21/11/2003

/23/ Certificate on training "Line protection devices 7SA6x, 7UT6x, 7SJ6x and software DIGSI4.8x operation" dated 25/04/2008

/24/ Certificates of training "Terminal ABB RED500" dated 24/07/2007

/25/ Replacement schedule on power meter at "Service Invest" LLC substations

/26/ Statement on acceptance of power transformer TDTN-40000/110Y1 prod/#158146, substation 110KV Davydivka-Pivnichna

/27/ Statement on acceptance of power transformer TDTN-40000/110Y1 prod/#159350, substation 110KV Enakievo dated 25.12.2008

/28/ Statement on acceptance of power transformer TDTN-40000/110Y1 prod/#158146, substation 110/35/6 KV Styla dated 30/09/2010

/29/ Statement on acceptance of power transformer TDTN-40000/110Y1 prod/#160182, substation 110/35/6 KV Styla dated 31/12/2010

/30/ Statement on acceptance of power transformer TDTN-40000/110Y1 prod/#158136, substation 110 KV Donetska dated 31/06/2006

/31/ Statement on acceptance of power transformer TDTN-40000/110Y1 prod #157821, substation 110 KV Donetska dated 29/09/2005

/32/ Statement on acceptance of power transformer TDN-40000/110Y1 prod #158146, substation 110KV Shvernyk dated 02/12/2004

/33/ Statement on acceptance of power transformer TRDNS-25000/35Y3 prod #156923, substation 110 KV Enakievo dated 04/02/20102

/34/ Statement on acceptance-transmittance of power transformer TDTN-40000/110Y1 prod #160101 substation 110/35/6 KV Vidrodzhennya dated 31/12/2009

/35/ Statement on acceptance-transmittance of power transformer TDTN-40000/110Y1 prod #160100 substation 110/35/6 KV Vidrodzhennya dated 31/12/2009

/36/ Statement on acceptance-transmittance of power transformer TDNS-16000/35

prod #157104 substation 35/6 KV Rutchenkovo dated 31/12/2003

/37/ Statement on acceptance-transmittance of power transformer TDTN-40000/110/35/6 prod #157821 substation 110/35/6 KV Donetska dated 30/09/2005

/38/ Statement on acceptance-transmittance of power transformer TDNS-16000/35 prod #157225 substation 35/6 KV Port dated 01/12/2004

/39/ Statement on acceptance-transmittance of power transformer TDTN-40000/110 prod #157697 substation 110 KV Illych dated 31/05/2005

/40/ Permit #1410136200-78 dated 24/02/2011 on air pollutant by stationary sources substation 110 KV Donetska

/41/ Permit #1410138 300-26 dated 24/02/2011 on air pollutant by stationary sources substation 110 KV Chulkovka

/42/ Permit #1410136300-61 dated 24/02/2011 on air pollutant by stationary sources substation 35 KV Donetska

/43/ Polymer insulator IKP-120-110-5

/44/ Examples of self-supporting air

/45/ Certificate #02/04-1501 on calibration of power meters Euro-Alpha EA05RAL-P4B-4 #01 128 524 від 26/12/2011

/46/ Certificate #02/04-1500 on calibration of power meters Euro-Alpha EA05RAL-P4B-4 #01 128 724 від 26/12/2011

/47/ Certificate #02/04-1502 on calibration of power meters Euro-Alpha EA05RAL-P4B-4 №01 128 701 dated 26/12/2011

/48/ Certificate #02/04-1505 on calibration of power meters Euro-Alpha EA05RAL-P4B-4 №01 128 701 dated 27/12/2011

/49/ Certificate #02/04-1503 on calibration of power meters Euro-Alpha EA05RAL-P4B-4 №01 128 684 dated 27.12.2011

/50/ Certificate #02/04-1491D on calibration of power meters Euro-Alpha EA05RAL-P4B-4 №01 128 739 dated 23/12/2011

/51/ Certificate #02/04-1478 on calibration of power meters Euro-Alpha EA05RAL-P4B-4 №01 125 400 від 22/12/2011

/52/ Certificate #02/04-1479 on calibration of power meters Euro-Alpha EA05RAL-P4B-4 №01 128 353 від 22/12/2011

/53/ Certificate #02/04-1487 on calibration of power meters Euro-Alpha EA05RAL-P4B-4 №01 128 525 від 23.12.2011

/54/ Certificate #02/04-1489 on power meter Euro-Alpha EA05RAL-P4B-4 #01 128 720 calibration dated 23/12/2011

/55/ Certificate #02/04-1497 on power meter Euro-Alpha EA05RAL-P4B-4 #01 128 528 calibration dated 26/12/2011

/56/ Certificate #02/04-1498 on power meter Euro-Alpha EA05RAL-P4B-4 #01 128 565 calibration dated 26/12/2011

/57/ Certificate #02/04-1499 on power meter Euro-Alpha EA05RAL-P4B-4 #01 128 713 calibration dated 26/12/2011

/58/ Certificate #02/04-70 on power meter Euro-Alpha EA05RAL-P4B-4 #01 128 626 calibration dated 16/01/2012

/59/ Certificate #02/04-1120 on power meter Euro-Alpha EA05RALX-P4B-4 #01 128 554 calibration dated 26/12/2011

/60/ Certificate #02/04-1068 on power meter Euro-Alpha EA05RAL-P4B-4

№01 073 849 calibration dated 22/09/2011

/61/ Certificate #02/04-1017 on power meter Euro-Alpha EA05RAL-P4B-4 #01 128 527 calibration dated 12/09/2011

/62/ Certificate #02/04-561 on power meter Euro-Alpha EA05RAL-P4B-4 #01 088 042 від 19/05/2011

/63/ Certificate #02/04-201 on power meter Euro-Alpha EA05RAL-P4B-4 #01 096 885 від 24/02/2011

/64/ Agreement #13/2143-1221189/2010 dated 21/12/2010 on providing metrological service between Donetsk Science-production centre on standardization and metrology and Service-Invest LLC

/65/ Passport and calibration certificate on power meter CE6805V #1103040

/66/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for December 2004

/67/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for November 2004

/68/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for October 2004

/69/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for September 2004

/70/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for August 2004

/71/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for July 2004

/72/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for June 2004

/73/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for May 2004

/74/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for April 2004

/75/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for March 2004

/76/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for February 2004

/77/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for January 2004

/78/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for December 2003

/79/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for November 2003

/80/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for October 2003

/81/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for September 2003

/82/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for August 2003

/83/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for July 2003

/84/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for June 2003

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/90/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for December 2011

/91/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for November 2011

/92/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for October 2011

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/94/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for August 2011

/95/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for July 2011

/96/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for June 2011

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/100/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for February 2011

/101/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for January 2011

/102/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for December 2010

/103/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for November 2010

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/112/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for February 2010

/113/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for January 2010

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/124/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for February 2009

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/132/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for June 2008

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/144/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for June 2007

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/149/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for January 2007

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/154/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for August 2006

/155/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for July 2006

/156/ Structure of balance and technological losses of electric energy from power

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/160/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for February 2006

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/162/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for December 2005

/163/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for November 2005

/164/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for October 2005

/165/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for September 2005

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/173/ Structure of balance and technological losses of electric energy from power transmitting in "Service-Invest" LLC grids with accounting of grid expansion for January 2005

/174/ Agreement #10086000 dated 30/04/2004 on electric energy supply between Service-Invest LLC and "Donetsk metal-rolling plant" JSC

/175/ Bill #32/1008600 "Donetsk metal-rolling plant" JSC on electricity supply on March 2012

/176/ Bill #32/1008600 "Donetsk metal-rolling plant" JSC on electricity supply on April 2012

/177/ Transformer TDN-16000 (TR #1) of substation Pivnichna-110 losses calculation for March 2012

/178/ Transformer TDN-16000 (TR #2) of substation Pivnichna-110 losses calculation for March 2012

/179/ Transformer TSN-100 (TSN #1) of substation Pivnichna-110 losses calculation for March 2012

