DETERMINATION REPORT
CEP CARBON EMISSIONS PARTNERS S.A.

DETERMINATION OF THE
Implementation of energy-saving light sources in the public, corporate and private sectors of Ukraine

REPORT NO. UKRAINE-DET/0724/2012

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BUREAU VERITAS CERTIFICATION

DETERMINATION REPORT

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Client: CEP Carbon Emissions Partners S.A.	Client ref.: Fabian Knodel

Summary:
Bureau Veritas Certification has made the determination of the "Implementation of energy-saving light sources in the public, corporate and private sectors of Ukraine" project of CEP CARBON EMISSIONS PARTNERS S.A., located in Ukraine, on the basis of UNFCCC criteria for the JI, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 6 of the Kyoto Protocol, the JI rules and modalities and the subsequent decisions by the JI Supervisory Committee, as well as the host country criteria.

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

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

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

Report No.:	Subject Group:
UKRAINE-DET /0724/2012	JI

Project title:
Implementation of energy-saving light sources in the public, corporate and private sectors of Ukraine

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1 INTRODUCTION

CEP CARBON EMISSIONS PARTNERS S.A. has commissioned Bureau Veritas Certification to determine its JI project “Implementation of energy-saving light sources in the public, corporate and private sectors of Ukraine” (hereafter called “the project”) located in Ukraine.

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

1.1 Objective

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

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

1.2 Scope

The determination scope is defined as an independent and objective review of the project design document, the project’s baseline, the monitoring plan and other relevant documents. The information in these documents meets the Kyoto Protocol requirements, UNFCCC rules and associated interpretation.
The determination is not meant to provide any consulting towards clients. However, stated requests for clarifications and/or corrective, forward action requests may provide input for improvement of the project design.

1.3 Determination team

The determination team consists of the following personnel:

Viacheslav Yeriomin
Bureau Veritas Certification Team Leader, Climate Change Lead Verifier

Volodymyr Kulish
Bureau Veritas Certification Team member, Climate Change Lead Verifier

Denys Pishchalov
Bureau Veritas Certification Team Member, Financial Specialist

This determination report was reviewed by:

Ivan Sokolov
Bureau Veritas Certification Internal Technical Reviewer

2 METHODOLOGY

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

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

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

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

2.1 Review of Documents

The Project Design Document (PDD) was submitted by CEP CARBON EMISSIONS PARTNERS S.A. together with such additional documents related to the project design and baseline as: host country Law, Guidelines for users of the joint implementation project design document form and Guidance on criteria for baseline setting and monitoring, the Kyoto Protocol, Clarifications on Determination Requirements to be checked by an Accredited Independent Entity.

To address Bureau Veritas Certification corrective action, forward action and clarification requests, CEP CARBON EMISSIONS PARTNERS S.A. revised the PDD version 01 of 16/08/2012 and resubmitted it on 28/09/2012 as version 02.
The determination findings presented in this report relate to the project as described in the PDD versions 01 and 02.

2.2 Follow-up Interviews

On 27/09/2012 Bureau Veritas Certification performed on-site interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of PE "FOSA" and CEP CARBON EMISSIONS PARTNERS S.A. were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview Topics

Interviewed organization	Interview topics
PE "FOSA"	➢ Project History ➢ Project approach ➢ Project boundary ➢ Implementation schedule ➢ Organizational Structure ➢ Responsibilities and obligations ➢ Personnel training ➢ Quality control procedures and technologies ➢ Modernization / installation of equipment (records) ➢ Control over metering equipment ➢ System of measurements record-keeping, database ➢ Technical Documentation ➢ Monitoring Plan and procedures ➢ Permits and licenses ➢ Stakeholders' response
CEP Carbon Emissions Partners S.A.	➢ Baseline methodology ➢ Monitoring plan ➢ Additionality proofs ➢ Calculations of emission reductions ➢ Project design ➢ Legal issues relating to the project ➢ Environmental impacts ➢ Approval by the host party

2.3 Resolution of Clarification and Corrective Action Requests

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

Corrective Action Request (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 issue Clarification Request (CL), if information is insufficient or not clear enough to determine whether the applicable JI requirements have been met.

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

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 main objective of the project “Implementation of energy-saving light sources in the public, corporate and private sectors of Ukraine” is improvement of energy-saving characteristics of Ukraine’s lighting systems as well as improvement of the environmental situation in the country by distributing energy-efficient lighting equipment, namely compact fluorescent and LED lamps, to replace incandescent lamps.

