



# DETERMINATION REPORT ZAKARPATTYA OBLENERGO PJSC

## DETERMINATION OF THE “REDUCTION OF PROCESS LOSSES IN POWER LINES ZAKARPATTYA OBLENERGO PJSC”

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BUREAU VERITAS CERTIFICATION



DETERMINATION REPORT

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**Summary:**  
Bureau Veritas Certification has made the determination of the "Reduction of Process Losses in Power Lines Zakarpattyaoblenergo PJSC" project of Zakarpattyaoblenergo PJSC located in Onokivtsi village, Uzhgorod District, Zakarpattya Region, Ukraine, on the basis of UNFCCC criteria for the JI, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 6 of the Kyoto Protocol, the JI rules and modalities and the subsequent decisions by the JI Supervisory Committee, as well as the host country criteria.

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

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

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

Report No.: UKRAINE-det/0255/2011	Subject Group: JI
Project title: "Reduction of Process Losses in Power Lines Zakarpattyaoblenergo PJSC"	
Work carried out by: Oleg Skoblyk – Team Leader, Lead Verifier, Technical Specialist Denis Pishchalov – Team Member, Financial Specialist	
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Work signed by: Ivan Sokolov – Operational Manager	
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## 1 INTRODUCTION

Zakarpattyaoblenergo PJSC has commissioned Bureau Veritas Certification to determinate its JI project “Reduction of Process Losses in Power Lines Zakarpattyaoblenergo PJSC” (hereafter called “the project”) in Onokivtsi village, Uzhgorod District, Zakarpattya Region, Ukraine.

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

### 1.1 Objective

The determination serves as project design verification and is a requirement of all projects. The determination is an independent third party assessment of the project design. In particular, the project's baseline, the monitoring plan (MP), and the project's compliance with relevant UNFCCC and host country criteria are determined in order to confirm that the project design, as documented, is sound and reasonable, and meet the stated requirements and identified criteria. Determination is a requirement for all JI projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of emissions reductions units (ERUs).

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

### 1.2 Scope

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

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

### 1.3 Determination team

The determination team consists of the following personnel:

Oleg Skoblyk

Bureau Veritas Certification Team Leader, Climate Change Lead Verifier  
Technical Specialist

Denis Pishchalov

Bureau Veritas Certification Team member, Financial 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 Zakarpattyaoblenergo PJSC 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, Guidance on criteria for baseline setting and monitoring, Kyoto Protocol, Clarifications on Determination Requirements to be Checked by a Accredited Independent Entity were reviewed.

PDD «Reduction of Process Losses in Power Lines Zakarpattyaoblenergo PJSC» project of Zakarpattyaoblenergo PJSC version 1.0 was submitted on 25/10/2010.

To address Bureau Veritas Certification corrective action, forward action and clarification requests Zakarpattyaoblenergo PJSC revised the PDD and resubmitted it as version 4.0 of 04/05/2012 which is deemed final.



The determination findings presented in this report relate to the project as described in the PDD version 1.0 dated 25/10/2010 and version 4.0 of 04/05/2012.

## 2.2 Follow-up Interviews

On 04/04/2011 Bureau Veritas Certification performed on-site visit interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of Zakarpattyaoblenergo PJSC and Carbon Management Company GmbH were interviewed (see References). The main topics of the interviews are summarized in Table 1.

**Table 1 Interview topics**

Interviewed organization	Interview topics
Zakarpattyaoblenergo PJSC	<ul style="list-style-type: none"> <li>➤ Implementation schedule</li> <li>➤ Project management organisation</li> <li>➤ Evidence and records on reconstruction and new equipment and its operation</li> <li>➤ Environmental Impact Assessment</li> <li>➤ Project monitoring responsibilities</li> <li>➤ Monitoring equipment</li> <li>➤ Quality control and quality assurance procedures</li> <li>➤ Environmental impacts affected</li> <li>➤ Local authorities and public opinion</li> </ul>
CONSULTANT Carbon Management Company GmbH	<ul style="list-style-type: none"> <li>➤ Applicability of methodology</li> <li>➤ Baseline and Project scenarios</li> <li>➤ Barriers analysis</li> <li>➤ Additionality justification</li> <li>➤ Common practice analysis</li> <li>➤ Monitoring plan</li> <li>➤ Conformity of PDD to JI requirements</li> </ul>

## 2.3 Resolution of Clarification and Corrective Action Requests

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

Corrective Action Requests (CAR) is issued, where:

- (a) The project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions;
- (b) The JI requirements have not been met;



(c) There is a risk that emission reductions cannot be monitored or calculated.

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

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

### 3 PROJECT DESCRIPTION

**The objective of the JI project** «Reduction of Process Losses in Power Lines Zakarpattyaoblenergo PJSC» is the realization of the programme of technical reconstruction of electrical network and equipment, introduction of the progressive technologies, organization structure improvement, and transition to the higher organizational level of electricity grid transmission and distribution.

Taking measures foreseen by the project will let to increase the reliability and effectiveness of the distribution network of electric power in Onokivtsi village and Zakarpattya Region, and enhance the quality of consumers service. It will also help to reduce the amount of electric power, that is lost in the distributive and transport electrical networks of Zakarpattyaoblenergo PJSC, and that, in its turn, will help to reduce the amount of the generated electric energy and as the result pollutant emissions in the atmosphere.

#### **Situation at the beginning of the activity of the Project.**

At the beginning of the project (2003) Zakarpattyaoblenergo PJSC was realizing only such measures that were directed to the maintaining of electrical networks in good working order. These measures mainly included repairing work to eliminate errors, that arise during the operation of power networks. That resulted in the technological consumption, in 2002, in networks of Zakarpattyaoblenergo PJSC which reached 30.58% from the electric energy amount, that was coming into the company's network.

Most of the equipment that was being used at that moment in the networks of Zakarpattyaoblenergo PJSC was already physically and morally outdated, but because of the insufficient financing and operational reserves of this equipment, it remained still in use. Besides, it was possible to change this situation not only in the case of technical provision of the network modification, but also in the case of company's organizational structure improvement, which also required financing and manpower.



The possibility to sell greenhouse gas emission reduction units, became one of the factors for the start of the introduction program, the goal of which is the reduction of technological power consumption in the Zakarpattyaoblenergo PJSC electric network.

### **Project Scenario**

Joint implementation project is based on the implementation of complex of measures on elimination of power losses, which is introduced and financed since 2003.

The measures are taken within the framework of this program, for the implementation and constant monitoring of potential sources of the technological losses and prevention of their appearing enabled Zakarpattyaoblenergo PJSC to reduce technological consumption to 20.23% of the amount of electric power delivered to the network.

### **Baseline Scenario**

Baseline scenario foresees further usage of equipment while performing of planned repairing work without substantial investments. More information about baseline scenario is provided in section B of PDD.

### **History of the project**

01/07/2003 - Decisions of Board of Zakarpattyaoblenergo PJSC on the development and implementation of programs to reduce TPL (TVE) (Protocol #14). This date is the date the acceptance of this project as a JI project.

January, 2003 – start of the works on the program of TPL (TVE) reduction in the electrical network of Zakarpattyaoblenergo PJSC.

24/02/2011 – signing of a contract with ImexEnergO. Preparation of PDD.

Poland was indicated as Second Party Involved (The ImexEnergO Sp as a project participant) in the joint implementation project “Reduction of Process Losses in Power Lines Zakarpattyaoblenergo PJSC” at the beginning of the determination process. The Second Party Involved was changed to Switzerland (project participant is CARBON MANAGEMENT COMPANY GMBH). The new PDD version 4.0 dated 04/05/2012 and corresponding new Determination Report version 04 dated 07/05/2012 was issued, with new Second Party Involved indication.

### **Advantages of the project**





Apart from emissions reduction the implementation of project «Reduction of Process Losses in Power Lines Zakarpattyablenergo PJSC» has the following advantages:

- Creation of additional jobs, connected with the introducing of new equipment, construction and reconstruction of enterprise facilities;
- Pollutant emissions reduction by the cut down of the electric energy generation as a result of shortening of losses in the networks;
- Cutting production costs.

The realization of joint implementation project will reduce pollutant emissions by the shortage of electric energy generation, which is delivered to the network of Zakarpattyablenergo PJSC. Thus, the realization of the project will reduce the greenhouse gases emissions and will prevent from their further accumulation in the atmosphere, which in its turn, will loosen the climate changes.

Public joint stock company «Zakarpattyablenergo» (Zakarpattyablenergo PJSC) is an integral part of the unified energy system (UES) of Ukraine and provides the consumers of Zakarpattyablenergo PJSC region with the electric energy regularly and reliably under the uniform tariff.

At the beginning of the project (at the end of 2002) Zakarpattyablenergo PJSC) was realizing only such measures that were directed on the maintaining of electrical networks in good working order. These measures mainly included repairing work on eliminations of errors, that arise during the operation of electric networks. That resulted in the technological power losses, in 2002, in networks of Zakarpattyablenergo PJSC which reached 30.58% from the electric energy amount, that was coming into the company's network.

The objective of the project is the realization of technical reconstruction of electrical network and equipment programme, introduction of the progressive technologies, organization structure improvement, transition to the higher organizational level of electricity grid transmission and distribution by attracting investments.

The Joint implementation project is based on the implementation complex of organizational and technical measures on electricity losses reduction, which includes:

- realization of scientific and technical support, extension of the exploitation term of the functioning equipment, realization of the equipment diagnostics system and prognostication of its residual operating time;
- introduction of organizational and technical measures for technological power losses reduction;
- reconstructions and renovations of the electric networks, and substitution of outdated equipment;



- attraction of investments for the development and achievement of high technical and economical level of the Company;
- increase of power supply reliability level for the region consumers;
- implementation of the Automatized system of commercial accounting of power losses of the energy-supplying company perimeter, ASCAPC of consumers and substations;
- introduction of complex technical power losses reduction Program;
- modernization of the equipment in the framework of the electric power development investment programs.

Implementation of the program is continuous process that will conduct over the operational period of the project.

The Project implementation provided the following measures:

1. Organizational measures of methodological ensuring.
2. Organizing – technical measures.
3. Technical measures.

All these measures, implementation and continuous monitoring of possible sources of energy losses and prevent possible occurrence of Zakarpattyaoblenergo PJSC reduce technical electricity losses in their electrical systems.

Reduction of technological power losses in the Company networks allowed reducing CO2 emissions, caused by generation of electricity that was lost.

Duration of the project is unlimited, since the measures taken to detect and remove TPL (TVE) in separate power network units and feeders, power network areas, as well as to reduce general technological power losses in the Zakarpattyaoblenergo PJSC, are a constant and continual process. CO2 eq emissions reduction are affirmed on one crediting period (22 years) according to the modality and JI Mechanism procedures(3).