/180/ Statement on power meters readings for JSC "Donetsk metal-rolling plant" December 2011

/181/ Bill #32/10026017 for electric energy consumed by Stock Company Production Association "KONTI" March 2012

/182/ Advanced bill #32/10026017/Av "Konti" JSC on electricity consume on May 2012

/183/ Planned bill #32/10026017/p "Konti" JSC on electricity consumed on March 2012

/184/ Agreement # 1 0026 017 dated 03/10/2008 on electric energy supply between Service-Invest LLC and "KONTI" JSC

/185/ List of consumers power metering equipment and JSC "Konti" electricity consumed calculation scheme

/186/ List of consumers power metering equipment and JSC "Donetsk metal-rolling plant" electricity consumed calculation scheme

/187/ List of consumers power metering equipment and JSC "Nord" electricity consumed calculation scheme

/188/ Agreement # 1 0020 000 dated 01/06/2004 on electric energy supply between Service-Invest LLC and "Nord" JSC

/189/ List of consumers power metering equipment and JSC "Nord" electricity consumed calculation scheme

/190/ Planned bill #32/1 002 000/1p "Nord" JSC on electricity consumed on April 2012

/191/ Advanced bill #32/1 002 000 "Nord" JSC on electricity consumed on March 2012

/192/ Bill # 32/1 002 000 for reactive power flow on "Nord" JSC March 2012

/193/ Pay calculation of reactive power flow on "Nord" JSC March 2012

/194/ Description of energy consumption by metering points on bill #32/1 002 000 March 2012

/195/ Annex to Agreement #32/1 002 000 Acceptance-transmittance act on

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/196/ Annex to Agreement #32/1 002 000 Acceptance-transmittance act on measuring unit "Nord" JSC March 2012
/197/ "Service-Invest" LLC commercial power meter planned calibration and replacement due to state calibration interval finishing schedule on 2012 year
/198/ Statement #845 dated 11/10/2006 on power meters replacement on substation Pivnichna 110 KV
/199/ Statement #832 dated 06/10/2006 on power meters replacement on substation Elenivka 35 KV
/200/ Statement #831 dated 06/10/2006 on power meters replacement on substation Elenivka 35 KV
/201/ Statement #812 dated 26/09/2006 on power meters replacement
/202/ Statement #654 dated 17/10/2005 on power meters replacement on substation Iverska 110/35/6 KV
/203/ Statement #47/665 dated 20/10/2005 on power meters replacement on substation Vuhlehirska TES
/204/ Transformer TDTN-40000/110U1 substation Donetska
/205/ Out of service transformer, substation Donetska
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/209/ Siemens insulation switch with sulfur hexafluoride insulation
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/212/ Power meter Elster-Metronica EA05RAL-P4B-4 #01 128 701 connection ShOMV-110
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/215/ Power meter Elster-Metronica EA05RAL-P4B-4 #01 088 037 connection T-2 110 KV
/216/ Power meter Elster-Metronica EA05RAL-P4B-4 #01 073 871connection T-1 110 KV
/217/ 110 KV accounting power meter board #24
/218/ Power meter Elster-Metronica EA05RAL-P4B-4 #01 043 300 connection Chaykino-1 110 KV
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/220/ Power meter Elster-Metronica EA05RAL-P4B-4 #01 073 854 connection Chaykino-3 110 KV
/221/ Power meter Elster-Metronica EA05RAL-P4B-4 #01 128 703
/222/ Power meter Elster-Metronica EA05RAL-P4B-4 #01 146 209
/223/ Power meter Elster-Metronica EA05RAL-P4B-4 #01 146 244
/224/ 110 KV accounting power meter board #25

/225/ Power meter Elster-Metronica EA05RALX-P4B-4 #01 073 849 connection Uholschik 110 KV
/226/ Power meter EA05RALX-P4B-4 #01 076 243 connection Kalmiuska-2 110 KV
/227/ Power meter Elster-Metronica EA05RALX-P4B-4 #01 082 978 connection Kalmiuska-1 110 KV
/228/ Power meter Elster-Metronica EA05RAL-P4B-4 #01 096 889
/229/ Power meter Elster-Metronica EA05RAL-P4B-4 #01 128 734
/230/ Power meter Elster-Metronica EA05RAL-P4B-4 #01 125 311
/231/ 35 KV accounting power meter board #27
/232/ Power meter Elster-Metronica EA05RALX-P4B-4 #01 057 295 connection Transformer-1
/233/ Power meter Elster-Metronica EA05RALX-P4B-4 #01 043 303 connection Transformer-2
/234/ Power meter Elster-Metronica EA05RALX-P4B-4 #01 083 012 connection Transformer-3
/235/ Power meter Elster-Metronica EA05RALX-P4B-4 #01 043 304 connection Chulkovka-2
/236/ Power meter Elster-Metronica EA05RALX-P4B-4 #01 076 237 connection GKNS
/237/ Power meter Elster-Metronica EA05RALX-P4B-4 #01 073 884 connection Donetska-2 35KV
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/239/ Power meter Elster-Metronica EA05RALX-P4B-4 #01 082 995 connection KONTI 35KV
/240/ Power meter Лічильник Elster-Metronica EA05RALX-P4B-4 #01 076 226 connection Vidrodzhennya 35 KV
/241/ 6 KV accounting power meter board #29
/242/ Power meter Elster-Metronica EA05RALX-P4B-4 #01 136 263 connection Transformer-1 6 KV
/243/ Power meter Elster-Metronica EA05RALX-P4B-4 #01 136 074 connection Transformer-2 6 KV
/244/ Power meter Elster-Metronica EA05RALX-P4B-4 #01 136 154 connection Transformer-3 6 KV
/245/ Power meter Elster-Metronica EA05RALX-P4B-4 #01 146 155 connection EMK 6 KV
/246/ Power meter Elster-Metronica EA05RAL-P4B-4 #01 125 306 connection Orbita-2 6 KV
/247/ Power meter Elster-Metronica EA05RAL-P4B-4 #01 125 368 connection Orbita-1 6 KV
/248/ Power meter Elster-Metronica EA05RALX-P4B-4 #01 128 565 connection RP-22 #2 6 KV
/249/ Power meter Elster-Metronica EA05RALX-P4B-4 #01 096 807 connection RP-22 #1 6 KV
/250/ Power meter Elster-Metronica EA05RALX-P4B-4 #01 125 353 connection TP-2008 6 KV
/251/ Power meter Elster-Metronica EA05RALX-P4B-4 #01 125 400 connection RP-

11 6 KV

/252/ Power meter EA05RALX-P4B-4 # 01 096 857 connection RP-22 #2 6 KV

/253/ Power meter Elster-Metronica EA05RALX-P4B-4 #01 128 629 connection RP-22 #3 6 KV

/254/ Power meter Elster-Metronica EA05RALX-P4B-4 #01 128 645 connection TSN #3 6 KV

/255/ Power meter Elster-Metronica EA05RALX-P4B-4 #01 096 803 connection ZIM 6 KV

/256/ Power meter Elster-Metronica EA05RALX-P4B-4 #01 096 907 connection TP-5770 #1 6 KV

/257/ Power meter Elster-Metronica EA05RALX-P4B-4 #01 146 139 connection LKU 6 KV

/258/ Sulfur hexafluoride leakage detector

/259/ Power meter Elster-Metronica EA05RALX-P4B-4 № 01 128 548 connection N. Mushketovo #1 6 KV

/260/ Power meter Elster-Metronica EA05RALX-P4B-4 № 01 128 546 connection N. Mushketovo #2 6 KV

/261/ Power meter Elster-Metronica EA05RAL-P4B-4 № 01 125 357 connection connection TTU-24 #2 6 KV

/262/ Power meter Elster-Metronica EA05RAL-P4B-4 № 01 125 349 connection TTU-24 #1 6 KV

/263/ Power meter Elster-Metronica EA05RAL-P4B-4 № 01 125 373 connection STP-18 #1 6 KV

/264/ Power meter Elster-Metronica EA05RAL-P4B-4 № 01 096 869 connection STP-18 #2 6 KV