PE "FOSA” was founded in 2006. Prior to the start of the project activity, PE "FOSA” was involved into the same type of activity as after the beginning of the project, i.e. distribution/sale of energy-saving lighting equipment. Dostribution rates did not show major growth (for causes see PDD Section B.2), and the project levels of reduction in electricity consumption was unachievable. Thus, the reduction of GHG emissions from electricity consumption by private and commercial sectors was unremarkable. Although compact fluorescent lights (CFL) were introduced to the Ukrainian market as early as in 2004, they have failed to replace incandescent lamps as the largest component (around 80%) of the Ukrainian lighting stock. Incandescent light bulbs are extremely inefficient, as approximately 98% of energy consumed is emitted as heat. The operational life of incandescent lights is about 1000 hours, but they have a tendency towards early failure due to certain design features (namely the glowing filament). Among the alternatives to incandescent lights there are light-emitting diode (LED) lights and CFLs, which have much higher efficiency and operational life; moreover, their ligting mode is more comfortable for a human eye. Yet, rather high prices of these alternative light sources against those of incandescent lights, combined with low income level of an average citizen of Ukraine (in 2010, the average consolidated financial wealth per adult Ukrainian was USD 947) prevented these technologies from wide distribution in the country.

The proposed JI project will utilise one of two types of incentives or their combination for LED and CFL distribution:

1) Discount;

The customers receive CFLs free of charge or at a heavily discounted price.

2) Rebate;

The customers pay full price of CFLs upfront and then are reimbursed gradually after certain time periods in several instalments.

The incentives can vary for different types of consumers according to the marketing policies of the project, and can be up to 50% or free of charge. In any case, the average (of all CFLs and LED lamps distributed within the project for any given year) incentive will be no less than 50% of the average market price of a CFL and LED lams for that particular year.

To bridge the cost differential between the market price of the CFLs and the price at which they are distributed to the consumers, the JI mechanisms of Kyoto Protocol are harnessed. The project owner would cover the project cost through sale of GHG emission reductions.

Activities implemented within the project framework (see Section A.4.2. below) as well as constant monitoring will reduce electricity and, as a result, fossil fuel consumption at a conventional power plant, which altogether will ensure a reduction of GHG emissions into the atmosphere.

PE “FOSA” has all licenses and permits to implement the project.

Necessary equipment for the project is planned to be purchased from leading Ukrainian and European manufacturers on a tender basis.

Historical details of the JI project “Implementation of energy-saving light sources in the public, corporate and private sectors of Ukraine”

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11|02|2008 – the starting date of the project, when PE "FOSA" started to implement activities within the framework of the Joint Implementation Project.

15/08/2012 – preparation and submission of the project idea note to support anthropogenic GHG emission reductions, to the State Environmental Investment Agency of Ukraine.

20/09/2012 – obtaining of a Letter of Endorsement No.2675/23/7 from the State Environmental Investment Agency of Ukraine.

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 35 Corrective Action Requests and 8 Clarification Requests.

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

4.1 Project approvals by Parties involved (19-20)

The project “Implementation of energy-saving light sources in the public, corporate and private sectors of Ukraine” has already been supported by the Government of Ukraine: Letter of Endorsement No.2675/23/7, issued by the State Environmental Investment Agency of Ukraine on 20/09/2012.
Bureau Veritas Certification received this letter from the project participants and does not doubt its authenticity.
Upon completion of the Determination Report the project design document will be submitted to the State Environmental Investment Agency of Ukraine for receiving a Letter of Approval.
As the project has no approval by the Host Party, CAR 20 remains pending and will be closed after report finalizing (see Appendix A).
The identified areas of concern as to the project approval, project participants’ response and Bureau Veritas Certification’s conclusion are described in Appendix A to Determination Report (refer to CAR 20).

4.2 Authorization of project participants by Parties involved (21)

The participation for each of the legal entities listed as project participants in the PDD will be authorized by the Parties involved, through the written Letters of Approval (from the government of Switzerland as the country-participant, and from Ukraine as the host party). See Section 4.1 of this report.