Purchase of equipment and supplies as well as carrying out of project assembly and commissioning operations are accomplished by contract organizations by tender in the order, established in Ukraine. Besides the equipment and work cost, the main criteria of equipment selection is its quality and reliability, as well as professionalism and responsiveness to ISO–9000 of executors. The equipment suppliers are national and foreign producers which have proved themselves in the power.

Works on technological power losses reduction are held in the framework of investment Programs of the Company, Plans of current and capital repairs, Plans of power networks maintenance that are annually approved by “Minpalyvenergo”of Ukraine and NPRC of Ukraine.



CARs (CAR01-CAR06), CLs (CL01-CL02) and their resolutions/conclusions applicable to project description are listed in the APPENDIX A: DETERMINATION PROTOCOL (Table 2) below.

#### **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 16 Corrective Action Requests and 10 Clarification Requests.

##### **4.1 Project approvals by Parties involved (19-20)**

The Project has been presented to the government of the Host Party and obtained Letter of Endorsement #2838/23/7 issued by State Environment Investment Agency of Ukraine 30/09/2011

The project has been approved by the Host Party and the Party-buyer of ERUs. Letter of Approval #3699/23/7 dated 21/12/2011 has been issued by State Environment Investment Agency of Ukraine. Letter of Approval J294-0485 dated 27/04/2012 has been issued by Switzerland Federal Department of the Environment, Transport, Energy and Communications DETEC. The AIE obtained written project approvals by the project developer and doesn't doubt in their authenticity.

CAR07, CL03 and their resolutions/conclusions applicable to project approvals by Parties involved are listed in the APPENDIX A: DETERMINATION PROTOCOL (Table 2) below.

##### **4.2 Authorization of project participants by Parties involved (21)**

The official authorization of each legal entity listed as project participant in the PDD by Parties Involved are provided in written project approvals (see section 4.1 of this report)

CAR07, CL03 and their resolutions/conclusions applicable to authorization of project participants by Parties involved are listed in the APPENDIX A: DETERMINATION PROTOCOL (Table 2) below.



### 4.3 Baseline setting (22-26)

The PDD explicitly indicates that JI specific approach was the selected approach for identifying the baseline.

The baseline scenario has been established in accordance with the JI Guidance on criteria for baseline setting and monitoring, version 03 adopted at 18<sup>th</sup> Meeting of the JISC.

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

- (a) By listing and describing the following plausible future scenarios on the basis of conservative assumptions and selecting the most plausible one:
  - a. continuation of the existing practice of power grid operation;
  - b. implementation of the above project without JI mechanism.
  - c. Partial implementation of project activity without registration as Joint Implementation project activity.
- (b) Taking into account relevant national and/or sectoral policies and circumstances, such as sectoral reform initiatives, local fuel availability, power sector expansion plans, and the economic situation in the project sector. In this context, the following key factors that affect a baseline are taken into account:
  - Electricity and main fuel prices are fixed by the government and change independently from the enterprise needs.
  - The Power Grid is a very complicated system, which consists of the groups of power transformation, transmission and distributing equipment, management and monitoring systems and only if these groups work coherently the result will be positive. It means that all of the groups of measures implemented in the Zakarpattyaoblenergo PJSC power grid should be coordinated with the other parts of the system. Besides, some new equipment will be implemented on the Units and there is no experience or historical data that could show the possibility of the effective work of such a system.
  - Ukraine has one of the lowest electricity tariffs in Europe. Therefore, it is really hard invest some cost for the reconstruction or the rehabilitation of the equipment.



Default multi-project emission factors for Ukraine National Power Grid defined by National Environmental Investment Agency of Ukraine have been applied for calculation of greenhouse gases emissions.

All explanations, descriptions and analyses pertaining to the baseline in the PDD are made in accordance with the identified JI specific approach and the baseline is identified appropriately.

CAR08, CL04 and and their resolutions/conclusions applicable to baseline setting are listed in the APPENDIX A: DETERMINATION PROTOCOL (Table 2) below.

#### **4.4 Additionality (27-31)**

Barriers analysis and common practice analysis were used to demonstrate additionality of the project activity. All explanations, descriptions and analyses are made in accordance with the selected tool or method.

The following additionality proofs are provided:

1. there are three alternative scenarios to the project activity identified;
2. the identified financial barrier would credibly prevent the implementation of the proposed project activity undertaken without being registered as a JI activity;
3. the common practice analyses carried out by the PP's, complementing the investment and barrier analysis

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

CAR09 and its resolution/conclusion applicable to additionality are listed in the APPENDIX A: DETERMINATION PROTOCOL (Table 2) below.

#### **4.5 Project boundary (32-33)**

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

Reasonably attributable to the project:

- CO<sub>2</sub> emissions related to electric energy production for electrical grid

The delineation of the project boundary and the gases and sources included are appropriately described and justified in the PDD.

The AIE determined the project boundary by:

a) Detailed review of relevant documentation (list of all determined documents provided in "Category 2 Document" below).



b) Interviews and observations during site visit to Zakarpattyaoblenergo PJSC dated 04/04/2011 (list of interviewed persons provided in “Persons interviewed” below).

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

CAR10, CLs (CL05, CL06) and their resolutions/conclusions applicable to project boundary are listed in the APPENDIX A: DETERMINATION PROTOCOL (Table 2) below.

#### **4.6 Crediting period (34)**

The PDD states the starting date of the project as the date on which the implementation or construction or real action of the project will begin or began, and the starting date is 01/07/2003, which is after the beginning of 2000.

The PDD states the expected operational lifetime of the project in years and months, which is 25 years (300 months).

The PDD states the length of the crediting period in years and months, which is 22 years or 264 months, and its starting date as 01/01/2004, which is 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.

CLs (CL07, CL08) and their resolutions/conclusions applicable to crediting period are listed in the APPENDIX A: DETERMINATION PROTOCOL (Table 2) below.

#### **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 fuel saving.

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

1. Actual receiving of electricity to the grid
2. Total reduction of technical power losses
3. CO<sub>2</sub> emission factor for Ukrainian Grid

The monitoring plan draws on the list of standard variables contained in appendix B of “Guidance on criteria for baseline setting and monitoring” developed by the JISC, such as PE<sub>y</sub>; BE<sub>y</sub>; GEF<sub>y</sub>.

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: N/A.
- (ii) Data and parameters that are monitored throughout the crediting period, such as: PE<sub>y</sub>; BE<sub>y</sub>; GEF<sub>y</sub>, V<sub>y</sub>.

The monitoring plan describes the methods employed for data monitoring (including its frequency) and recording depending on its kind. It is provided in comprehensive manner in Tables for the key-parameters in Section B.1. of the PDD.

The monitoring plan elaborates all algorithms and formulae used for the estimation/calculation of baseline emissions and project emissions/removals or direct monitoring of emission reductions from the project, leakage, as appropriate, such as:

### **Project emissions**

The mission reduction will be achieved by reducing power losses in the company’s power grids which in its turn will be achieved as a result of the project implementation.

Since the baseline emissions are calculated based on difference between of power loss before and after the project implementation, consequently the project emission will equal zero.



$$PE_y = 0$$

### Baseline emissions

Baseline emissions are defined by the following equation:

$$BE_y = V_y \cdot GEF_y, \quad (1)$$

where

$BE_y$  = baseline emissions (tCO<sub>2</sub>e);

$V_y$  = total technical loss reduction in the power distribution system during the period  $y$  of the project scenario compared with the baseline, MWh;

$GEF_y$  = CO<sub>2</sub> emission factor in UPS of Ukraine for the the power replacement projects in the year  $y$ , tCO<sub>2</sub>e/MWh;

$y$  = the year for which estimates are made.

### Emission reduction

Emissions reductions are defined by the following equation:

$$ER_y = BE_y - (PE_y + LE_y), \quad (2)$$

Where:

$ER_y$  = emission reduction during the year  $y$ , t CO<sub>2</sub>e;

$BE_y$  = baseline emission of the greenhouse gases in the year  $y$ , t CO<sub>2</sub>e;

$PE_y$  = greenhouse gases emission caused by the project activity in the year  $y$ , t CO<sub>2</sub>e;

$LE_y$  = escape emission in the year  $y$ , t CO<sub>2</sub>e.

The monitoring plan presents the quality assurance and control procedures for the monitoring process. 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.

Data monitored and required for verification are to be kept for two years after the last transfer of ERUs for the project.

The monitoring plan clearly identifies the responsibilities and the authority regarding the monitoring activities. The roles and responsibilities of the persons involved to monitoring process are described in full in section D.3





of PDD and vividly demonstrated on the Scheme of data collection for Monitoring Report.

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

The monitoring plan provides, in tabular form, a complete compilation of the data 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, 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.

CARs (CAR11-CAR15), CLs (CL09, CL10) and their resolutions/conclusions applicable to monitoring plan are listed in the APPENDIX A: DETERMINATION PROTOCOL (Table 2) below.

#### **4.8 Leakage (40-41)**

The PDD appropriately describes an assessment of the potential Indirect external leakage of CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O generated by fuel production and its transportation and appropriately explains that they are neglected.

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

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

The PDD provides the ex ante estimates of:

(a) Emissions for the project scenario (within the project boundary), which are:

The mission reduction will be achieved by reducing power losses in the company's power grids which in its turn will be achieved as a result of the project implementation.

Since the baseline emissions are calculated based on difference between of power loss before and after the project implementation, consequently the project emission will equal zero.

$$PE_y = 0$$



(b) No leakage is expected during the project activity;

(c) Emissions for the baseline scenario (within the project boundary), which are:

- 282440 tonnes of CO2 equivalent for period 01/01/2004-31/12/2007;
- 907597 tonnes of CO2 equivalent for period 01/01/2008-31/12/2012;
- 2359461 tonnes of CO2 equivalent for period 01/01/2013-31/12/2025

(d) Emission reductions adjusted by leakage (based on (a)-(c) above), which are:

- 282440 tonnes of CO2 equivalent for period 01/01/2004-31/12/2007;
- 907597 tonnes of CO2 equivalent for period 01/01/2008-31/12/2012;
- 2359461 tonnes of CO2 equivalent for period 01/01/2013-31/12/2025

Emission reductions estimation after the first commitment period

The estimates referred to above are given:

(a) On a periodic basis;

(b) From 01/01/2004 to 31/12/2025, covering the whole crediting period;

(c) On a source-by-source 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 is consistent throughout the PDD.