/265/ Transmitting line tower with old porcelain insulators

/266/ New insulators

/267/ Transformer #3 substation Vidrodzhennya

/268/ Transformer #1 substation Vidrodzhennya

/269/ Transformer #2 substation Vidrodzhennya

/270/ Disconnecting switch 6 KV on new polymeric supporting insulators

/271/ Voltage transformers

/272/ SF6 breaker 110 KV transmitting line Smolyanka-DMZ

/273/ Power meter Elster-Metronica EA05RALX-P4B-4 #01 096 769

/274/ Power meter Elster-Metronica EA05RAL-P4B-4 #01 083 010 connection Khimzavod #4 6 KV

/275/ Power meter Elster-Metronica EA05RAL-P4B-4 #01 082 980 connection Khimzavod #2 6 KV

/276/ Power meter Elster-Metronica EA05RAL-P4B-4 #01 125 525

/277/ Power meter Elster-Metronica EA05RAL-P4B-4 #01 128 711 connection Mahma #2 6 KV

/278/ Power meter Elster-Metronica EA05RAL-P4B-4 #01 136 153 connection Transformator#3 6 KV

/279/ Power meter Elster-Metronica EA05RAL-P4B-4 #01 128 720

/280/ Power meter EA05RAL-P4B-4 #01 128 713

/281/ Power meter EA05RAL-P4B-4 #01 128 582 connection RP #1 6 KV

/282/ Power meter EA05RAL-P4B-4 #01 096 767

/283/ Power meter EA05RAL-P4B-4 #01 128 524
/284/ Power meter Elster-Metronica EA05RAL-P4B-4 #01 088 033 connection Khimzavod #3 6 KV
/285/ Power meter EA05RAL-P4B-4 #01 128 724 connection RP #2 6 KV
/286/ Power meter Elster-Metronica EA05RAL-P4B-4 #01 088 038connection Khimzavod #5-6 6 KV
/287/ Power meter Elster-Metronica EA05RAL-P4B-4 #01 125 335 connection TP5421 bus#4 6 KV
/288/ Power meter Elster-Metronica EA05RALX-P4B-4 #01 096 773 connection TP#3 6 KV
/289/ Power meter connection EA05RAL-P4B-4 #01 125 356 Mahma #1 6 KV
/290/ Power meter Elster-Metronica EA05RALX-P4B-4 #01 088 042 connection Khimzavod #6 6 KV
/291/ 35 KV accounting power meter board #2
/292/ Power meter Elster-Metronica EA05RALX-P4B-4 #01 088 03 connection Shakhta-29 35 KV
/293/ Power meter Elster-Metronica EA05RALX-P4B-4 #01 076 227 connection Shakhta-17 35 KV
/294/ Power meter Elster-Metronica EA05RALX-P4B-4 #01 076 227 connection Smolyanka
/295/ Power meter Elster-Metronica EA05RALX-P4B-4 #01 076 238 connection Transformer-3 35 KV
/296/ Power meter Elster-Metronica EA05RALX-P4B-4 #01 076 216 connection Transformer-2 35 KV
/297/ Power meter Elster-Metronica EA05RALX-P4B-4 #01 136 2… connection Donetska 35 KV
/298/ Power meter Elster-Metronica EA05RALX-P4B-4 #01 136 270 connection KONTI 35 KV
/299/ Power meter Elster-Metronica EA05RALX-P4B-4 #01 088 036 connection Transformer-1 35 KV
/300/ Power meter Elster-Metronica EA05RALX-P4B-4 #01 096 910 connection Transformer-2 6 KV
/301/ Power meter Elster-Metronica EA05RALX-P4B-4 #01 096 841 connection Transformer-1 6 KV
/302/ Power meter Elster-Metronica EA05RALX-P4B-4 #01 096 861 connection Smolyanka-Metalurhichna 110 KV
/303/ Power meter Elster-Metronica A1805RALQ-P4GB-DW-4 #01 186 368 connection Smolyanka-DMZ 110 KV
/304/ 6 KV input buses control box #7
/305/ Power meter Elster-Metronica A1805RALQ-P4GB-DW-4 #01 230 866
/306/ Power meter Elster-Metronica A1805RALQ-P4GB-DW-4 #01 230 868
/307/ Power meter Elster-Metronica A1805RALQ-P4GB-DW-4 #01 230 869
/308/ Power meter Elster-Metronica A1805RALQ-P4GB-DW-4 #01 230 870
/309/ Power meter Elster-Metronica A1805RALQ-P4GB-DW-4 #01 223 423 Rezerv
/310/ Power meter Elster-Metronica A1805RALQ-P4GB-DW-4 #01 223 443 Rezerv
/311/ Power meter Elster-Metronica A1805RALQ-P4GB-DW-4 #05 016 184 connection TSN-2

/312/ Power meter Elster-Metronica A1805RALQ-P4GB-DW-4 #01 223 424 Rezerv
/313/ Power meter Elster-Metronica A1805RALQ-P4GB-DW-4 #01 223 415 Rezerv
/314/ Power meter Elster-Metronica A1805RALQ-P4GB-DW-4 #01 223 426 Rezerv
/315/ Power meter Elster-Metronica A1805RALQ-P4GB-DW-4 #01 223 419 Rezerv
/316/ Power meter Elster-Metronica A1805RALQ-P4GB-DW-4 #01 223 434 Rezerv
/317/ Power meter Elster-Metronica A1805RALQ-P4GB-DW-4 #01 223 440 Rezerv
/318/ Power meter Elster-Metronica A1805RALQ-P4GB-DW-4 #05 016 185 connection TSN-1
/319/ Power meter Elster-Metronica A1805RALQ-P4GB-DW-4 #01 223 432 Rezerv
/320/ Power meter Elster-Metronica A1805RALQ-P4GB-DW-4 #01 223 433 Rezerv
/321/ Power meter Elster-Metronica A1805RALQ-P4GB-DW-4 #01 223 442 Rezerv
/322/ SF6 switch, substation Aeroport
/323/ SF6 insulated switch house 110/35/6 KV, substation Airport
/324/ SF6 leakage detectors
/325/ SF6 insulated switch house 110/35/6 KV control box, line Makiivka-Poshtoviy 110 KV
/326/ Commutation accounting meters on SF6 insulated switchhouse 110/35/6 KV
/327/ 110 KV bus input in SF6 insulation
/328/ 6 KV buses
/329/ Oil insulated transformer 110|6 KV, substation Airport

Persons interviewed:

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

/1/ Iryna Protopova – acting general director

/2/ Natalya Ursalenko – head of Licensees Relations and Commercial Operations department

/3/ Natalya Tsyhankova – Head of Electric Energy Sailing and realization department

/4/ Olga Koroleva – head of Environmental Safety department

/5/ Maksim Rohovoy – representative of "Elta-Eco" LLc

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APPENDIX A: DETERMINATION PROTOCOL