4.3 Baseline setting (22-26)

The PDD explicitly indicates that using a methodology for baseline setting and monitoring developed in accordance with Appendix B of the JI Guidelines (hereinafter referred to as JI specific approach) was the selected approach for identifying the baseline (in accordance with the Guidance on criteria for baseline setting and monitoring (Version 03)).
None of the existing methodologies can be applied for the proposed project aimed at the reduction of electricity consumption. The project participant has chosen a JI-specific approach in accordance with paragraph 9 (a) of the Guidance on criteria for baseline setting and monitoring, Version 03, and the consolidated methodology AM0046 “Distribution of efficient light bulbs to households" Version 02.
The PDD provides a detailed theoretical description in a complete and transparent manner, as well as justification, that the baseline was 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 current situation, without the JI project implementation.

b. Proposed project activity without the use of the JI mechanism.
c. Partial implementation of the project (only some of project activities implemented) without the use of the JI mechanism.

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

a. The sector of energy-efficient equipment is not among the main priorities of Ukrainian government strategy. Generally, Ukraine is among the least energy-efficient countries in Europe. Ukraine's energy sector is responsible for 69% of the total greenhouse gases emissions, including emissions from electricity generation. Energy-efficient lighting has even lower level of priority than energy-efficient measures associated with heat supply. Power consumption for lighting is no so seasonal as heating, and energy-efficiency affects electricity generation and distribution. Thus, Ukraine has a potential for the development and implementation of new energy-efficient technologies, including energy-efficient lighting. Although there is no reliable statistical data vailable, the estimates are that over 20% of electricity generated in Ukraine is used for lighting. The Government of Ukraine supports activities on energy-efficiency improvement by taking certain regulatory measures, but a lack of funds prevents large-scale energy-efficiency programmes from implementation. In accordance with the priorities of the Government, this project deals with the problem of greenhouse emission reduction by large-scale transition to energy-efficient lighting in private and commercial sectors of Ukraine.

b. Given the existing lighting equipment market and overall economic situation in the country, it is impossible to fully meet the demand for energy-efficient products. Existing market mechanisms and targeted administrative measures don't provide for the necessary modernization and upgrading of the existing lighting systems. The situation has become especially critical taking account of the growing needs of population and commercial sector for inexpensive high-quality lighting, which have been to this point met with incandescence light bulbs. The low price of the latter makes them much more affordable than CFLs and LED lamps.

c. The structure of tariffs for lighting equipment is regulated by market mechanisms; the prices, which are justified by innovativeness and efficiency, are too high for the Ukrainian consumer. This causes the potential consumer to refuse from energy-efficient lighting, so commercial and private sectors continue to use incandescent light bulbs.

d. State support in the energy-efficient lighting sector is provided in amounts of funds provided by the law of Ukraine on State Budget of Ukraine for the relevant year.

e. The implementation of the project scenario requires risks associated with lower profit due to major discounts, which is unfeasible from the economic standpoint.

f. Ukraine does not implement any projects on energy-efficient lighting without the money earned by sale of emission reduction units.

The PDD provides a detailed description in a complete and transparent manner, as well as justification, that the baseline was duly set.
The methods of calculation used to determine the ex-ante and ex-post baseline emissions, are sufficiently described in Sections E and D of the PDD, respectively.

The identified areas of concern as to the baseline, project participants' response and Bureau Veritas Certification's conclusion are described in Appendix A to Determination Report (refer to CAR 21 – CAR 25; CL 05).

4.4 Additionality (27-31)

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

The PDD provides a justification of the applicability of the approach with a clear and transparent description, as per item 4.3 above.

The developer of the project proved that anthropogenic emissions under the project are lower than the emissions that would take place in the absence of the project activity.
Additionality proofs are provided.
Three plausible and realistic alternative scenarios of the project were identified:

- Alternative 1.1: Continuation of the current situation, without the JI project implementation.
- Alternative 1.2: Proposed project activity without the use of the JI mechanism.
- Alternative 1.3: Partial implementation of the project (only some of project activities implemented) without the use of the JI mechanism.

and the mandatory compliance of the scenarios with the legislation and legal acts was demonstrated.
According to the "Tool for the demonstration and assessment of additionality" (Version 06.0.0) barrier analysis and common practice analysis were used in the PDD to justify additionality of the project.
Thus, the overall conclusion is that the project activity meets the criteria of additionality, is not a baseline scenario and is additional.