Data sources used for calculating the estimates referred to above are clearly identified, reliable and transparent.

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.

No issues applicable to estimation of emission reductions or enhancements of net removals were found.

#### **4.10 Environmental impacts (48)**



The analysis of the environmental impacts of the project is done by the specialized companies. They also issued documents in which there is the estimation of emissions into the atmosphere by permanent sources - industrial areas (mechanical, welding, woodworking enterprises etc). According to the expert's report this enterprise belongs to the 3rd group, as its emissions do not exceed emissions limit. Due to the low level of emissions, the enterprise meets the pollution standard and its risk level is considered as harmless to the environment.

Aiming at increasing efficiency of the operating plans of harmful environmental impacts restriction, every year all the energy objects of the enterprise are subjected to complex verification, held by the State Ecological Inspection in Zakarpattya Region, as to check whether they abide the environmental legislation, to estimate the technical condition of the power plants and the general condition of the environmental protection, to check whether they take appropriate measures to minimize emissions, water discharge and wastes

Ecological audit of the enterprise is submitted to: The State Department of water economy in Zakarpattya Region – quarterly and yearly report on water usage; The State Statistics Department - the report on the environmental protection expenses and the ecological payments for the year (№1-Ecological expenses), report on wastes management for the year (№1-Wastes).

In accordance with the laws of Ukraine “On fire safety” and “On environmental protection”, aiming at organization and control of meeting the requirements of the regulatory documents on fire and ecological security, taking organizational and other kinds of measures for preventing fires, reduction of the harmful impact of the production factor on the environment, life and health of the workers; coordination and improvement of the work, connected with fire and ecological safeguarding in the company units, - in 2006 *Environmental protection and fire safety service* was created, which consists of: a service chief, an engineer and a technician. The main tasks and functions of the *Service* are:

- to conduct the internal fire and ecological safety audit in the administration of the Company and in the military and industrial complex to check their conformity with the regulatory acts;
- coordination of the fire-preventive work, organization of the complex measures elaboration to improve fire and ecological security, control of their performance;
- methodological management and control in the sphere of fire and ecological;
- registration of fires and accidents having impact on ecology, analysis of causes and their prevention;



- elaboration of the effective system of the environmental protection management;
- introduction of the achievements in science and technics, progressive and environmentally sound technologies into the manufacture;
- to hold meetings, seminars, conferences on ecological security;
- organization of briefings on fire and ecological security for the employees who are accepted on a permanent or temporary job;
- providing with the national, sectoral and intersectoral regulatory acts on fire and ecological security;
- organization of the complex measures elaboration to improve fire and ecological security, control of their performance;
- to prepare the project orders, decrees, information materials on fire and ecological security and to bring the to the knowledge of the subunits;
- propagation of fire and ecological security;
- control the abidance by the legislative and other kinds of regulatory acts on fire and ecological security, fulfilment of orders, directions and the requirements of the instructions and ordinances of the State and internal monitoring;
- organization of the official investigation of fires and accidents;
- make reportings according to the set forms;
- ensuring the appropriate issuance and keeping of documentation according to the standard practice;
- consideration of the letters, applications, complaints from the employees and other organizations as to the keeping the laws on environmental protection and fire security.

The project will not result in significant environmental impacts in addition to reducing greenhouse gas emissions.

The project activities will not have transboundary environmental impacts. According to the standard mass threshold for identification of hazardous substances of high-risk determined by the Resolution of CMU №956 of 11<sup>th</sup> of July, 2002, the specialized organization has defined the categories of equipment having characteristics that refer them to the hazardous substances (Form SHR-1). These are toxic substances of the 3<sup>rd</sup> group (harmful for people and the environment), namely: nickel compounds (fine-dispersed powder), quicksilver and its compounds, lead and its compounds, sulfuric acid, which can be found in fluorescent lamps and



storage batteries; and of the 1<sup>st</sup> group (explosive substances), namely: combustible gasses and highly inflammable substances, that can be found in machinery and pipelines of the 2 warehouses of fuels and lubricants and gas boiler houses.

Within the project activities there were installed electrical equipment containing in its composition insulating gas (SF<sub>6</sub>) which is a toxic gas. In the operation insulating gas does not lose its properties, so after the life of the equipment or in case of its decommission for other reasons, insulating gas is disposed by pumping-out and then re-used in new equipment. To prevent unauthorized leaks of insulating gas at all the sites where relevant equipment is present the sensors of insulating gas leaks are installed.

There are specially equipped places on the enterprise for storage of such equipment, which are inspected and adjusted by the appropriate resolutions of the sanitary-and-epidemiological control and environmental protection bodies.

Measures preventing harmful environmental impact of carbon oxide and nitric oxide escaping from boiler houses:

- exploitation of boilers according to the regime map;
- prohibition to regulate units and blocks of the equipment on one's own;
- timely carrying out of the technical inspection according to the recommendations of the equipment manufacturer;
- periodical quality control of the combustion materials to detect the exceeding limits of emissions;
- control and registration of gross emissions.

Measures preventing harmful environmental impact of fumes of highly inflammable substances from fuels and lubricants namely :

- timely carrying out of the technical inspection according to the recommendations of the equipment manufacturer;
- intensification of the control over the technological regime of the equipment, evolving emissions;
- reducing the burden of the equipment.

According the enterprise is one of the waste generation objects (WGO) and according to the permission it temporarily holds the wastes within the set limits (before their utilization or removal) by the specialized enterprises. The enterprise does not utilize any wastes apart from processed engine oils, which are used in tractors hydraulic systems and hoisting apparatus.

The main part of scrap metal is formed by exploitation of transformer substation, a part of which after refitment and regeneration of transformer



oil is put into operation again and other part which is beyond repair and its regenerated oil is unfit, is discharged and submitted for utilization to the specialized enterprises according to concluded agreements.

Utilization agreements:

„Eko laif”, ltd – fluorescent lamps,  
„Zakarpattvormet” SOE – scrap metal, storage batteries, electrodes,  
KATP 072801 – hard household wastes,

The project will make a positive influence on the environment comparing with the current state, as the reconstructions will improve the effectiveness of the power recourses usage and will reduce the emission of the pollutants into the air. In such a way the influence from the reconstruction is insignificant.

CAR16 and its resolution/conclusion applicable to environmental impacts are listed in the APPENDIX A: DETERMINATION PROTOCOL (Table 2) below.

#### **4.11 Stakeholder consultation (49)**

No stakeholders' comments were received.

#### **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 “Reduction of Process Losses in Power Lines Zakarpattyaoblenergo PJSC” located in Onokivtzi village, Uzhgorod District, Zakarpattya Region, Ukraine. The determination was performed on the basis of UNFCCC



criteria and host country criteria and also on the criteria given to provide for consistent project operations, monitoring and reporting.

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

Project participants chose as reference and comparable case, already registered JI project: “Modernization of electric power distribution system at PJSC “PC “Zhytomyroblenergo” in accordance with option 3 point 9(a) (JI specific approach) of the JI Guidance on criteria for baseline setting and monitoring, version 03 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 4.0) 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 Zakarpattyaoblenergo PJSC that relate directly to the GHG components of the project.

- /1/ PDD “Reduction of Process Losses in Power Lines Zakarpattyaoblenergo PJSC” version 1.0 dated 25/10/2010
- /2/ PDD “Reduction of Process Losses in Power Lines Zakarpattyaoblenergo PJSC” version 2.0 dated 15/09/2011
- /3/ PDD “Reduction of Process Losses in Power Lines Zakarpattyaoblenergo PJSC” version 4.0 dated 04/05/2012
- /4/ “20120504\_ZOE\_ER.xls” – ERUs excel file
- /5/ Letter of Endorsement #2838/23/7 issued by State Environmental Investment Agency of Ukraine on 30/09/2011
- /6/ Letter of Approval #3699/23/7 dated 21/12/2011 issued by State Environmental Investment Agency of Ukraine



- /7/ Letter of Approval J295-0485 issued by Switzerland Federal Department of the Environment, Transport, Energy and Communications DETEC on 27/04/2012

**Category 2 Documents:**

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

- /1/ Decree of Cabinet of Ministers of Ukraine #206, dated 22/02/2006
- /2/ Joint Implementation Project Design Document Form, version 01
- /3/ Guidelines for Users of the Joint Implementation Project Design Document Form/Version 04, JISC.
- /4/ JISC Guidance on criteria for baseline setting and monitoring. Version 02.
- /5/ "Combined tool to identify the baseline scenario and demonstrate additionality" (Version 03.0.0)
- /6/ Glossary of Joint Implementation Terms, Version 03.
- /7/ Decree #43 on approval of indexes of specific carbon dioxide emissions in the year 2010 issued by NEIA dated 28.03.2011.
- /8/ Decree #62 on approval of indexes of specific carbon dioxide emissions in the year 2008 issued by NEIA dated 15.04.2011.
- /9/ Decree #63 on approval of indexes of specific carbon dioxide emissions in the year 2009 issued by NEIA dated 15.04.2011.
- /10/ Decree #75 on approval of indexes of specific carbon dioxide emissions in the year 2011 issued by NEIA dated 12.05.2011.
- /11/ The methodology of technical power losses amount determination, in 150-0,38 kV tension power grids power supply company for the indirect carbon dioxide emissions estimation
- /12/ Account for electric power usage №3086620 dated 04.04.2011
- /13/ Addition No.70 of Derzhgirpromnagliad dated 24.06.2009
- /14/ Addition No.8 of verification of sweet water condition dated 28.01.2011
- /15/ Addition of Derzhgirpromnagliad dated 12.12.2007
- /16/ Addition of National department of ecology and natural resources dated 29.06.2004
- /17/ Addition of National ecological inspection dated 29.12.2010 No.394
- /18/ Addition of State ecological inspection dated 25.12.2009 No.203
- /19/ Agreement №01/10 on solid wastes removal dated 04.01.2010
- /20/ Agreement №071 on sewage removal dated 15.01.2010
- /21/ Agreement №10/01 on solid wastes removal dated 05.01.2009
- /22/ Agreement №116 on work fulfilment on neutralization of used materials dated 01.07.2010
- /23/ Agreement №12/01 on solid wastes removal dated 02.01.2010
- /24/ Agreement №12/13 on work fulfilment on neutralization of production wastes dated 13.12.2010
- /25/ Agreement №13 on solid wastes removal dated 04.01.2010
- /26/ Agreement №15 on household rubbish removal dated 05.01.2010
- /27/ Agreement №15 on solid sewage removal dated 04.01.2011