DETERMINATION PROTOCOL

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

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
General description of the project				
Title of the project				
-	Is the title of the project presented?	The title of project is **"**Reconstruction of the Electricity Grid of the "Service-Invest" LLC.**"**	OK	OK
-	Is the sectoral scope to which the project pertains presented?	The sectoral scope is 2 Energy distribution	OK	OK
-	Is the current version number of the document presented?	The current version number is 1.1	OK	OK
-	Is the date when the document was completed presented?	The date when PDD version 1.1 was completed is 3/01/2012	OK	OK
Description of the project				
-	Is the purpose of the project included with a concise, summarizing explanation (max. 1-2 pages) of the: a) Situation existing prior to the starting date of the project; b) Baseline scenario; and c) Project scenario (expected outcome, including a technical description)?	The *project scenario* foresees implementation the electricity loses reduction measures at the transmission lines of the "Service-Invest" LLC. The electricity loses reduction measures at the transmission lines include the replacement of the power transformers with the installation of the more efficient ones (with the less loses coefficient), the replacement of the depreciated	CAR01	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		and outmoded parts of the transmission lines to increase their capacity and reduce the transportation electricity loses *CAR01* Please clearly indicate in the section A.2 situation existing before the project implementation and baseline scenario		
-	Is the history of the project (incl. its JI component) briefly summarized?	*CAR02* Please include in the section A.2 short history of the Project including its JI component	CAR02	OK
Project participants				
-	Are project participants and Party(ies) involved in the project listed?	The project participants (Servis Invest Llc, Elta-Eco LLC, Carbon Emission Partnership) are listed in the section A.3	OK	OK
-	Is the data of the project participants presented in tabular format?	The data of the project participants is presented in a tabular format	OK	OK
-	Is contact information provided in Annex 1 of the PDD?	The contact information of project participant and project developer is provided in Annex 1 of the PDD	OK	OK
-	Is it indicated, if it is the case, if the Party involved is a host Party?	The Host Party (Ukraine) is not indicated as a Party involved	OK	OK
Technical description of the project				
Location of the project				
-	Host Party(ies)	Ukraine	OK	OK
-	Region/State/Province etc.	Donetsk and Dnipropetrovsk Region	OK	OK
-	City/Town/Community etc.	The proposed project is implemented on whole	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		territory of Dnipropetrovsk and Donetsk Region		
-	Detail of the physical location, including information allowing the unique identification of the project. (This section should not exceed one page)	*CAR03* Please correct section A.4.1.4 that it not exceed one page	CAR03	OK
Technologies to be employed, or measures, operations or actions to be implemented by the project				
-	Are the technology(ies) to be employed, or measures, operations or actions to be implemented by the project, including all relevant technical data and the implementation schedule described?	The measures implemented by the project with relevant technical data are summarized in next follows - replacement of power transformers for those with lower loses - replacement of wires and cables for those with bigger capacity - installation of glass and polymer isolators - replacement of commutation and control equipment on substations which increase reliability of power supply *CAR04* Please provide project implementation schedule *CL01* Please clarify how new self-supported wires and insulating equipment installation will result to electricity losses reduction *CL02* Please indicate in the PDD if proposed project activity is not common practice in Ukraine	CAR04 CL01 CL02	OK OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		electricity transmitting enterprises.		
Brief explanation of how the anthropogenic emissions of greenhouse gases by sources are to be reduced by the proposed JI project, including why the emission reductions would not occur in the absence of the proposed project, taking into account national and/or sectoral policies and circumstances				
-	Is it stated how anthropogenic GHG emission reductions are to be achieved? (This section should not exceed one page)	The main goal of the project is reduction of electric losses in power transmitting lines, that will reduce GHG emissions from fuel combustion during power production on heat power plants	OK	OK
-	Is it provided the estimation of emission reductions over the crediting period?	The estimation of emission reductions over the crediting period is provided. Total estimates for period 2005-2207 is 104702 tonnes of CO2 equivalent and for period 2008-2012 534867 tonnes of CO2 equivalent *CAR05* Please correct calculation in "Example of the emission reduction calculation" for 2007 and 2009 years	CAR05	OK
-	Is it provided the estimated annual reduction for the chosen credit period in tCO2e?	The estimated annual reduction for the period 2005-2007 is 34 901 tonnes of CO2 equivalent and for 208-2012 106 973 tonnes of CO2 equivalent	OK	OK
-	Are the data from questions above presented in tabular format?	The data from questions above are presented in tabular format	OK	OK
Estimated amount of emission reductions over the crediting period				
-	Is the length of the crediting period Indicated?	The length of crediting period is 5 years (60 months)	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
-	Are estimates of total as well as annual and average annual emission reductions in tonnes of CO2 equivalent provided?	Estimates of total, annual and average annual emission reductions are provided in tonnes of CO2 equivalent	OK	OK
Project approvals by Parties				
19	Have the DFPs of all Parties listed as "Parties involved" in the PDD provided written project approvals?	The project has obtained Letter of Endorsement #3540/23/7 from State Environment Investment Agency of Ukraine 01/12/2011. *CAR06* Please add information on Project Endorsement to the PDD *CAR27* Please provide writtem project Approvals from both Parties	CAR06 CAR27	OK pending
19	Does the PDD identify at least the host Party as a "Party involved"?	The Host Party (Ukraine) is indicated as a Party involved	pending	pending
19	Has the DFP of the host Party issued a written project approval?	See section 19 of this protocol	pending	pending
20	Are all the written project approvals by Parties involved unconditional?	This issue will be clarified after the determination process finish and obtainment of written approvals from parties involved	pending	pending
Authorization of project participants by Parties involved				

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
21	Is each of the legal entities listed as project participants in the PDD authorized by a Party involved, which is also listed in the PDD, through: − A written project approval by a Party involved, explicitly indicating the name of the legal entity? or − Any other form of project participant authorization in writing, explicitly indicating the name of the legal entity?	After finishing of project determination report, the PDD with supporting documents and Determination Report will be presented to State Environmental Agency of Ukraine for receiving the Letter of Approval that will authorized project participants. Also, see section 19 and section 20 of this protocol above.	OK	OK
Baseline setting				
22	Does the PDD explicitly indicate which of the following approaches is used for identifying the baseline? − JI specific approach − Approved CDM methodology approach	The PDD explicitly indicates that JI specific approach is used for baseline identifying	OK	OK
JI specific approach only				
23	Does the PDD provide a detailed theoretical description in a complete and transparent manner?	The PDD provides a detailed theoretical description of proposed baseline in a complete and transparent manner	OK	OK
23	Does the PDD provide justification that	*CAR07*	CAR07	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	the baseline is established: (a) By listing and describing plausible future scenarios on the basis of conservative assumptions and selecting the most plausible one? (b) Taking into account relevant national and/or sectoral policies and circumstance? − Are key factors that affect a baseline taken into account? (c) In a transparent manner with regard to the choice of approaches, assumptions, methodologies, parameters, date sources and key factors? (d) Taking into account of uncertainties and using conservative assumptions? (e) In such a way that ERUs cannot be earned for decreases in activity levels outside the project or due to force majeure? (f) By drawing on the list of standard variables contained in appendix B to "Guidance on criteria for baseline setting and monitoring", as appropriate?	Baseline settings in the PDD version 1.1 are established on 1 year basis (2003 year). Decision 10/CMP.1 Implementation of Article 6 of the Kyoto Protocol indicates, that in case of relevant JI methodology absence project developer may use approved CDM methodologies and their elements and combinations. Similar CDM methodologies AM0067, AM0097 indicates, that baseline must be chosen on five year data basis. For another thing, according 1B-TRE forms value of transmitting by Service-Invest LLC electric energy is much different year-by-year. So, please establish baseline on three year basis for conservativeness guarantee and more clear and transparent baseline presentation. *CAR08* Please provide calculations of emission reduction in accordance with Service-Invest LLC forms 1-B TRE for 2007-2011 years. Also please check values rounding in Excel-files. *CAR09* Baseline data definition indicates that carbon emission factor for electricity transmitting is available at the stage of determination and not monitored through the crediting period. Usual practice of JI activity in Ukraine is changing value of carbon emission factor each year. Please	CAR08 CAR09 CL03	OK OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		indicate that EF for electricity transmitting for 2012 year will be monitored during the crediting period *CL03* Please clarify next follows - Negative values of actual energy losses in August 2011 and May 2008. - Calculations that included actual losses for substation own needs.		
24	If selected elements or combinations of approved CDM methodologies or methodological tools for baseline setting are used, are the selected elements or combinations together with the elements supplementary developed by the project participants in line with 23 above?	There are no used selected elements of combinations of approved CDM methodologies or methodological tools for baseline setting.	OK	OK
25	If a multi-project emission factor is used, does the PDD provide appropriate justification?	The PDD provides justification for chosen emission factor for electricity transported throw Ukraine national grid. The data for 2005-2007 years was taken from "Ukraine - Assessment of new calculation of CEF", approved by TUV SUD 17.08.2007. The data for 2008-2011 years was taken from relevant Orders of National Environment Investment Agency	OK	OK
Approved CDM methodology approach only_Paragraphs 26(a) – 26(d)_Not applicable				