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

The identified areas of concern as to the additionality, project participants' response and Bureau Veritas Certification's conclusion are described in Appendix A to Determination Report (refer to CAR 26 – CAR 27; CL 06).

4.5 Project boundary (32-33)

The project boundary includes: All CFLs and LED lights installed as part of the project activity. For distinctive identification of all energy-saving lights installed within the project framework.
The project boundary encompasses all anthropogenic emissions by sources of GHGs that are:

(i) Under the control of the project participants, such as:
- CO_2 emissions from electricity consumption by energy-saving lights (CFLs and LED lights) to meet lighting demand.

(ii) Reasonably attributable to the project, such as:
- CO_2 emissions from electricity consumption by incandescent light bulbs to meet lighting demand.

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

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

4.6 Crediting period (34)

The PDD states the starting date of the project as the date on which the activities on CFL and LED lights distribution started as part of the JI project, and the starting date is 11/02/2008, which is after the beginning of 2000.

The PDD states the expected operational lifetime of the project in years and months, which is 14 years and 11 months, or 179 months – from February 11, 2008, to December 31, 2022.

The PDD states the length of the crediting period in years and months, which is 14 years and 11 months, or 179 months, and its starting date of the crediting period is 11/02/2008, which is the date the first emission reductions are expected to be generated by the project.

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

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

The identified areas of concern as to the crediting period, project participants' response and Bureau Veritas Certification's conclusion are described in Appendix A to Determination Report (refer to CAR 28, CAR 29)

4.7 Monitoring plan (35-39)

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

The monitoring plan describes all 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 reporting forms, operational structure and management structure of the enterprise that will be applied when implementing the monitoring plan.

The monitoring plan specifies the indicators, constants and variables that are reliable (i.e. provide consistent and accurate values), valid (i.e. 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: total number of CFLs which replaced incandescent light bulbs in consumer group in monitoring period of the project scenario; total number of LED lights which replaced incandescent light bulbs in consumer group in monitoring period of the project scenario; power of incandescent light bulbs replaced by CFLs in customer group in monitoring period of the baseline scenario; power of incandescent light bulbs replaced by LED lights in customer group in monitoring period of the baseline scenario; average operating life of lighting equipment (lamps of every type and power) in customer group in monitoring period of the baseline scenario; power of CFLs which replaced incandescent light bulbs in customer group in monitoring period of the project scenario; power of LED lights which replaced incandescent light bulbs in customer group in monitoring period of the project scenario; average operating life of lighting equipment (lamps of every type and power) in customer group in monitoring period of the project scenario.

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, as appropriate, among which: baseline emissions (BE_y), project emissions (PE_y), CO_2 emission factor ($EF_{CO2,y}$).

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

a) Data and parameters that are not subject to monitoring during the crediting period but are identified only once and are available at the PDD development stage: none.

b) Data and parameters that are not controlled during the crediting period but are identified only once (and thus remain fixed for the crediting period) and are not available at the PDD development stage: none.

c) Data and parameters controlled during the whole crediting period:

$R^{y}_{p,k,n,j}$	Total number of *j*-type CFLs which replaced incandescent light bulbs in consumer group *n* in monitoring period *y* of the project scenario, dimensionless;
$R^{y}_{p,l,n,j}$	Total number of *j*-type LED lights which replaced incandescent light bulbs in consumer group *n* in monitoring period *y* of the project scenario, dimensionless;
$P^{y}_{b,k,n,j}$	Power of incandescent light bulbs replaced with *j*-type CFLs in consumer group *n* in monitoring period *y* of the baseline scenario, W;
$P^{y}_{b,l,n,j}$	Power of incandescent light bulbs replaced with *j*-type LED lights in consumer group *n* in monitoring period *y* of the baseline scenario, W;
$t^{y}_{on,b,n}$	Average operating life of lighting equipment (lamps of every type and power) in customer group *n* in monitoring period *y* of the baseline scenario, h;
$P^{y}_{p,k,n,j}$	Power of *j*-type CFLs which replaced incandescent light bulbs in consumer group *n* in monitoring period *y* of the project scenario, W;
$P^{y}_{p,l,n,j}$	Power of *j*-type LED lights which replaced incandescent light bulbs in consumer group *n* in monitoring period *y* of the project scenario, W;
$t^{y}_{on,p,n}$	Average operating life of lighting equipment (lamps of every type and power) in customer group *n* in monitoring period *y* of the project scenario, h;

The monitoring plan describes the methods applied for monitoring data (including its frequency) and record-keeping methods such as data archiving through accounting software.