- /28/ Agreement №15/12 about reception and payment for scrap and black and color metals wastes dated 15.12.2010
- /29/ Agreement №16/12 about reception and payment for used whole batteries of led accumulators with stuff dated 16.12.2010
- /30/ Agreement №187 on solid wastes removal dated 28.01.2009
- /31/ Agreement №216 on solid wastes removal dated 3/03/2008
- /32/ Agreement №33 on solid sewage removal dated 02.04.2009
- /33/ Agreement №35 on solid wastes removal dated 01.01.2010
- /34/ Agreement №4/239 on solid wastes removal dated 01.02.2010
- /35/ Agreement №44 on solid wastes removal dated 01.03.2010
- /36/ Agreement №457 on solid wastes removal dated 23.02.2010
- /37/ Agreement №7/12 about receiving and processing of rubber tyres scrap dated 07.12.2010
- /38/ Agreement №BBT 411 about reception of solid mixed wastes dated 23.12.2010
- /39/ Agreement of electric power purchase and sale between SC "Energorynok" and OJSC EC "Zakarpattiaoblenergo" dated April 2009
- /40/ Agreement of electric power purchase and sale between SC "Energorynok" and OJSC EC "Zakarpattiaoblenergo" dated April 2010
- /41/ Agreement of electric power purchase and sale between SC "Energorynok" and OJSC EC "Zakarpattiaoblenergo" dated August 2009
- /42/ Agreement of electric power purchase and sale between SC "Energorynok" and OJSC EC "Zakarpattiaoblenergo" dated August 2010
- /43/ Agreement of electric power purchase and sale between SC "Energorynok" and OJSC EC "Zakarpattiaoblenergo" dated December 2009
- /44/ Agreement of electric power purchase and sale between SC "Energorynok" and OJSC EC "Zakarpattiaoblenergo" dated December 2010
- /45/ Agreement of electric power purchase and sale between SC "Energorynok" and OJSC EC "Zakarpattiaoblenergo" dated February 2009
- /46/ Agreement of electric power purchase and sale between SC "Energorynok" and OJSC EC "Zakarpattiaoblenergo" dated February 2010
- /47/ Agreement of electric power purchase and sale between SC "Energorynok" and OJSC EC "Zakarpattiaoblenergo" dated January 2009
- /48/ Agreement of electric power purchase and sale between SC "Energorynok" and OJSC EC "Zakarpattiaoblenergo" dated January 2010
- /49/ Agreement of electric power purchase and sale between SC "Energorynok" and OJSC EC "Zakarpattiaoblenergo" dated July



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- /50/ Agreement of electric power purchase and sale between SC "Energorynok" and OJSC EC "Zakarpattiaoblenergo" dated July 2010
  - /51/ Agreement of electric power purchase and sale between SC "Energorynok" and OJSC EC "Zakarpattiaoblenergo" dated June 2009
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  - /53/ Agreement of electric power purchase and sale between SC "Energorynok" and OJSC EC "Zakarpattiaoblenergo" dated March 2008
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- /120/ Electronic electric power users database
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- /136/ Letter of endorcement of profect of automatized system of electric power commercial account creation №04/42-7603 dated 18.12.2008
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  - /156) Principles of compilation of electric power balance structure in electricity supply networks of 0,38-150 kV, analysis of its rectangular components and regulation of technological expenditure of electricity
  - /157) Programm of hand-over tests of automatized system of electric power commercial account in 2010
  - /158) Programm of REM dispatchers' skills improvement
  - /159) Programm of skills improvement of masters of REM production devisions repairment
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- /176/ Report on results of activities in 2006 and tasks for 2007 dated 02/01/2007
- /177/ Resolution No.4 about administrative amercement dated 22.02.2010
- /178/ Sample of electricity supply statement into Tyachiv REM network in nets with 10/6-0,4 kV
- /179/ Sample of list for delivery of certificates of qualification improvement in NKK OJSC EC "Zakarpattiaoblenergo"
- /180/ Sample of protocol of qualification committee meeting of NKK OJSC EC "Zakarpattiaoblenergo"
- /181/ Stamp of NKK OJSC EC "Zakarpattiaoblenergo"
- /182/ Statement No.116 of National ecological inspection dated 20.10.2004
- /183/ Statement of inspection of environmental regulations compliance dated 03.06.2010
- /184/ Statement of inspection of Uzh river coast within the border of the city of Onokivtsi village dated 07.11.2008
- /185/ Statement of National ecological inspection dated 13.10.2004
- /186/ Statement of National ecological inspection dated 14.10.2004
- /187/ Statement of National ecological inspection dated 14.10.2004
- /188/ Statement of National ecological inspection dated 15.10.2004
- /189/ Statement of National ecological inspection dated 15.10.2004
- /190/ Statement of National ecological inspection dated 20.04.1999
- /191/ Statement of reception of automatized system of electric power commercial account into researching operation dated 18/12/2008
- /192/ Statement on the order of data exchange between ASOE (ACOE) of Western SC NEC "Ukrenergo" and OJSC EC "Zakarpattiaoblenergo" dated 29/04/2010
- /193/ Verification certificat for standart metre №29-09/2258 Current transformer И-56 Reg.№35259 dated 09.12.2009
- /194/ Verification certificat for standart metre №29-10/0391 Tension transformer HOM(э)-6/10 Reg.№803 dated 01.03.2010
- /195/ Verification certificat for standart metre №3/627 Electricity supply meter calibration facility ЦУ6800/3 Reg.№17079 dated 28.07.2010
- /196/ Verification certificat for standart metre №3/628 Etalon three-phase meter EFH-31 Reg.№1163 dated 28.07.2010
- /197/ Verification certificat for standart metre №3/628 Etalon three-phase meter ЦЭ6806-02 Reg.№190366 dated 28.07.2010
- /198/ Verification certificat for standart metre №3/629 Etalon three-phase meter ЦЭ6806-02 Reg.№160305 dated 28.07.2010
- /199/ Verification certificat for standart metre №3/643 Etalon three-phase meter WS2310B Reg.№1316060299 dated 29.07.2010
- /200/ Verification certificat for standart metre №3/644 Etalon three-phase meter WS2310B Reg.№1316060292 dated 29.07.2010
- /201/ Verification certificat for standart metre №3/657 Electricity supply





- meter calibration facility ЦУ6800/3 Reg.№1N126 dated 04.08.2010
- /202/ Verification certificat for standart metre №3/693 Resistance box MCP-63 Reg.№01488 dated 05.08.2010
  - /203/ Verification certificat for standart metre №3/694 Resistance box MCP-63 Reg.№03010 dated 05.08.2010
  - /204/ Verification certificat for standart metre №3/695 Resistance box MCP-63 Reg.№06961 dated 05.08.2010
  - /205/ Verification certificat for standart metre №3/696 Resistance box MCP-63 Reg.№01275 dated 05.08.2010
  - /206/ Verification certificat for standart metre №3/697 Resistance box MCP-63 Reg.№01169 dated 05.08.2010
  - /207/ Verification certificat for standart metre №3/698 Continuous current bridge МОД-61 Reg.№1719 dated 05.08.2010
  - /208/ Verification certificat for standart metre №3/702 Resistance box P4073 Reg.№375 dated 05.08.2010
  - /209/ Verification certificat for standart metre №3/703 Resistance box P4042 Reg.№536 dated 05.08.2010
  - /210/ Verification certificat for standart metre №3/704 Resistance box P403 Reg.№20804 dated 05.08.2010
  - /211/ Verification certificat for standart metre №3/705 Resistance box P4047 Reg.№305 dated 05.08.2010
  - /212/ Verification certificat for standart metre №3/706 Resistance box P4047 Reg.№343 dated 05.08.2010
  - /213/ Verification certificat for standart metre №3/706 Resistance box P4057 Reg.№2421 dated 05.08.2010
  - /214/ Verification certificat for standart metre №3/707 Resistance box P4003 Reg.№2207 dated 05.08.2010
  - /215/ Verification certificat for standart metre №3/708 Resistance box P4041 Reg.№428 dated 05.08.2010
  - /216/ Verification certificat for standart metre №3/710 Resistance box P4002 Reg.№10959 dated 05.08.2010
  - /217/ Verification certificat for standart metre №3/711 Wattmeter Д57 Reg.№21514 dated 06.08.2010
  - /218/ Verification certificat for standart metre №3/712 Amperemeter Д57 Reg.№17063 dated 06.08.2010
  - /219/ Verification certificat for standart metre №3/713 Cymometer Ф5043 Reg.№4195 dated 06.08.2010
  - /220/ Verification certificat for standart metre №3/714 Current transformer YTT-6 Reg.№3601 dated 06.08.2010
  - /221/ Verification certificat for standart metre №3/715 Cymometer Д506 Reg.№109340 dated 06.08.2010
  - /222/ Verification certificat for standart metre №3/716 Amvoltmeter Ц4311 Reg.№3042 dated 06.08.2010
  - /223/ Verification certificat for standart metre №3/717 Voltmeter Д5103 Reg.№401 dated 09.08.2010
  - /224/ Verification certificat for standart metre №3/718 Voltmeter Э513 Reg.№99131 dated 09.08.2010



- /225/ Verification certificat for standart metre №3/719 Amperemeter Д5100 Reg.№2679 dated 09.08.2010
- /226/ Verification certificat for standart metre №3/720 Wattmeter Д5105 Reg.№2411 dated 09.08.2010
- /227/ Verification certificat for standart metre №3/724 Millammeter Д50145 Reg.№5232 dated 10.08.2010
- /228/ Verification certificat for standart metre №3/725 Millammeter Д50144 Reg.№5463 dated 10.08.2010
- /229/ Verification certificat for standart metre №3/726 Millammeter Д50146 Reg.№5563 dated 10.08.2010
- /230/ Verification certificat for standart metre №3/727 Wattmeter Д5106 Reg.№2350 dated 10.08.2010
- /231/ Verification certificat for standart metre №3/728 Wattmeter Д5105 Reg.№2445 dated 10.08.2010
- /232/ Verification certificat for standart metre №3/729 Wattmeter Д5106 Reg.№356 dated 11.08.2010
- /233/ Verification certificat for standart metre №3/754 Wattmeter Д580 Reg.№5007 dated 18.08.2010
- /234/ Verification certificat for standart metre №3/755 Voltmeter Д50152 Reg.№5722 dated 18.08.2010
- /235/ Verification certificat for standart metre №3/756 Voltmeter Ц4311 Reg.№193 dated 18.08.2010
- /236/ Verification certificat for standart metre №3/757 Amperemeter Д5017 Reg.№50950 dated 18.08.2010
- /237/ Verification certificat for standart metre №3/758 Amperemeter Д566 Reg.№11177 dated 18.08.2010
- /238/ Verification certificat for standart metre №3/767 Microammeter M2005 Reg.№4270 dated 19.08.2010
- /239/ Verification certificat for standart metre №3/768 Voltammeter M2007 Reg.№9733 dated 19.08.2010
- /240/ Verification certificat for standart metre №3/775 Wattmeter Д5106 Reg.№2370 dated 25.08.2010
- /241/ Verification certificat for standart metre №3/777 Amperemeter Д553 Reg.№98193 dated 28.08.2010
- /242/ Verification certificat for standart metre №3/778 Amperemeter Д5017 Reg.№51093 dated 25.08.2010
- /243/ Verification certificat for standart metre №3/779 Cymometer Ф506M Reg.№5664 dated 25.08.2010
- /244/ Verification certificat for standart metre №3/780 Tension divider P5/1 Reg.№1205 dated 25.08.2010
- /245/ Verification certificat for standart metre №3/781 Many-sided bypass P6 Reg.№3069 dated 25.08.2010
- /246/ Verification certificat for standart metre №3/834 Voltmeter Д50151 Reg.№5837 dated 30.08.2010
- /247/ Verification certificat for standart metre №3/835 Voltmeter Д50102 Reg.№216 dated 30.08.2010
- /248/ Verification certificat for standart metre №3/836 Cymometer Ф5041