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
Additionality				
JI specific approach only				
28	Does the PDD indicate which of the following approaches for demonstrating additionality is used? (a) Provision of traceable and transparent information showing the baseline was identified on the basis of conservative assumptions, that the project scenario is not part of the identified baseline scenario and that the project will lead to emission reductions or enhancements of removals; (b) Provision of traceable and transparent information that an AIE has already positively determined that a comparable project (to be) implemented under comparable circumstances has additionality; (c) Application of the most recent version of the "Tool for the demonstration and assessment of additionality. (allowing for a two-month grace period) or any other method for proving additionality approved by the	*CAR10* Approach selected for determination of appropriate analysis method is correct. Benchmark analysis is the proper method of analysis for the present project. The developer calculates the project NPV using discount rate which is based on average bank interest rate in Ukraine. Taking into account the fact that calculations were made in UAH the developer shall use the average loan rates in national currency as of 2005 (the last full year preceding project decision date). Unfortunately the relevant reference to the source of the interest rate is missing in sub step 2b. Please add the reference. *CAR11* Please correct the wording of the sub-step 2b as following: "The benchmark for the present project is the NPV calculated using discount rate based on average lending rates in Ukraine in national currency. The discount rate is 15% (add the reference). The project owner would not consider the investment if the project is generating cash flow with NPV below 0." *CAR12*	CAR10 CAR11 CAR12 CAR13 CAR14 CAR15 CAR16	OK OK OK OK OK OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	CDM Executive Board".	Please note that in case if the real historic (not forecasted) values for investment expenses are applied they shall not be adjusted for inflation. *CAR13* The developer uses the period of 17 years for financial analysis of the project which is in lines with the Guidance recommending the period of 10-20 years. At the same time Guidance article 4 requires the fair value of the assets at the end of assessment period to be included in the cash flow for the final year. In our case the liquidation value of the assets for 2020 is estimated but not included in the final cash flow. Please add the reasonable market value (for example book value) of the assets to the cash flow for the final year. Please note that liquidating value shall not account for operational costs. *CAR14* Please provide the break-down of the operational expenses related to the project. *CAR15* The revenues from the projects are calculated basing on the tariff for transportation of the natural gas and amount of natural gas transported. Taking into account the fact that Chornomornaftogaz is the gas/oil exploration company, reduction of gas losses in the pipelines leads to the increase of		