The most objective and cumulative factor that provides a clear picture of whether the emission reduction took place is the fact of power consumption reduction through complex modernization of lighting systems. It can be defined as the difference between baseline emissions and GHG emissions after the project implementation.

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

Formulae used to estimate project emissions (for each gas, source etc.; emissions in units of CO_2equivalent):

$$PE^{y} = PEC_{p}^{y} \bullet EF_{p,CO_2,ELEC}^{y};$$ (1)

where:

PE^{y} – total GHG emissions in monitoring period *y* of the project scenario, t CO_2eq;

PEC_{p}^{y} - total electricity consumption in monitoring period *y* of the project scenario, MWh;

$EF_{p,CO_2,ELEC}^{y}$ - carbon dioxide emission factor for electricity consumption by consumers, in monitoring period *y* of the project scenario, t CO_2/MWh;

y - index for monitoring period;

p - index for baseline scenario;

CO_2 - index for carbon dioxide, or CO_2;

$ELEC$ - index for electricity.

$$PEC_{p}^{y} = \sum_{n=1}^{10} \sum_{j=1}^{m} \frac{R_{p,k,n,j}^{y} \bullet P_{p,k,n,j}^{y} \bullet t_{on,p,n}^{y} + R_{p,l,n,j}^{y} \bullet P_{p,l,n,j}^{y} \bullet t_{on,p,n}^{y}}{1000000};$$ (2)

where:

$R_{p,k,n,j}^{y}$ - total number of *j*-type CFLs which replaced incandescent light bulbs in consumer group *n* in monitoring period *y* of the project scenario, dimensionless;

$R_{p,l,n,j}^{y}$ - total number of *j*-type LED lights which replaced incandescent light bulbs in consumer group *n* in monitoring period *y* of the project scenario, dimensionless;

$P_{p,k,n,j}^{y}$ - power of *j*-type CFLs which replaced incandescent light bulbs in consumer group *n* in monitoring period *y* of the project scenario, W;

$P_{p,l,n,j}^{y}$ - power of *j*-type LED lights which replaced incandescent light bulbs in consumer group *n* in monitoring period *y* of the project scenario, W;

$t_{on,p,n}^{y}$ - average operating life of lighting equipment (lamps of every type and power) in customer group *n* in monitoring period *y* of the project scenario, h;
1000000 – Watt to MW conversion factor;

y - index for monitoring period;

p - index for baseline scenario;

j - index for the type of incandescent light bulbs replaced;

k - index for CFL;

l - index for LED lights;

l - index for customer group where CFL or LED lights were installed;

on - index for time in operation of lighting equipment.

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

$$BE^{y} = BEC_{b}^{y} \bullet EF_{b,CO_2,ELEC}^{y}; \quad (3)$$

where:

BE^{y} – total GHG emissions in monitoring period *y* of the baseline scenario, t CO_2eq;

BEC_{b}^{y} - total electricity consumption in monitoring period *y* of the baseline scenario, MWh;

$EF_{b,CO_2,ELEC}^{y}$ - carbon dioxide emission factor for electricity consumption by consumers, in monitoring period y of the baseline scenario, t CO_2/MWh;

y - index for monitoring period;

b - index for baseline scenario;

CO_2 - index for carbon dioxide, or CO_2;

$ELEC$ - index for electricity.

$$BEC_{b}^{y} = \sum_{n=1}^{10} \sum_{j=1}^{m} \frac{R_{p,k,n,j}^{y} \bullet P_{b,k,n,j}^{y} \bullet t_{on,b,n}^{y} + R_{p,l,n,j}^{y} \bullet P_{b,l,n,j}^{y} \bullet t_{on,b,n}^{y}}{1000000}; \quad (4)$$

where:

$R_{p,k,n,j}^{y}$ - total number of *j*-type CFLs which replaced incandescent light bulbs in consumer group *n* in monitoring period *y* of the project scenario, dimensionless;

$R_{p,l,n,j}^{y}$ - total number of *j*-type LED lights which replaced incandescent light bulbs in consumer group *n* in monitoring period *y* of the project scenario, dimensionless;

$P_{b,k,n,j}^{y}$ - power of incandescent light bulbs replaced with *j*-type CFLs in consumer group *n* in monitoring period *y* of the baseline scenario, W;