- Reg.№16 dated 30.08.2010
- /249) Verification certificat for standart metre №3/837 Phasometer Д578 Reg.№862 dated 30.08.2010
  - /250) Verification certificate for measurement device №29-09/2160 Conductivity box P5054/2 Reg.№513 dated 24.11.2009
  - /251) Verification certificate for measurement device №29-09/2161 Conductivity box P5054/2 Reg.№541 dated 24.11.2009
  - /252) Verification certificate for measurement device №29-09/2178 Tension box MH-1200/100 Reg.№011 dated 25.11.2009
  - /253) Verification certificate for measurement device №29-09/2180 Conductivity box P5054/1 Reg.№811 dated 25.11.2009
  - /254) Verification certificate for measurement device №29-10/0069 Conductivity box P5054/1 Reg.№805 dated 20.01.2010
  - /255) Verification certificate for measurement device №3/1310 Current transformer T-066 Y3 Reg.№245303, 432193, 567342 (3 units) dated 01.12.2010
  - /256) Verification certificate for measurement device №3/1311 Current transformer T-066 Y3 Reg.№28319, 28069, 28109 (3 units) dated 01.12.2010
  - /257) Verification certificate for measurement device №3/1312 Current transformer ТВЛМ-10 Reg.№22113, 28191 (2 units) dated 01.12.2010
  - /258) Verification certificate for measurement device №3/1313 Current transformer ТВПМ-10 Reg.№55770, 50479 (2 units) dated 01.12.2010
  - /259) Verification certificate for measurement device №3/1314 Current transformer ТВМ-10 Reg.№44113, 41687 dated 01.12.2010
  - /260) Verification certificate for measurement device №3/1315 Tension transformer НАМИ-10 Reg.№6823 dated 01.12.2010
  - /261) Verification certificate for measurement device №3/355 Tension transformer ЗНОМ-35-6541 Reg.№1410145, 1410143, 1412116 (3 units) dated 07.05.2009
  - /262) Verification certificate for measurement device №3/378 Current transformer ТФ3М-35 Reg.№19672, 19734 (2 units) dated 04.06.2008
  - /263) Verification certificate for measurement device №3/439 Electricity supply meter calibration facility Y1134 Reg.№6623 dated 08.06.2010
  - /264) Verification certificate for measurement device №3/505 Current transformers И515М/1 Reg.№18120, 13263, 15892 (3 units) dated 14.07.2009
  - /265) Verification certificate for measurement device №3/506 Current transformers И515М/1 Reg.№012298, 11890, 01295 (3 units) dated 14.07.2009
  - /266) Verification certificate for measurement device №3/536 Electricity supply meter calibration facility Y1134 Reg.№6642 dated 16.07.2010



- /267, Verification certificate for measurement device №3/620 Wattmeter Д566/100 Reg.№14854 dated 28.07.2010
- /268, Verification certificate for measurement device №3/621 Wattmeter Д566/100 Reg.№19873 dated 28.07.2010
- /269, Verification certificate for measurement device №3/622 Wattmeter Д566/100 Reg.№54978 dated 28.07.2010
- /270, Verification certificate for measurement device №3/623 Mechanical second counter COC Reg.№5983, 3626 (2 units) dated 28.07.2010
- /271, Verification certificate for measurement device №3/624 Mechanical second counter COC Reg.№1379, 9380, 7993 (3 units) dated 28.07.2010
- /272, Verification certificate for measurement device №3/625 Wattmeter Д539 Reg.№32617 dated 28.07.2010
- /273, Verification certificate for measurement device №3/626 Wattmeter Д539 Reg.№65657, 56401, 7383 (3 units) dated 28.07.2010
- /274, Verification certificate for measurement device №3/721 Wattmeter Д5068 Reg.№2173 dated 09.08.2010
- /275, Verification certificate for measurement device №3/769 Combined numerical device Щ4300 Reg.№0114 dated 19.08.2010
- /276, Verification certificate for measurement device №3/778 Wattmeter Д5070 Reg.№2368 dated 25.08.2010
- /277, Verification certificate for measurement device №3/782 Bypass 75ЩСМ Reg.№221475 dated 25.08.2010
- /278, Verification certificate for measurement device №3/821 Current transformer ТЛМ-10 Reg.№9959, 9262 dated 27.11.2008
- /279, Verification certificate for measurement device №3/822 Tension transformer НТМ(і)-10 Reg.004 dated 27.11.2008
- /280, Verification certificate for measurement device №3/823 Current transformer ТФ3М-35 Reg.№19672, 19734 (2 units) dated 27.11.2008
- /281, Verification certificate for measurement device №3/824 Current transformer ТПОФ-10 Reg.№106727, 106383, 101333 (3 units) dated 27.11.2008
- /282, Verification certificate for measurement device №3/825 Current transformer ТПОФ-10 Reg.№106758, 101327, 106377 (3 units) dated 27.11.2008
- /283, Verification certificate for measurement device №3/826 Current transformer ТПОФ-10 Reg.№106379, 101332, 106741 (3 units) dated 27.11.2008
- /284, Verification certificate for measurement device №3/827 Current transformer ТЛМ-10 Reg.№1765 dated 27.11.2008
- /285, Verification certificate for measurement device №3/828 Current transformer ТПЛМ-10 Reg.№5786 dated 27.11.2008
- /286, Verification certificate for measurement device №3/834 Tension transformer НТМИ-10 Reg.№620514, 312 (2 units) dated 28.11.2008



- /287, Verification certificate for measurement device №3/835 Current transformer TФ3M-110 Reg.№21422, 21409 (2 units) dated 28.11.2008
- /288, Verification certificate for measurement device №3/836 Current transformer TФ3M-110 Reg.№19849, 18690 (2 units) dated 28.11.2008
- /289, Verification certificate for measurement device №3/837 Tension transformer HKФ-110 Reg.№994040, 994088, 994090 (3 units) dated 28.11.2008
- /290, Verification certificate for measurement device №3/838 Tension transformer HKФ-110 Reg.№995010, 995025, 995022 (3 units) dated 28.11.2008
- /291, Volumes of supplementary activities on investment programm realization for 2003-2004

**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/ Kovach V. I. - General Director
- /2/ Bilak O. O. - Deputy General Director - Technical Director
- /3/ Onysko O. I. - Director of Economics and Finance
- /4/ Gabor O. M. - Director of energydistribution
- /5/ Kovach S. V. - Director of Investments and technical support of production
- /6/ Kisyuk V. S. - Director of the safety - Head of Department of Labor
- /7/ Habchak E. B. - Director of Capital Construction
- /8/ Khokhlov V. B. - Deputy Technical Director
- /9/ Slyvka J. Yu. - Deputy Technical Director of High Voltage networks
- /10/ Stehnach N. V. - Deputy Technical Director of Information Technology
- /11/ Talapko S. B. - Deputy Director of OP PB - Chief of PB
- /12/ Malosh I. M. - Deputy Director energydistribution to work with household consumers - head of department on work with household consumers
- /13/ Gusak S. M. - Deputy Director energydistribution and legal issues
- /14/ Popovych A. V. - Deputy Director on technical issues of energydistribution
- /15/ Lesio I. P. - Deputy Director of General Affairs - Head of VMTP
- /16/ Rzhhanov D. – representative of Carbon Management Company GmbH

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## APPENDIX A: DETERMINATION PROTOCOL

**Table 1 Check list for determination, according JOINT IMPLEMENTATION DETERMINATION AND VERIFICATION MANUAL (Version 01)**

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
<b>General description of the project</b>				
<b>Title of the project</b>				
-	Is the title of the project presented?	Reduction of Process Losses in Power Lines Zakarpattyaoblenergo PJSC	OK	OK
-	Is the sectoral scope to which the project pertains presented?	Sectoral Scope: (2) Energy Distribution	OK	OK
-	Is the current version number of the document presented?	PDD version number: 2.0	OK	OK
-	Is the date when the document was completed presented?	Data of Completion: 15/09/2011	OK	OK
<b>Description of the project</b>				
-	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)?	<u>Corrective Action Request (CAR) 01:</u> Please use in the PDD font size provided «JOINT IMPLEMENTATION PROJECT DESIGN DOCUMENT FORM» - version 01.	CAR01	OK
-	Is the history of the project (incl. its JI component) briefly summarized?	<u>Corrective Action Request (CAR) 02:</u> Please provide brief description of the project history.	CAR02	OK
<b>Project participants</b>				
-	Are project participants and Party(ies) involved in the project listed?	Project participants and parties listed in the table in section A.3 of PDD. Parties Project: Ukraine (host country), Poland.		