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		sales of the own natural gas, thereby economic effect from the project activity shall be properly estimated multiplying amount of the gas saved (losses reduced) in natural terms by selling price of the gas to the client of the company. *CAR16* The values in EUR and UAH are intermingled in the financial model. For example when calculating cash flow, revenues in UAH are added to investment and operational expenses in EUR. Please correct.		
29 (a)	Does the PDD provide a justification of the applicability of the approach with a clear and transparent description?			
29 (b)	Are additionality proofs provided?	The additionality proofs are provided	OK	OK
29 (c)	Is the additionality demonstrated appropriately as a result?	See section 28 of this protocol	OK	OK
30	If the approach 28 (c) is chosen, are all explanations, descriptions and analyses made in accordance with the selected tool or method?	All explanations, descriptions and analyses are made in accordance with the selected tool	OK	OK
Approved CDM methodology approach only_ Paragraphs 31(a) – 31(e)_Not applicable				
Project boundary (applicable except for JI LULUCF projects				
JI specific approach only				
32 (a)	Does the project boundary defined in the PDD encompass all anthropogenic	The project boundaries defined in the PDD encompass all sources of GHG emissions. The	CAR17	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	emissions by sources of GHGs that are: (i) Under the control of the project participants? (ii) Reasonably attributable to the project? (iii) Significant?	main sources of GHG emissions are: - Power transmitting lines - Transformers and commutation equipment at power substations. *CAR17* In case of project energy saving measures implementation on new received equipment project boundaries will be different from indicated in the determined PDD. Please remove list of equipment pertained to Servise-Invest LLc.		
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?	The project boundary is defined on the basis of a case-by-case assessment with regard to the criteria referred to in 32(a) above *CL04* Please clarify name of the GHG sources on Table 8	CL04	OK
32 (c)	Are the delineation of the project boundary and the gases and sources included appropriately described and justified in the PDD by using a figure or flow chart as appropriate?	The delineation of the project boundaries are appropriately described in the PDD with using a flow chart.	OK	OK
32 (d)	Are all gases and sources included explicitly stated, and the exclusions of any sources related to the baseline or the project are appropriately justified?	*CL05* During the site-visit was detected that high-voltage transformers and commutation equipment with sulphur hexafluoride insulation are in wide use on Service-Invest LLC substations. Please add in the	CL05	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		section B.3 explanation of SF6 exclusion from the project boundaries		
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?	*CAR18* The PDD indicates that the starting date of the project is 28/12/2006. Please provide reference on relevant documents and explain why AAUs was obtained in 2003-2006 years	CAR18	OK
34 (a)	Is the starting date after the beginning of 2000?	Yes, the starting date is after 2000 year	OK	OK
34 (b)	Does the PDD state the expected operational lifetime of the project in years and months?	The expected operational lifetime of the project equipment stated in the PDD is 20 years or 240 months	OK	OK
34 (c)	Does the PDD state the length of the crediting period in years and months?	The PDD indicates length of crediting period in 5 years (60 months)	OK	OK
34 (c)	Is the starting date of the crediting period on or after the date of the first emission reductions or enhancements of net removals generated by the project?	The starting date of the crediting period is 01/01/2008 – the date when the first ERUs were generated by the project. *CL06* The baseline was established based on data for 2003 year, but account of Emission reduction was begun for 01/01/2005. Please explain exclusion of data for 2004 year from calculations	CL06	OK
34 (d)	Does the PDD state that the crediting period for issuance of ERUs starts only	The PDD states that the crediting period starts 01/01/2008 after the beginning of 2008 and does	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	after the beginning of 2008 and does not extend beyond the operational lifetime of the project?	not extends beyond the operational lifetime of equipment		
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 estimation of emission reduction due to the JI project is provided for the period 2005-2024. In the PDD the values of emission reductions during the period 2008-2012 are presented in table 4. The values of emission reductions for the period 2012-2024 are presented separately in table 5 of the PDD.	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 PDD explicitly indicates that JI specific approach was used for establishing the monitoring plan	OK	OK
JI specific approach only				
36 (a)	Does the monitoring plan describe: − All relevant factors and key characteristics that will be monitored? − The period in which they will be monitored? − All decisive factors for the control and reporting of project performance?	The Monitoring Plan describes factors and characteristics that will be monitored, such as value of electricity losses in Service-Invest grids, value of input electricity, carbon emission factor (see section D.2 of the PDD)	OK	OK
36 (b)	Does the monitoring plan specify the	There is no constants and indicators used by	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	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?	project developer regarding JI project		
36 (b)	If default values are used: − Are accuracy and reasonableness carefully balanced in their selection? − Do the default values originate from recognized sources? − Are the default values supported by statistical analyses providing reasonable confidence levels? − Are the default values presented in a transparent manner?	The monitoring plan indicates that carbon emission factors for electricity transmission used as default values. The source of this value is clarified in table D.1.1.1 (reference to the section B.1), namely, Assessment of new calculation of CEF by TÜV SÜD Industrie Service GmbH for Ukraine and Orders ##43,62,63,75 of SEIA	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?	Emission factor for electricity transmitting is assessed TÜV SÜD Industrie Service GmbH for JI projects in Ukraine for period 2005-2007 years and Orders of SEIA for period 2008-2012	OK	OK
36 (b) (ii)	For other values, − Does the monitoring plan clearly indicate the precise references from which these values are taken? − Is the conservativeness of the values provided justified?	The monitoring plan clearly indicates the sources of which the required data are calculated. The data on factual energy losses and electricity input to the Service-Invest grid are taken from standard report form 1B-TRE	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
36 (b) (iii)	For all data sources, does the monitoring plan specify the procedures to be followed if expected data are unavailable?	*CAR19* Please specify the procedures to be followed if expected data are unavailable	CAR19	OK
36 (b) (iv)	Are International System Unit (SI units) used?	The international System unit are used	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?	The monitoring plan doesn't note any parameters that are required for baseline calculations but obtained through monitoring	OK	OK
36 (b) (v)	Is the use of parameters, coefficients, variables, etc. consistent between the baseline and monitoring plan?	*CAR20* Please correct designation of value of electricity losses in formulae (3) section D.1.1.2	CAR20	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"?	*CAR21* Please provide designation of carbon emission factor to electricity transmitting in accordance with appendix B of "Guidance on criteria for baseline setting and monitoring" version 03	CAR21	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	The monitoring plan explicitly and clearly distinguishes: (i) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), and that are available already at the stage of determination?	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	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?	(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		
36 (e)	Does the monitoring plan describe the methods employed for data monitoring (including its frequency) and recording?	The monitoring plan describes the methods employed for data monitoring and recording including its frequency	OK	OK
36 (f)	Does the monitoring plan elaborate all algorithms and formulae used for the estimation/calculation of baseline emissions/removals and project emissions/removals or direct monitoring of emission reductions from the project, leakage, as appropriate?	Monitoring plan elaborates the formulae used for calculation and estimation of baseline emissions and project emission due to the JI project implementation.	OK	OK
36 (f) (i)	Is the underlying rationale for the algorithms/formulae explained?	The underlying rationale for the formulae are explained	OK	OK
36 (f) (ii)	Are consistent variables, equation formats, subscripts etc. used?	Variables, equation formats subscripts are used in consistent way	OK	OK
36 (f) (iii)	Are all equations numbered?	All equations are numbered	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
36 (f) (iv)	Are all variables, with units indicated defined?	All variables with units indicated are defined	OK	OK
36 (f) (v)	Is the conservativeness of the algorithms/procedures justified?	The conservativeness of the algorithms are justified	OK	OK
36 (f) (v)	To the extent possible, are methods to quantitatively account for uncertainty in key parameters included?	*CL07* Please clarify uncertainty level in key parameters in table D.2 "Quality control and quality assurance procedures undertaken for data monitored".	CL07	OK
36 (f) (vi)	Is consistency between the elaboration of the baseline scenario and the procedure for calculating the emissions or net removals of the baseline ensured?	There is consistency between the elaboration of the baseline scenario and the procedure for calculating the emissions of the baseline scenario.	OK	OK
36 (f) (vii)	Are any parts of the algorithms or formulae that are not self-evident explained?	The all part of used formulae are explained	OK	OK
36 (f) (vii)	Is it justified that the procedure is consistent with standard technical procedures in the relevant sector?	The consistency of the proposed procedures with the standard technical procedures in Ukraine Energy transportation sector is justified appropriately	OK	OK
36 (f) (vii)	Are references provided as necessary?	*CAR22* Please provide correct reference to The Resolution of the Cabinet of Ministers of Ukraine "On Approval of the Order of State Supervision in the Power Industry" №189 dated 15.02.1999	CAR22	OK
36 (f) (vii)	Are implicit and explicit key	The key assumptions are explained in the PDD	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	assumptions explained in a transparent manner?			
36 (f) (vii)	Is it clearly stated which assumptions and procedures have significant uncertainty associated with them, and how such uncertainty is to be addressed?	In the project design document there is not stated any information about significant uncertainty level of assumptions and procedures.	OK	OK
36 (f) (vii)	Is the uncertainty of key parameters described and, where possible, is an uncertainty range at 95% confidence level for key parameters for the calculation of emission reductions or enhancements of net removals provided?	See section 36 (f) (v) of this protocol	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 identifies national monitoring standard GKD 34.09.104-2003 applied to the project. The monitoring report provides reference to detailed description of proposed standard	OK	OK
36 (h)	Does the monitoring plan document statistical techniques, if used for monitoring, and that they are used in a	Not applicable for given JI project.	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	conservative manner?			
36 (i)	Does the monitoring plan present the quality assurance and control procedures for the monitoring process, including, as appropriate, information on calibration and on how records on data and/or method validity and accuracy are kept and made available upon request?	*CAR23* Please indicate in the monitoring plan next follows - description of quality assurance and control procedures for the monitoring process; - information on power meters calibration (or reference to calibration plan); - how monitored and required for ERUs calculation information will be kept and made available upon request	CAR23	OK
36 (j)	Does the monitoring plan clearly identify the responsibilities and the authority regarding the monitoring activities?	*CAR24* Please clearly identify the responsibilities and the authorities regarding the monitoring activities	CAR24	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?	There are not JI projects with similar monitoring plan in Ukraine	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	Presented in the PDD monitoring plan provides a complete compilation of the data that need to be collected for its application, including data that are measured or sampled and data that are collected from other sources. Data connected with baseline	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	collected from other sources but not including data that are calculated with equations?	scenario and emission reduction calculation are stated in tabular format in section D of the PDD.		
36 (m)	Does the monitoring plan indicate that the data monitored and required for verification are to be kept for two years after the last transfer of ERUs for the project?	*CAR25* Please indicate in the section D that the data monitored and required for ERUs calculation will be kept during two years after the last ERUs transfer with reference on relevant order of Service-Invest LLC	CAR25	OK
37	If selected elements or combinations of approved CDM methodologies or methodological tools are used for establishing the monitoring plan, are the selected elements or combination, together with elements supplementary developed by the project participants in line with 36 above?	No selected elements or combinations of approved CDM methodologies used for monitoring plan establishing	OK	OK
Approved CDM methodology approach only_Paragraphs 38(a) – 38(d)_Not applicable				
Applicable to both JI specific approach and approved CDM methodology approach_Paragraph 39_Not applicable				
Leakage				
JI specific approach only				
40 (a)	Does the PDD appropriately describe an assessment of the potential leakage of the project and appropriately explain which sources of leakage are to be calculated and which can be	The PDD indicates in appropriately way that project activity doesn't connect with fuel burning or transportation and due the project implementation fuel consumption will lowered *CL08*	CL08	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	neglected?	Please explain why potential leakage indicates in CH4		
40 (b)	Does the PDD provide a procedure for an ex ante estimate of leakage?	See section 40 (a) of this protocol	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	The PDD indicates that assessment of emissions in baseline scenario and in the project scenario was chosen	OK	OK
43	If the approach (a) in 42 is chosen, does the PDD provide ex ante estimates of: (a) Emissions or net removals for the project scenario (within the project boundary)? (b) Leakage, as applicable? (c) Emissions or net removals for the baseline scenario (within the project boundary)? (d) Emission reductions or enhancements of net removals adjusted by leakage?	The PDD provides ex-ante estimates of emissions. As for leakage, it is considered as absent, because electricity transportation by the Service-Invest grids that does not concern with production, transportation and firing of fuel.	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
44	If the approach (b) in 42 is chosen, does the PDD provide ex ante estimates of: (a) Emission reductions or enhancements of net removals (within the project boundary)? (b) Leakage, as applicable? (c) Emission reductions or enhancements of net removals adjusted by leakage?	See section 42 of this protocol	OK	OK
45	For both approaches in 42 (a) Are the estimates in 43 or 44 given: (i) On a periodic basis? (ii) At least from the beginning until the end of the crediting period? (iii) On a source-by-source/sink-by-sink basis? (iv) For each GHG? (v) In tones of CO2 equivalent, using global warming potentials defined by decision 2/CP.3 or as subsequently revised in accordance with Article 5 of the Kyoto Protocol? (b) Are the formula used for calculating the estimates in 43 or 44 consistent	The baseline emissions and project emissions are given on a periodic basis from the beginning to the end of the crediting period for each year. Baseline and project emissions are carried out for CO2 as GHG gas. Formulae used for calculating the estimates concerning in section D and section E are consistent throughout the PDD and calculation Excel spreadsheets. As there was already mentioned above, data sources used for calculating the estimates are clearly identified. Among key factors influencing the baseline emissions or the activity level of the project as well as risks associated with the project Carbon Emission Factor for electricity is taken into account. The emission factor of Ukrainian grid that	CAR26	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	throughout the PDD? (c) For calculating estimates in 43 or 44, are key factors influencing the baseline emissions or removals and the activity level of the project and the emissions or net removals as well as risks associated with the project taken into account, as appropriate? (d) Are data sources used for calculating the estimates in 43 or 44 clearly identified, reliable and transparent? (e) Are emission factors (including default emission factors) if used for calculating the estimates in 43 or 44 selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice? (f) Is the estimation in 43 or 44 based on conservative assumptions and the most plausible scenarios in a transparent manner? (g) Are the estimates in 43 or 44 consistent throughout the PDD? (h) Is the annual average of estimated emission reductions or enhancements of net removals calculated by dividing	used for calculation the estimates in the JI project is selected for usage with appropriate accuracy. Choice of emission factor is justified in the project design documents. Conservative assumptions are taken into account while estimating emission reduction. In the PDD there are provided tables with calculation results of CO2 emission reductions. As a fact, estimated total value of CO2 emission reductions for the first crediting period is 534 867 t CO2 equivalent; moreover, estimated total value of CO2 emission reductions for the period 2013-2024 is 1 556 401 t CO2 equivalent. *CAR26* Please check calculations rounding in the tables of section E		