$P_{b,l,n,j}^{y}$ -power of incandescent light bulbs replaced with *j*-type LED lights in consumer group *n* in monitoring period *y* of the baseline scenario, W;

$t_{on,b,n}^{y}$ - average operating life of lighting equipment (lamps of every type and power) in customer group *n* in monitoring period *y* of the baseline scenario, h;
1000000 – Watt to MW conversion factor;

y - index for monitoring period;

b - index for baseline scenario;

j - index for the type of incandescent light bulbs replaced;

k - index for CFL;

l - index for LED lights;

l - index for customer group where CFL or LED lights were installed;

on - index for time in operation of lighting equipment.

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

No leakage is expected.

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

$$ER^y = (BE^y - PE^y) \quad (5)$$

ER^y – emission reductions due to the project activity in monitoring period *y* of the project scenario, t CO_2eq;

BE^y - total GHG emissions in monitoring period *y* of the baseline scenario, t CO_2eq;

PE^y – total GHG emissions in monitoring period *y* of the project scenario, t CO_2eq;

y - index for monitoring period.

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

The monitoring plan clearly establishes responsibility and authority in respect of monitoring actions. Collection of all key parameters for monitoring and calculation of GHG emission reductions is conducted according to the requirements of the Guidance on criteria for baseline setting and monitoring, Version 03, and consolidated methodology AM0046, version 2.0.

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

The monitoring plan provides a complete compilation of the data that need to be collected for its application, including data that are measured or sampled and data that are collected from other sources (for example, official statistics, experts' opinions, company's own data, IPCC, commercial and scientific literature, etc.) but not including data that are calculated with equations.

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

The identified areas of concern as to the monitoring plan, project participants' response and Bureau Veritas Certification's conclusion are described in Appendix A to Determination Report (refer to CAR 30 – CAR 34; CL 07, CL 08).

4.8 Leakage (40-41)

The PDD appropriately describes an assessment of the potential leakage of the project and appropriately explains which sources of leakage are to be calculated, and which can be neglected.

According to the specific approach selected, the PDD states that GHG emissions from leakage within and beyond the project boundary, which may result from the project activity, are not expected to increase.

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 1 680 898 tons of CO_2eq for 2008-2012, 17 471 624 tons of CO_2eq for 2013-2022;

(b) Leakage is not expected in the project boundary;

(c) Emissions for the baseline scenario (within the project boundary), which are 7 474 562 tons of CO_2eq for 2008-2012, 58 680 122 tons of CO_2eq for 2013-2022;

(d) Emission reductions adjusted by leakage (based on (a)-(c) above), which are 5 793 664 tons of CO2eq in 2008-2012, 41 208 498 tons of CO2eq in 2013-2022.

The estimates referred to above are given:

(a) on an annual basis;

(b) from 11/02/2008 to 31/12/2022, covering the entire crediting period;

(c) based on primary sources and sources;

(d) for each GHG, which is CO_2;

(e) in tonnes of CO_2 equivalent using global warming potentials defined by decision 2/CP.3 or as subsequently revised in accordance with Article 5 of the Kyoto Protocol.

The formulae used for calculating the estimates referred above are given in Section 4.7. All formulae are consistent throughout the PDD.
To calculate the above estimations such key factors as the Ukrainian environmental legislation and other national legislation, as well as key relevant factors such as availability of funds for implementation of measures envisaged by the project, tariffs that are set by the market mechanisms, modern technology and the ability to implement know-how in lighting equipment sphere, that affect the baseline emissions level, project activity level and level of emissions, as well as risks associated with the project were properly taken into account.

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

Emission factors such as carbon dioxide emission factor for electricity consumption by consumers, in monitoring period *y* of the baseline scenario, ($EF^{y}_{b,CO2,ELEC}$),carbon dioxide emission factor electricity consumption by consumers in monitoring period of the project scenario ($EF^{y}_{p,CO2,ELEC}$), were selected by careful balancing between accuracy and feasibility, and justified their choice.

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

The estimates referred to above are consistent throughout the PDD.

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

Detailed algorithms of calculations and their results are described in sections D, E and Supporting Documents to the PDD.

4.10 Environmental impacts (48)

Sections F.1. and F.2. of the PDD provide information about documentation on the analysis of the environmental impacts of the project, including transboundary impacts, in accordance with procedures as determined by the host Party.