## DETERMINATION REPORT

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		<u>Corrective Action Request (CAR) 03:</u> Please provide brief information about the company "Imex Energo", sp. z o. o. in section A.3, and relevant information about this company in Annex 1.	CAR03	OK
-	Is the data of the project participants presented in tabular format?	<u>Corrective Action Request (CAR) 04:</u> Table A.3 in the PDD must be submitted in a format that provided in the version 04 of the "Guidelines for users of the JI PDD form".	CAR04	OK
-	Is contact information provided in Annex 1 of the PDD?	Contact information on project participants listed in Annex 1 to PDD.	OK	OK
-	Is it indicated, if it is the case, if the Party involved is a host Party?	Yes, it is indicated, if it is the case, if the Party involved is a host Party	OK	OK
<b>Technical description of the project</b>				
<b>Location of the project</b>				
-	Host Party(ies)	Ukraine	OK	OK
-	Region/State/Province etc.	The project is located in the Onokivtsi village and Zakarpattya region of Ukraine	OK	OK
-	City/Town/Community etc.	Onokivtsi village	OK	OK
-	Detail of the physical location, including information allowing the unique identification of the project. (This section should not exceed one page)	The project is introduced on the Zakarpattyaoblenergo PJSC establishments located in Zakarpattya regions. Zakarpattya region is located in the south-eastern part of Ukraine within the western part of the Carpathians and the Zakarpattya lowlands (coordinates of main office: 22°20'28.55" eastern longitude 48°39'15.75" northern latitude). In the north it borders on Lviv region, in the east – on Ivano-Frankivsk region. In the south it borders on Romania, in the south-west – on Hungary, in the west – on Slovakia, in the north-west – on Poland. Region area is 12777 sq.km. Population - 1254614 people  Also see. Section A.4.1.4 PDD.	CAR05	OK





## DETERMINATION REPORT

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		<u>Corrective Action Request (CAR) 05:</u> Section A.4.1.4 more than 1 page.		
<b>Technologies to be employed, or measures, operations or actions to be implemented by the project</b>				
-	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 project include implementing program of technology power losses reduction in Zakarpattyaoblenergo PJSC power networks which includes a number of technical and organizational measures listed in section A.4.2 PDD.  <u>Corrective Action Request (CAR) 06:</u> Implementation schedule is not described.	CAR06	OK
<b>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</b>				
-	Is it stated how anthropogenic GHG emission reductions are to be achieved? (This section should not exceed one page)	Reduction of technological losses of electricity in the power network of the company has reduced CO2 emissions that resulted due to the generation of lost electricity.	OK	OK
-	Is it provided the estimation of emission reductions over the crediting period?	<u>Clarification Request (CL) 01:</u> Please include in this section refer to the corresponding «Excel» file with the calculations.  <u>Clarification Request (CL) 02:</u> Please number the tables with information of the estimates (calculations) of emission reductions.	CL01  CL02	OK  OK
-	Is it provided the estimated annual reduction for the chosen credit period in tCO2e?	Yes, the estimated annual reduction for the chosen credit period in tCO2e is provided.	OK	OK
-	Are the data from questions above presented in tabular format?	Yes.	OK	OK
<b>Estimated amount of emission reductions over the crediting period</b>				
-	Is the length of the crediting period Indicated?	Yes, leight of crediting period is 22 years (264 months).	OK	OK
-	Are estimates of total as well as annual and average annual emission reductions in tonnes	Yes, estimates of total as well as annual and average annual emission reductions in tonnes of CO2 equivalent provided in	OK	OK



## DETERMINATION REPORT

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	of CO2 equivalent provided?	section A.4.3.1 of PDD.		
<b>Project approvals by Parties</b>				
19	Have the DFPs of all Parties listed as "Parties involved" in the PDD provided written project approvals?	<u>Clarification Request (CL) 03:</u> Section A.5 PDD must specify the name DFPs (parties involved) that will approve the project.	CL03	OK
19	Does the PDD identify at least the host Party as a "Party involved"?	Yes, Ukraine is the Host Party.	OK	OK
19	Has the DFP of the host Party issued a written project approval?	<u>Corrective Action Request (CAR) 07:</u> No Letters of Approval of the project issued by the parties involved.	CAR07	OK
20	Are all the written project approvals by Parties involved unconditional?	See CAR07 above.	OK	OK
<b>Authorization of project participants by Parties involved</b>				
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?	See CAR07 above.	OK	OK
<b>Baseline setting</b>				
22	Does the PDD explicitly indicate which of the following approaches is used for identifying the baseline? – JI specific approach – Approved CDM methodology approach	<u>Clarification Request (CL) 04:</u> Please specify which approach was used to identify the baseline scenario and additionality: • JI specific approach • Approved CDM methodology approach.  <u>Corrective Action Request (CAR) 08:</u> Please provide date of baseline setting according required	CL04          CAR08	OK          OK



## DETERMINATION REPORT

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		format DD/MM/YYYY.		
<b>Jl specific approach only</b>				
23	Does the PDD provide a detailed theoretical description in a complete and transparent manner?	Yes, the PDD provide a detailed theoretical description in a complete and transparent manner.	OK	OK
23	Does the PDD provide justification that the baseline is established: (a) By listing and describing plausible future scenarios on the basis of conservative assumptions and selecting the most plausible one? (b) Taking into account relevant national and/or sectoral policies and circumstance? – Are key factors that affect a baseline taken into account? (c) In a transparent manner with regard to the choice of approaches, assumptions, methodologies, parameters, data 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?	In the PDD in a reasonable way showed that the baseline was determined by compiling a listing and description of real scenarios of future scenarios based on conservative assumptions and subsequent selection the most attractive of these scenarios.	OK	OK
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	To determine the baseline scenario and demonstrate additionality comparable case with positively determined JI project “Modernization of electric power distribution system at PJSC “PC “Zhytomyroblenergo” was used in accordance with option 3 point 9(a) (JI specific approach) of	OK	OK



## DETERMINATION REPORT

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	supplementary developed by the project participants in line with 23 above?	the JI Guidance on criteria for baseline setting and monitoring, version 03		
25	If a multi-project emission factor is used, does the PDD provide appropriate justification?	For baseline emissions calculations were used CO2 emission factor for the projects of reducing electricity consumption for it transmission by Ukrainian electricity networks. All factors are justified.	OK	OK
<b>Approved CDM methodology approach only</b>				
26 (a)	Does the PDD provide the title, reference number and version of the approved CDM methodology used?	N/A	OK	OK
26 (a)	Is the approved CDM methodology the most recent valid version when the PDD is submitted for publication? If not, is the methodology still within the grace period (was the methodology revised to a newer version in the past two months)?	N/A	OK	OK
26 (b)	Does the PDD provide a description of why the approved CDM methodology is applicable to the project?	N/A	OK	OK
26 (c)	Are all explanations, descriptions and analyses pertaining to the baseline in the PDD made in accordance with the referenced approved CDM methodology?	N/A	OK	OK
26 (d)	Is the baseline identified appropriately as a result?	N/A	OK	OK
<b>Additionality</b>				
<b>JI specific approach only</b>				
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	Section B.1 of the PDD the analysis of project additionality, which aims to demonstrate that the project scenario is not part of the specified baseline, and that the project will achieve GHG emissions reductions against to baseline. The analysis was performed based on the latest version of "JI	OK	OK



## DETERMINATION REPORT

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	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 CDM Executive Board".	Guidance on criteria for baseline setting and monitoring, version 03" which was approved by the CDM Executive Board and fully applied to JI projects.		
29 (a)	Does the PDD provide a justification of the applicability of the approach with a clear and transparent description?	Barriers analysis and common practice which applied considered are good practice of additionality demonstration of the project activity.	OK	OK
29 (b)	Are additionality proofs provided?	<u>Corrective Action Request (CAR) 09:</u> In the PDD does not specify how the registration of this project as JI project will help overcome identified technological barriers.	CAR09	OK
29 (c)	Is the additionality demonstrated appropriately as a result?	See CAR09 above.	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?	N/A	OK	OK
<b>Approved CDM methodology approach only</b>				
31 (a)	Does the PDD provide the title, reference number and version of the approved CDM	N/A	OK	OK



## DETERMINATION REPORT

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	methodology used?			
31 (b)	Does the PDD provide a description of why and how the referenced approved CDM methodology is applicable to the project?	N/A	OK	OK
31 (c)	Are all explanations, descriptions and analyses with regard to additionality made in accordance with the selected methodology?	N/A	OK	OK
31 (d)	Are additionality proofs provided?	N/A	OK	OK
31 (e)	Is the additionality demonstrated appropriately as a result?	N/A	OK	OK
<b>Project boundary (applicable except for JI LULUCF projects)</b>				
<b>JI specific approach only</b>				
32 (a)	Does the project boundary defined in the PDD encompass all anthropogenic emissions by sources of GHGs that are: (i) Under the control of the project participants? (ii) Reasonably attributable to the project? (iii) Significant?	Yes, the project boundary defined in line with all presented requirements.	OK	OK
32 (b)	Is the project boundary defined on the basis of a case-by-case assessment with regard to the criteria referred to in 32 (a) above?	Yes, the project boundary defined on the basis of a case-by-case assessment with regard to the criteria referred to in 32 (a) above.	OK	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?	Yes, project boundary represented the scheme form on Fig. 3a and 3b and in tabular form in Table 4.	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?	Clarification Request (CL) 05: Please change the title of fourth column Table 4 (Section B.3 PDD). Title "Included?" recommend changing the "Included/Excluded"  Clarification Request (CL) 06:	CL05  CL06	OK  OK



## DETERMINATION REPORT

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		Precise figures numbering in the PDD.  <u>Corrective Action Request (CAR) 10:</u> During site visit to the company Zakarpattyaoblenergo PJSC determination team found that some equipment implemented within project activities (eg circuit breakers) included insulating gas (SF6). Please include the insulating gas to the list of project emissions.	CAR10	OK
<b>Approved CDM methodology approach only</b>				
33	Is the project boundary defined in accordance with the approved CDM methodology?	N/A	OK	OK
<b>Crediting period</b>				
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?	01/07/2003 - Decisions of Board of Zakarpattyaoblenergo PJSC on the development and implementation of programs to reduce TPL (TVE)» (Protocol 10). This date is the date the acceptance of this project as a JI project.	OK	OK
34 (a)	Is the starting date after the beginning of 2000?	Yes.	OK	OK
34 (b)	Does the PDD state the expected operational lifetime of the project in years and months?	25 years (300 months)	OK	OK
34 (c)	Does the PDD state the length of the crediting period in years and months?	22 years (264 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?	Yes, starting date of the crediting period is after the date the first emission reductions are generated.	OK	OK
34 (d)	Does the PDD state that the crediting period for issuance of ERUs starts only after the beginning of 2008 and does not extend beyond the operational lifetime of the project?	<u>Clarification Request (CL) 07:</u> Please specify that the crediting period of ERUs generating started after the beginning of 2008 and continuing over the life cycle.	CL07	OK
34 (d)	If the crediting period extends beyond 2012, does the PDD state that the extension is subject to the host Party approval?	<u>Clarification Request (CL) 08:</u> Please specify that crediting period extension beyond 2012 requires approval by the Host country.	CL08	OK