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	the total estimated emission reductions or enhancements of net removals over the crediting period by the total months of the crediting period and multiplying by twelve?			
46	If the calculation of the baseline emissions or net removals is to be performed ex post, does the PDD include an illustrative ex ante emissions or net removals calculation?	The calculations of the baseline emissions and project emissions are to be performed ex post. Also, in the PDD there are provided ex ante calculation of emissions. All estimated values are presented in section E of the PDD and Excel spreadsheets	OK	OK
Approved CDM methodology approach only_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?	There are no significant environmental impacts of the project. The transboundary impacts are absent.	OK	OK
48 (b)	If the analysis in 48 (a) indicates that the environmental impacts are considered significant by the project participants or the host Party, does the PDD provide conclusion and all references to supporting documentation of an environmental	See section 48(a) of this protocol	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	impact assessment undertaken in accordance with the procedures as required by the host Party?			
Stakeholder consultation				
49	If stakeholder consultation was undertaken in accordance with the procedure as required by the host Party, does the PDD provide: (a) A list of stakeholders from whom comments on the projects have been received, if any? (b) The nature of the comments? (c) A description on whether and how the comments have been addressed?	The actual Ukraine legislation doesn't require stakeholder's consultation for JI projects. The project was presented to the Government of Ukraine and to the Local Authorities as a Project Idea and, later, as the Technical Documentation. The Government and Local Authorities has approved the Project. All the comments received were positive	OK	OK
Determination regarding small-scale projects (additional elements for assessment)_Paragraphs 50 - 57_Not applicable				
Determination regarding land use, land-use change and forestry projects _Paragraphs 58 – 64(d)_Not applicable				
Determination regarding programmes of activities_Paragraphs 66 – 73_Not applicable				

Table 2 Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1	Summary of project participant response	Determination team conclusion

CAR01 Please clearly indicate in the section A.2 situation existing before the project implementation and baseline scenario	-	In early 2000ths the situation in the energy sector of Ukraine was quite bad. All the major generating and transmission equipment was in bad technical condition. The lack of financing lead to the equipment efficiency decrease. In the case of the electricity transportation it means the increase of the electricity loses in a grid during the transportation. So, the situation before the Project was that the efficiency of the electricity transportation through the "Service-Invest" LLC grid was getting lower and the electricity loses were rising constantly. The "Service-Invest" LLC started it's activity in 2001 and in 2003 the first investment programme was developed. This programme included the implementation of the efficiency measures and the lowering of the electricity loses coefficient. One of the objectives for the investments was the possibility of the GHG lowering and potential JI registration	Closed based on PDD amendments

CAR02 Please include in the section A.2 short history of the Project including its JI component	-	The "Service-Invest" LLC started it's activity in 2001 and in 2003 the first investment programme was developed. This programme included the implementation of the efficiency measures and the lowering of the electricity loses coefficient. One of the objectives for the investments was the possibility of the GHG lowering and potential JI registration	Closed based on PDD amendments
CAR03 Please correct section A.4.1.4 that it not exceed one page	-	done	Closed based on project developer corrections of PDD

CAR04 Please provide project implementation schedule	-	The technological aspect of the Project foresees: 1. The replacement of the power transformers at the electricity substations that will lower the loses significantly (2003 - 2023). For example, in 2006 at the substation Davydovka-Pivnichna-110 the transformer TDTNG-31500/110 (loses coefficient – 5,05) was replaced by the TDTN-40000/110 (loses coefficient – 0,21) transformer. 2. The replacement of the cables and wires of the transmission lines by the armored ones (AS/ASO/ASU types) with the bigger section and, as the result, reliability (2003 - 2023). 3. The installation of the glass and polymeric insulators (2003 - 2023).	Closed based on PDD amendments
CAR05 Please correct calculation in "Example of the emission reduction calculation" for 2007 and 2009 years	-	Done	Closed
CAR06 Please add information on Project Endorsement to the PDD	19	The Letter of Endorsement #3540/23/7 dated 01.12.2011 has been received from the National Environmental Investments Agency of Ukraine.	Closed based on PDD amendments

CAR07 Baseline settings in the PDD version 1.1 are established on 1 year basis (2003 year). Decision 10/CMP.1 Implementation of Article 6 of the Kyoto Protocol indicates, that in case of relevant JI methodology absence project developer may use approved CDM methodologies and their elements and combinations. Similar CDM methodologies AM0067, AM0097 indicates, that baseline must be chosen on five year data basis. For another thing, according 1B-TRE forms value of transmitting by Service-Invest LLC electric energy is much different year-by-year. So, please establish baseline on three year basis for conservativeness guarantee and more clear and transparent baseline presentation.	23	The Service-Invest LLC is one of the first private electricity transportation companies in Ukraine and the situation in the Ukrainian Energy Sector was quite bad. The lack of financing lead to the equipment degradation. The efficiency was getting lower and the losses were growing. 2003 was chosen as the Baseline, because the Service-Invest LLC in 2003 has developed the Investment Program for the Electricity Grids Rehabilitation and reconstruction. We assume that the ***PPER*** coefficient would have remained the same during the Project implementation period in the situation of the absence of the Project (the real situation was that the electricity loses coefficient was getting bigger). (see B.1) The difference in the electricity transmission values is different year-by-year, because there was an economic growth started in Ukraine and the same situation can be seen in the electricity production, supply and consumption over the country.	Closed based on project developer clarifications and information provided by project participants
CAR08 Please provide calculations of emission reduction in accordance with Service-Invest LLC forms 1-B TRE for 2007-2011 years. Also please check values rounding in Excel-files.	23	done	Closed based on information provided by project owner.

CAR09 Baseline data definition indicates that carbon emission factor for electricity transmitting is available at the stage of determination and not monitored through the crediting period. Usual practice of JI activity in Ukraine is changing value of carbon emission factor each year. Please indicate that EF for electricity transmitting for 2012 year will be monitored during the crediting period	23	Determined in the PDD. Monitored throughout the Crediting Period. Available at the Determination for the period 2003-2011. For the next years the Emission Factor will be taken from the approved National Data sources (SEIA orders or other) and used in the Monitoring Reports.	Correction was found satisfactory. The issue is closed
CAR10 Approach selected for determination of appropriate analysis method is correct. Benchmark analysis is the proper method of analysis for the present project. The developer calculates the project NPV using discount rate which is based on average bank interest rate in Ukraine. Taking into account the fact that calculations were made in UAH the developer shall use the average loan rates in national currency as of 2005 (the last full year preceding project decision date). Unfortunately the relevant reference to the source of the interest rate is missing in sub step 2b. Please add the reference.	28	http://news.finance.ua/ru/~/2/20/ua/2003/06/11/34266	Please provide the reference to the source of information regarding average loan interest rates as of 2003-2005 in sub-step 2b. OK The issue is closed

CAR11 Please correct the wording of the sub-step 2b as following: "The benchmark for the present project is the NPV calculated using discount rate based on average lending rates in Ukraine in national currency. The discount rate is 15% (add the reference). The project owner would not consider the investment if the project is generating cash flow with NPV below 0."	28	done The wording was not changed. Please correct as suggested in the CAR 11. done	The wording was not changed. Please correct. Please correct as suggested in the CAR 11.
CAR12 Please note that in case if the real historic (not forecasted) values for investment expenses are applied they shall not be adjusted for inflation.	28		Please provide detailed break-down of the investments for the period of 2004-2025(2023). Please provide justification of the prolonged investment period taking into account that the project activities according to the PDD are planned to finish in 2023. OK The issue is closed

CAR13 The developer uses the period of 17 years for financial analysis of the project which is in lines with the Guidance recommending the period of 10-20 years. At the same time Guidance article 4 requires the fair value of the assets at the end of assessment period to be included in the cash flow for the final year. In our case the liquidation value of the assets for 2020 is estimated but not included in the final cash flow. Please add the reasonable market value (for example book value) of the assets to the cash flow for the final year. Please note that liquidating value shall not account for operational costs.	28	done	Please note that NPV can not be calculated basing on investment period only, it shall include the reasonable period of operational phase of the project when the revenues exceed the investments if available. Please extend the period for NPV calculations to at least 10 years after the end of investment period i.e. 2023+10=2033. OK The issue is closed
CAR14 Please provide the break-down of the operational expenses related to the project.	28	Інвестиції (заміна кабелів та реконструкція трансформаторних підстанцій), тис.грн done	Please provide detailed break-down of the investments for the period of 2004-2025(2023). Please provide justification of the prolonged investment period taking into account that the project activities according to the PDD are planned to finish in 2023. OK The issue is closed

CAR15 The revenues from the projects are calculated basing on the tariff for transportation of the natural gas and amount of natural gas transported. Taking into account the fact that Chornomornaftogaz is the gas/oil exploration company, reduction of gas losses in the pipelines leads to the increase of sales of the own natural gas, thereby economic effect from the project activity shall be properly estimated multiplying amount of the gas saved (losses reduced) in natural terms by selling price of the gas to the client of the company.	28	The revenue from the Project is calculated exactly on this basis: the multiplication of the leses reduction on the tariff.	Please clarify the reason for modification of the historical electrical tariffs in the new version of the document and provide the reference. OK The issue is closed
CAR16 The values in EUR and UAH are intermingled in the financial model. For example when calculating cash flow, revenues in UAH are added to investment and operational expenses in EUR. Please correct.	28	Everything is in UAH now.	OK, issue is closed
CAR17 In case of project energy saving measures implementation on new received equipment project boundaries will be different from indicated in the determined PDD. Please remove list of equipment pertained to Servise-Invest LLc.	32(a)	done	Closed by amendments provided in the PDD

CAR18 The PDD indicates that the starting date of the project is 28/12/2006. Please provide reference on relevant documents and explain why AAUs was obtained in 2003-2006 years	34(a)	06/06/2003 (Contract for the Working Project Development for the "Ilyich" Substation Reconstruction № 54-03-P493/2003 dated 06.06.2003).	The explanation was found satisfactory. The issue is closed
CAR19 Please specify the procedures to be followed if expected data are unavailable	36 (b) (iii)	See Annex 3	Closed
CAR20 Please correct designation of value of electricity losses in formulae (3) section D.1.1.2	36 (b) (v)	done	Correction was provided, the issue is closed
CAR21 Please provide designation of carbon emission factor to electricity transmitting in accordance with appendix B of "Guidance on criteria for baseline setting and monitoring" version 03	36 (c)	done	Closed
CAR22 Please provide correct reference to The Resolution of the Cabinet of Ministers of Ukraine "On Approval of the Order of State Supervision in the Power Industry" №189 dated 15.02.1999	36 (f) (vii)	done	Reference to The Resolution of the Cabinet of Ministers of Ukraine "On Approval of the Order of State Supervision in the Power Industry" №189 dated 15.02.1999 is correct working. The issue is closed

CAR23 Please indicate in the monitoring plan next follows - description of quality assurance and control procedures for the monitoring process; - information on power meters calibration (or reference to calibration plan); - how monitored and required for ERUs calculation information will be kept and made available upon request	36 (i)	done	The issue is closed based on information provided by the project developer in the section D and Annex 3 of the PDD
CAR24 Please clearly identify the responsibilities and the authorities regarding the monitoring activities	36 (j)	Annex 3	closed
CAR25 Please indicate in the section D that the data monitored and required for ERUs calculation will be kept during two years after the last ERUs transfer with reference on relevant order of Service-Invest LLC	36 (m)	done	The reference on relevant order of "Service-Invest" LLC was provided in the section D of PDD. The issue is closed.
CAR26 Please check calculations rounding in the tables of section E	45	done	Closed based on project developer amendments
CAR27 Please provide writtem project Approvals from both Parties	19	Written project approvals from DFPs of Parties Involved will be provided after determination process finishing	pending

CL01 Please clarify how new self-supported wires and insulating equipment installation will result to electricity losses reduction	-	The Project foresees the replacement of the wires and cables for those with the bigger section and the higher transmission capacity. That measure gives the opportunity to increase the reliability of the grid, to lower the tension at the wires and lower the electricity transportation loses and the GHG emission. These wires have a bigger section and better transmission coefficient. The other significant aspect of the Project is the installation of the glass and polymer insulators. That is the important part of the electricity transmission process and the reliability of the insulators makes an influence on the value of the electricity transmitted. These insulators have higher insulation efficiency.	Closed based on project developer clarifications

CL02 Please indicate in the PDD if proposed project activity is not common practice in Ukraine electricity transmitting enterprises.	-	According to the above mentioned legal acts the "Service-Invest" LLC does not set the price for it's services (tariffs). Besides, the acts mentioned define the order of the tariffs setting, which does not encourage the power transmission companies to reduce the power loses, because it will not be compensated. There is no financial benefit for the Project Owner from the Project implementation. Thus, the only motive for the Project implementation is its registration as a JI Project and the possibility of the emission reduction units purchase. So, the Project activity is not a common practice for the electricity transmission companies in Ukraine. Moreover, the most electricity transmission enterprises in Ukraine reach the electricity loses lowering by the implementation of the organizational measures (the lowering of the non-technical loses). The Service-Invest LLC does not have the non-technical loses in the losses structure, so all the effect obtained is due to the investment and technical rehabilitations.	Closed based on information provided by project developer

CL03 Please clarify next follows - Negative values of actual energy losses in August 2011 and May 2008. Calculations that included actual losses for substation own needs.	23	Negative values of energy lossess in "Service-Invest" LLC distributive networks in Dnepropetrovsk Region obtained by power metering system. Actual value of electricity losses is recalculated for next reporting period	Closed based on project owner clarifications.
CL04 Please clarify name of the GHG sources on Table 8	32(b)	done	Table 8 was checked. The issue is closed
CL05 During the site-visit was detected that high-voltage transformers and commutation equipment with sulphur hexafluoride insulation are in wide use on Service-Invest LLC substations. Please add in the section B.3 explanation of SF6 exclusion from the project boundaries	32(d)	See section B.3.	The amendment of PDD provided by project developer was found satisfactory. The issue is closed
CL06 The baseline was established based on data for 2003 year, but account of Emission reduction was begun for 01/01/2005. Please explain exclusion of data for 2004 year from calculations	34(c)	included	closed
CL07 Please clarify uncertainty level in key parameters in table D.2 "Quality control and quality assurance procedures undertaken for data monitored".	36 (f) (v)	done	The uncertainty level of project key parameters is indicated as low in the table D.2 of PDD. The issue is closed

CL08 Please explain why potential leakage indicates in CH4	40(a)	No leakage	closed