## DETERMINATION REPORT

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	Are the estimates of emission reductions or enhancements of net removals presented separately for those until 2012 and those after 2012?			
<b>Monitoring plan</b>				
35	Does the PDD explicitly indicate which of the following approaches is used? – JI specific approach – Approved CDM methodology approach	<u>Clarification Request (CL) 09:</u> It seems that the in PDD used JI specific approach for monitoring plan identification, but it is not explicitly indicated. Please clearly clarify in PDD what approach was used.	CL09	OK
<b>JI specific approach only</b>				
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 approach of monitoring developed for this project corresponds to assumptions and practices used in the baseline approach. This approach to monitoring requires monitoring and measurement of variables and parameters necessary for quantitative determination of baseline and project emission levels in transparent manner.  <u>Clarification Request (CL) 10:</u> Please provide justification for choosing of the each used parameters.	CL10	OK
36 (b)	Does the monitoring plan specify the indicators, constants and variables used that are reliable, valid and provide transparent picture of the emission reductions or enhancements of net removals to be monitored?	See CL10 above.	OK	OK
36 (b)	If default values are used: – Are accuracy and reasonableness carefully balanced in their selection? – Do the default values originate from recognized sources? – Are the default values supported by statistical analyses providing reasonable confidence	<u>Corrective Action Request (CAR) 11:</u> Used TPL rate include technical and commercial consumption and losses. Commercial losses have no impact on GHG emissions and must be excluded from calculations.	CAR11	OK





## DETERMINATION REPORT

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	levels? – Are the default values presented in a transparent manner?			
36 (b) (i)	For those values that are to be provided by the project participants, does the monitoring plan clearly indicate how the values are to be selected and justified?	Yes. All procedures of selection and justification of necessary values are described.	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?	<u>Corrective Action Request (CAR) 12:</u> Please specify who is responsible for providing actual value of CO2 emission factor for the projects of reducing electricity consumption for it transmission by Ukrainian electricity networks.	CAR12	OK
36 (b) (iii)	For all data sources, does the monitoring plan specify the procedures to be followed if expected data are unavailable?	<u>Corrective Action Request (CAR) 13:</u> Please indicate in PDD that the data monitored and required for the project determination will be kept for two years after the last transfer of ERUs the project.	CAR13	OK
36 (b) (iv)	Are International System Unit (SI units) used?	Yes.	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?	Yes, Emission factors for the projects of reducing electricity consumption for it transmission by Ukrainian electricity networks used to calculate baseline emissions but are obtained through monitoring.	OK	OK
36 (b) (v)	Is the use of parameters, coefficients, variables, etc. consistent between the baseline and monitoring plan?	Yes, use of parameters, coefficients, variables, etc. is consistent between the baseline and monitoring plan.	OK	OK
36 (c)	Does the monitoring plan draw on the list of standard variables contained in appendix B of “Guidance on criteria for baseline setting and monitoring”?	Yes monitoring plan developed in line with “Guidance on criteria for baseline setting and monitoring”.	OK	OK
36 (d)	Does the monitoring plan explicitly and clearly distinguish: (i) Data and parameters that are not monitored	Yes, all relevant parameters are described (see section D.1 of PDD).	OK	OK



## DETERMINATION REPORT

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), and that are available already at the stage of determination? (ii) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), but that are not already available at the stage of determination? (iii) Data and parameters that are monitored throughout the crediting period?			
36 (e)	Does the monitoring plan describe the methods employed for data monitoring (including its frequency) and recording?	The table in section D.1.1 PDD defined time (regularity) of monitoring and information sources with respect to all parameters and data to be monitored.	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?	In the PDD described and explained all the algorithms and formulas used to calculating emissions for the baseline and project scenarios.	OK	OK
36 (f) (i)	Is the underlying rationale for the algorithms/formulae explained?	Yes, all necessary algorithms and formulae are clearly described.	OK	OK
36 (f) (ii)	Are consistent variables, equation formats, subscripts etc. used?	Yes, all variables, equation format, subscripts etc. used consistent.	OK	OK
36 (f) (iii)	Are all equations numbered?	Yes.	OK	OK
36 (f) (iv)	Are all variables, with units indicated defined?	Yes.	OK	OK
36 (f) (v)	Is the conservativeness of the algorithms/procedures justified?	See CAR11 above.	OK	OK
36 (f) (v)	To the extent possible, are methods to quantitatively account for uncertainty in key	The level of uncertainty of data specified in the table of quality control and quality assurance procedures (see	OK	OK



## DETERMINATION REPORT

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	parameters included?	Section D.2 of PDD).  Taken into account that all used data and parameters are defined according to current and accepted standards and methods based on official data and results of measurements by calibrated measuring equipment with the relevant accuracy their level of uncertainty is defined as low.		
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?	Yes.	OK	OK
36 (f) (vii)	Are any parts of the algorithms or formulae that are not self-evident explained?	No, all algorithms and formulas clearly explained	OK	OK
36 (f) (vii)	Is it justified that the procedure is consistent with standard technical procedures in the relevant sector?	Yes.	OK	OK
36 (f) (vii)	Are references provided as necessary?	All necessary references provided.	OK	OK
36 (f) (vii)	Are implicit and explicit key assumptions explained in a transparent manner?	Yes, all implicit and explicit assumptions explained in a transparent manner.	OK	OK
36 (f) (vii)	Is it clearly stated which assumptions and procedures have significant uncertainty associated with them, and how such uncertainty is to be addressed?	Used assumptions and procedures not have significant uncertainty.	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?	Uncertainty range was defined as low.	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?	The monitoring plan identified a national and international monitoring standards applied to proposed project. All relevant references provided.	OK	OK



## DETERMINATION REPORT

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	Does the monitoring plan provide a reference as to where a detailed description of the standard can be found?			
36 (h)	Does the monitoring plan document statistical techniques, if used for monitoring, and that they are used in a conservative manner?	See CAR11 above.	OK	OK
36 (i)	Does the monitoring plan present the quality assurance and control procedures for the monitoring process, including, as appropriate, information on calibration and on how records on data and/or method validity and accuracy are kept and made available upon request?	The quality assurance and control procedures described in section D.2 of PDD.	OK	OK
36 (j)	Does the monitoring plan clearly identify the responsibilities and the authority regarding the monitoring activities?	Yes, the responsibilities and the authority regarding the monitoring activities are clearly identified in section D.3 of PDD. See CAR12 above.	OK	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?	<u>Corrective Action Request (CAR) 14:</u> Section D.1.5 of the PDD requires from project participants to submit information about collection and archiving data on the environment impact as well as references to relevant norms of the host country. Please provide relevant data.	CAR14	OK
36 (l)	Does the monitoring plan provide, in tabular form, a complete compilation of the data that need to be collected for its application, including data that are measured or sampled and data that are collected from other sources but not including data that are calculated with equations?	Yes, all used parameters presented in sections D.1.1.1 and D.1.1.3 of PDD.	OK	OK
36 (m)	Does the monitoring plan indicate that the data monitored and required for verification are to be kept for two years after the last transfer of ERUs for the project?	See CAR13 above.	OK	OK
37	If selected elements or combinations of	No any selected elements or combinations of approved CDM	OK	OK



## DETERMINATION REPORT

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	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?	methodologies or methodological tools used in monitoring plan.		
<b>Approved CDM methodology approach only</b>				
38 (a)	Does the PDD provide the title, reference number and version of the approved CDM methodology used?	N/A	OK	OK
38 (a)	Is the approved CDM methodology the most recent valid version when the PDD is submitted for publication? If not, is the methodology still within the grace period (was the methodology revised to a newer version in the past two months)?	N/A	OK	OK
38 (b)	Does the PDD provide a description of why the approved CDM methodology is applicable to the project?	N/A	OK	OK
38 (c)	Are all explanations, descriptions and analyses pertaining to monitoring in the PDD made in accordance with the referenced approved CDM methodology?	N/A	OK	OK
38 (d)	Is the monitoring plan established appropriately as a result?	N/A	OK	OK
<b>Applicable to both JI specific approach and approved CDM methodology approach</b>				
39	If the monitoring plan indicates overlapping monitoring periods during the crediting period: (a) Is the underlying project composed of clearly identifiable components for which emission reductions or enhancements of removals can be calculated independently?	There are no overlapping monitoring periods during the crediting period.	OK	OK



## DETERMINATION REPORT

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	(b) Can monitoring be performed independently for each of these components (i.e. the data/parameters monitored for one component are not dependent on/effect data/parameters to be monitored for another component)? (c) Does the monitoring plan ensure that monitoring is performed for all components and that in these cases all the requirements of the JI guidelines and further guidance by the JISC regarding monitoring are met? (d) Does the monitoring plan explicitly provide for overlapping monitoring periods of clearly defined project components, justify its need and state how the conditions mentioned in (a)-(c) are met?			
<b>Leakage</b>				
<b>JI specific approach only</b>				
40 (a)	Does the PDD appropriately describe an assessment of the potential leakage of the project and appropriately explain which sources of leakage are to be calculated and which can be neglected?	No leakage is expected in proposed project activity.	OK	OK
40 (b)	Does the PDD provide a procedure for an ex ante estimate of leakage?	No leakage is expected in proposed project activity.	OK	OK
<b>Approved CDM methodology approach only</b>				
41	Are the leakage and the procedure for its estimation defined in accordance with the approved CDM methodology?	N/A	OK	OK
<b>Estimation of emission reductions or enhancements of net removals</b>				
42	Does the PDD indicate which of the following approaches it chooses? (a) Assessment of emissions or net removals in	Assessment of emissions or net removals in the baseline scenario and in the project scenario was used.	OK	OK



## DETERMINATION REPORT

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	the baseline scenario and in the project scenario (b) Direct assessment of emission reductions			
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?	Emissions for the project, baseline scenario and emission reductions were ex ante estimated. Results of estimations provided in section E of PDD and excel spreadsheets.	OK	OK
44	If the approach (b) in 42 is chosen, does the PDD provide ex ante estimates of: (a) Emission reductions or enhancements of net removals (within the project boundary)? (b) Leakage, as applicable? (c) Emission reductions or enhancements of net removals adjusted by leakage?	N/A	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	See CAR11 above.  <u>Corrective Action Request (CAR) 15:</u> In ex-ante calculations were used CO2 emission factor for the projects of reducing electricity consumption for it transmission by Ukrainian electricity networks provided in Order #43 dated 28/03/2010. But this factor applicable only for 2010. Please correct.	CAR15	OK



## DETERMINATION REPORT

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	<p>estimates in 43 or 44 consistent throughout the PDD?</p> <p>(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?</p> <p>(d) Are data sources used for calculating the estimates in 43 or 44 clearly identified, reliable and transparent?</p> <p>(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?</p> <p>(f) Is the estimation in 43 or 44 based on conservative assumptions and the most plausible scenarios in a transparent manner?</p> <p>(g) Are the estimates in 43 or 44 consistent throughout the PDD?</p> <p>(h) Is the annual average of estimated emission reductions or enhancements of net removals calculated by dividing the total estimated emission reductions or enhancements of net removals over the crediting period by the total months of the crediting period and multiplying by twelve?</p>			
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?	Yes, the PDD include an illustrative ex ante emissions calculation.	OK	OK
<b>Approved CDM methodology approach only</b>				





## DETERMINATION REPORT

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
47 (a)	Is the estimation of emission reductions or enhancements of net removals made in accordance with the approved CDM methodology?	N/A	OK	OK
47 (b)	Is the estimation of emission reductions or enhancements of net removals presented in the PDD: <ul style="list-style-type: none"> <li>– On a periodic basis?</li> <li>– At least from the beginning until the end of the crediting period?</li> <li>– On a source-by-source/sink-by-sink basis?</li> <li>– For each GHG?</li> <li>– In tones of CO<sub>2</sub> equivalent, using global warming potentials defined by decision 2/CP.3 or as subsequently revised in accordance with Article 5 of the Kyoto Protocol?</li> <li>– Are the formula used for calculating the estimates consistent throughout the PDD?</li> <li>– Are the estimates consistent throughout the PDD?</li> <li>– Is the annual average of estimated emission reductions or enhancements of net removals calculated by dividing the total estimated emission reductions or enhancements of net removals over the crediting period by the total months of the crediting period and multiplying by twelve?</li> </ul>	N/A	OK	OK
<b>Environmental impacts</b>				
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?	<u>Corrective Action Request (CAR) 16:</u> There is no information on transboundary impacts in the PDD.	CAR16	OK



## DETERMINATION REPORT

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
48 (b)	If the analysis in 48 (a) indicates that the environmental impacts are considered significant by the project participants or the host Party, does the PDD provide conclusion and all references to supporting documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party?	No significant environmental impacts related to project implementation expected. Therefore separate environmental impact is not required.	OK	OK
<b>Stakeholder consultation</b>				
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?	Procedures of Ukraine did not require consultations with stakeholders for proposed project. However, information on implementation measures of reducing technological power losses provided in the media and in electronic media (see section G of PDD). No negative stakeholders' comments were received on company address.	OK	OK
<b>Determination regarding small-scale projects (additional elements for assessment)</b>				
<b>Applicable to bundled JI SSC projects only</b>				
<b>Applicable to all JI SSC projects</b>				
<b>Determination regarding land use, land-use change and forestry projects (additional/alternative elements for assessment)</b>				
<b>Determination regarding programmes of activities (additional/alternative elements for assessment)</b>				



## DETERMINATION REPORT

**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
<u>Corrective Action Request (CAR) 01:</u> Please use in the PDD font size provided «JOINT IMPLEMENTATION PROJECT DESIGN DOCUMENT FORM» - version 01.	-	Font size was corrected in line with «JOINT IMPLEMENTATION PROJECT DESIGN DOCUMENT FORM» - version 01. See PDD version 2.0.	PDD version 2.0 was checked and recognized as satisfactory. Issue is closed.
<u>Corrective Action Request (CAR) 02:</u> Please provide brief description of the project history.	-	Brief description of the project history was provided in section A.2 of PDD version 2.0.	Issue is closed due to the amendments made in the PDD.
<u>Corrective Action Request (CAR) 03:</u> Please provide brief information about the company "Imex Energo", sp. z o. o. in section A.3, and relevant information about this company in Annex 1.	-	Brief information about the company "Imex Energo", sp. z o. o. in section A.3, and in Annex 1.  Update: In PDD version 4.0 Carbon Management Company GmbH is a project participant instead of "Imex Energo", sp. z o. o	The issue is closed due to the corrections made.
<u>Corrective Action Request (CAR) 04:</u> Table A.3 in the PDD must be submitted in a format that provided in the version 04 of the "Guidelines for users of the JI PDD form".	-	Table A.3 corrected.	Issue closed.
<u>Corrective Action Request (CAR) 05:</u> Section A.4.1.4 more than 1 page.	-	Section A.4.1.4 was corrected.	CAR05 is closed




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**DETERMINATION REPORT**


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<u>Corrective Action Request (CAR) 06:</u> Implementation schedule is not described.	-	Implementation sheudle was described in PDD version 2.0.	CAR06 is closed based on the amendments made in the PDD.
<u>Corrective Action Request (CAR) 07:</u> No Letters of Approval of the project issued by the parties involved.	Item 19	the written project approvals has been provided to AIE	Closed
<u>Corrective Action Request (CAR) 08:</u> Please provide date of baseline setting according required format DD/MM/YYYY.	Item 22	Date of baseline setting was corrected.	The response to CAR08 was found satisfactory. CAR08 is closed.
<u>Corrective Action Request (CAR) 09:</u> In the PDD does not specify how the registration of this project as JI project will help overcome identified technological barriers.	Item 29(b)	Technological barrier was excluded from PDD.	The issue is closed due to the corrections made.
<u>Corrective Action Request (CAR) 10:</u> During site visit to the company Zakarpattyaoblenergo PJSC determination team found that some equipment implemented within project activities (eg circuit breakers) included insulating gas (SF6). Please include the insulating gas to the list of project emissions scenario.	Item 32(d)	Insulating gas (SF6), used in circuit breakers and other equipment Zakarpattyaoblenergo PJSC is toxic and is listed as gas circulation and utilization of which is under the control of state environment organizations. Equipment containing Insulating gas is hermetically sealed and prevents leakage of gas into the atmosphere. In the case of it failure or decommissioning SF6 will be collected and reused by filling in new similar equipment. In connection with all the above SF6 emissions were excluded from the calculations.	CAR10 is closed based on the provided information.



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<p><u>Corrective Action Request (CAR) 11:</u> Used TPL rate include technical and commercial consumption and losses. Commercial losses have no impact on GHG emissions and must be excluded from calculations.</p>	Item 36(b)	Monitoring plan was corrected. All non-technical and metrological losses were excluded from calculations. See PDD version 2.0 and Excel file ZAK-15TBE-2002-2010-18-09-2011-km-KП-ok.	PDD version 2.0 and Excel file were checked and recognized as satisfactory. Issue is closed.
<p><u>Corrective Action Request (CAR) 12:</u> Please specify who is responsible for proniding actual value of CO2 emission factor for the projects of reducing electricity consumption for it transmission by Ukrainian electricity networks.</p>	Item 36(b)(ii)	Actuality of factor of specific indirect carbon dioxide emissions associated with the consumption of electricity during its transmission by power grids of Ukraine will be reviewed annually representatives Technical Consultant Ltd «EES».	The issue is closed due to the corrections made.
<p><u>Corrective Action Request (CAR) 13:</u> Please indicate in PDD that the data monitored and required for the project determination will be kept for two years after the last transfer of ERUs the project.</p>	Item 36(b)(iii)	PDD was corrected. See PDD version 2.0	The response to CAR13 was found satisfactory. CAR13 is closed.
<p><u>Corrective Action Request (CAR) 14:</u> Section D.1.5 of the PDD requires from project participants to submit information about collection and archiving data on the environment impact as well as references to relevant norms of the host country. Please provide relevant data.</p>	Item 36(k)	The project implementation does not require gathering of information on the influence on the environment in excess of information collected at the company prior to the project inception.	The issue is closed due to the corrections made.
<p><u>Corrective Action Request (CAR) 15:</u> In ex-ante calculations were used CO2 emission factor for the projects of reducing electricity consumption for it transmission by Ukrainian electricity networks provided in Order #43 dated 28/03/2010. But this factor applicable only for 2010. Please correct.</p>	Item 45	Data was updated.	The response was found satisfactory. CAR15 is closed.



## DETERMINATION REPORT

<u>Corrective Action Request (CAR) 16:</u> There is no information on transboundary impacts in the PDD.	Item 48(a)	Transboundary impact is not expected.	Issue closed.
<u>Clarification Request (CL) 01:</u> Please include in this section refer to the corresponding «Excel» file with the calculations.	-	Relevant references were included to PDD version 2.0.	The issue is closed based on the corrections made in the PDD.
<u>Clarification Request (CL) 02:</u> Please number the tables with information of the estimates (calculations) of emission reductions.	-	Tables were numbered.	Necessary corrections have been made. The issue is closed.
<u>Clarification Request (CL) 03:</u> Section A.5 PDD must specify the name DFPs (parties involved) that will approve the project.	Item 19	State Environmental Investment Agency of Ukraine is DFP of Ukraine and Ministry of the Environment of Poland is DFP of Poland.  Update: In PDD version 4.0 Switzerland is mentioned as Investor Party, instead of Poland. Federal Department of the Environment, Transport, Energy and Communications of Switzerland is a DFP of Investor Party respectively.	CL03 is closed based on the amendments made in the PDD.
<u>Clarification Request (CL) 04:</u> Please specify which approach was used to identify the baseline scenario and additionality: • JI specific approach • Approved CDM methodology approach.	Item 22	JI specific approach was used.	Issue closed.
<u>Clarification Request (CL) 05:</u> Please change the title of fourth column Table 4 (Section B.3 PDD). Title "Included?" recommend changing the "Included/Excluded"	Item 32(d)	Was corrected.	Issue closed.



## DETERMINATION REPORT

<u>Clarification Request (CL) 06:</u> Precise figures numbering in the PDD.	Item 32(d)	Figures numbers were checked and corrected.	Issue is closed due to the amendments made in the PDD.
<u>Clarification Request (CL) 07:</u> Please specify that the crediting period of ERUs generating started after the beginning of 2008 and continuing over the life cycle.	Item 34(d)	Relevant information was included to section C.3 of PDD version 2.0.	Due to the corrections made and necessary information provided, the issue is closed.
<u>Clarification Request (CL) 08:</u> Please specify that crediting period extension beyond 2012 requires approval by the Host country.	Item 34(d)	Relevant information was included to section C.3 of PDD version 2.0.	CL08 is closed based on the amendments made in the PDD.
<u>Clarification Request (CL) 09:</u> It seems that the in PDD used JI specific approach for monitoring plan identification, but it is not explicitly indicated. Please clearly clarify in PDD what approach was used.	Item 35	JI specific approach was used for developing monitoring plan.	The issue is closed based on the corrections made in the PDD.
<u>Clarification Request (CL) 10:</u> Please provide justification for choosing of the each used parameters.	Item 36(a)	Justification for choosing of the each used parameters provided.	The issue is closed based on the corrections made in the PDD.