The PDD states that EIA showed that LED lamps had no negative impact on the environment. CFLs contain a small amount of mercury inside glass tubing - 5 mg per bulb on average (corresponds to the size of a pen ballpoint).

In general, environmental impact of the project “Implementation of energy-saving light sources in the public, corporate and private sectors of Ukraine” can be assessed as permissible because of its insignificance. Project facilities are not included in the list of activities and facilities of environmental hazard.

The PDD provides opinions and references to supporting documents on environmental impact assessment, which is carried out in accordance with the procedures set by the host Party.

The problem issues revealed as to environmental impacts, comments of project participants and the opinion of Bureau Veritas Certification are described in Annex A of the Determination Report (refer to CAR 35).

4.11 Stakeholder consultation (49)

Since the project activity does not provide for any negative environmental or social impact, there was no necessity to hold special public discussions. Stakeholders were consulted with by local authorities at their meetings.

The programme for better efficiency of fuel and energy resources is spotlighted regularly in mass media.

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 “Implementation of energy-saving light sources in the public, corporate and private sectors of Ukraine” project in Ukraine. The determination was performed on the basis of UNFCCC criteria and host country criteria and also on the criteria given to provide for consistent project operations, monitoring and reporting.

The determination consisted of the following three phases: i) a desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project

stakeholders; iii) the resolution of outstanding issues and the issuance of the final determination report and opinion.

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

Emission reductions 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 determination revealed one pending issue related to the current determination stage of the project: the issue of the written approval of the project by the host Party (Ukraine). If the written approval by the host Country is provided, it is our opinion that the project as described in the Project Design Document, version 02 dated 28/09/2012 meets all the relevant UNFCCC requirements for the determination stage and the relevant host Country criteria as well as expectations of the stakeholders.

The review of the project design documentation (version 02 dated 28/09/2012) 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 CEP CARBON EMISSIONS PARTNERS S.A. that relate directly to the GHG components of the project.

/1/	PDD “Implementation of energy-saving light sources in the public, corporate and private sectors of Ukraine”, version 01 dated 16/08/2012
/2/	PDD “Implementation of energy-saving light sources in the public, corporate and private sectors of Ukraine”, version 02 dated 28/09/2012
/3/	Supporting Document 1. Calculation of GHG emissions in the period of 2008-2012 under the project “Implementation of energy-saving light sources in the public, corporate and private sectors of Ukraine”
/4/	Supporting Document 2. Calculation of GHG emissions in the period of 2013-2022 under the project “Implementation of energy-saving light sources in the public, corporate and private sectors of Ukraine”
/5/	Letter of Endorsement No.2675/23/7 issued by the State Environmental Investment Agency of Ukraine dated 20/09/2012.
/6/	Guidelines for users of the JI PDD form. Version 04, JISC.
/7/	Tool for the demonstration and assessment of additionality, Version 06.0.0
/8/	Kyoto Protocol
/9/	Marrakech Accords, JI Methods
/10/	National inventory report of anthropogenic emissions by sources and removals by sinks of greenhouse gases in Ukraine for 1990-2010
/11/	Ukraine’s Third National Communication on Climate Change under the Kyoto Protocol
/12/	Ukraine’s Fourth National Communication on Climate Change under the Kyoto Protocol
/13/	Ukraine’s Fifth National Communication on Climate Change under the Kyoto Protocol
/14/	Decree No.62 of the National Environmental Investment Agency of Ukraine (hereinafter NEIAU) dated 15/04/2011 “On approval of carbon dioxide emission factors for 2008”
/15/	NEIAU No.63 of 15/04/2011 "On approval of carbon dioxide specific emission values in 2009”
/16/	NEIAU No.43 of 28/03/2011 "On approval of carbon dioxide specific emission values in 2010”
/17/	NEIAU No.75 of 12/05/2011 "On approval of carbon dioxide specific emission values in 2011”
/18/	Law of Ukraine "On metrology and metrological activity”

/19/	Law of Ukraine "On atmosphere protection"
/20/	Law of Ukraine "On environmental protection"
/21/	JI Guidelines. Appendix to decision 9/CDM.1
/22/	JI Guidance for determination and verification, version 01
/23/	Guidance on criteria for baseline setting and monitoring, JISC. Version 03

Category 2 Documents:

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

/1/	Contract number 12-F-08211/1 of 11 February 2008 on the temporary usage of energy-saving CLL
/2/	Certificate of Acceptance and Transer for use CLL by 15/02/2008
/3/	Certificate of Acceptance and Transer for use CLL by 13/09/2011
/4/	Certificate of Acceptance and Transer for use CLL by 19/08/2010
/5/	Certificate of Acceptance and Transer for use CLL by 04/03/2008
/6/	Certificate of Acceptance and Transer for use CLL by 25/02/2008
/7/	Certificate of Acceptance and Transer for use CLL by 21/02/2008
/8/	Certificate of Acceptance and Transer for use CLL by 24/06/2010
/9/	Certificate of Acceptance and Transer for use CLL by 23/09/2011
/10/	Certificate of Acceptance and Transer for use CLL by 26/02/2008
/11/	Certificate of Acceptance and Transer for use CLL by 01/02/2010
/12/	Certificate of Acceptance and Transer for use CLL by 22/02/2008
/13/	Certificate of Acceptance and Transer for use CLL by 26/05/2008
/14/	Certificate of Acceptance and Transer for use CLL by 08/02/2011
/15/	Certificate of Acceptance and Transer for use CLL by 24/06/2008
/16/	Certificate of Acceptance and Transer for use CLL by 22/02/2008
/17/	Certificate of Acceptance and Transer for use CLL by 23/08/2011
/18/	Certificate of Acceptance and Transer for use CLL by 02/07/2010
/19/	Certificate of Acceptance and Transer for use CLL by 14/02/2008
/20/	Certificate of Acceptance and Transer for use CLL by 14/02/2008
/21/	Certificate of Acceptance and Transer for use CLL by 01/07/2010
/22/	Certificate of Acceptance and Transer for use CLL by 15/02/2008
/23/	Certificate of Acceptance and Transer for use CLL by 12/02/2008
/24/	Certificate of Acceptance and Transer for use CLL by 15/02/2008
/25/	Certificate of Acceptance and Transer for use CLL by 16/06/2010
/26/	Certificate of Acceptance and Transer for use CLL by 31/08/2011
/27/	Certificate of Acceptance and Transer for use CLL by 03/03/2008
/28/	Logger instruction (smart ware 11)
/29/	Photos of measuring works
/30/	Photos of measuring devices (лотера (smart ware 11))

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

	Name	Organisation	Title
/1/	Novak S.A.	PE "FOSA"	Director
/2/	Papaya P,B.	PE "FOSA"	Deputy Director
/3/	Mish V.G.	PE "FOSA"	Lead Engineer
/4/	Obuhov L.I.	PE "FOSA"	Manager
/6/	Repinetsky S.O.	"CEP" LLC	CEP CARBON EMISSIONS PARTNERS S.A. Consultant

APPENDIX A: COMPANY PROJECT DETERMINATION PROTOCOL

BUREAU VERITAS CERTIFICATION HOLDING SAS

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

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
Guidelines for Users of the JI PDD form Section A General description of the project				
A.1. Title of the project				
A.1	Is the title of the project presented?	**CAR 01.** PDD Section A.1 does not provide the title of the project.	**CAR 01**	OK
A.1	Is the sectoral scope to which the project pertains presented?	Sectoral scope: Sector 3 - Energy consumption.	OK	OK
A.1	Is the current version number of the document presented?	The current version of the document: PDD, Version 02 dated 28/09/2012. See Section A.1.	OK	OK
A.1	Is the date when the document was created presented?	The date when the document was created: 28/09/2012.	OK	OK
A.2. Description of the project				
A.2	Is the purpose of the project included with a concise, summarizing explanation (max. 1-2 pages) of the: a) Situation existing prior to the starting	The main objective of the project "Implementation of energy-saving light sources in the public, corporate and private sectors of Ukraine" is improvement of energy-	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	date of the project b) Baseline scenario and c) Project scenario (expected outcome, including a technical description)?	saving characteristics of Ukraine's lighting systems as well as improvement of the environmental situation in the country by distributing energy-efficient lighting equipment, namely compact fluorescent and LED lamps, to replace incandescent lamps. Under the project, PE "FOSA" will distribute 40 000 000 CFLs and 7 000 000 LED lights within the geographical boundary of Ukraine in the period of 2008-2022, to replace incandescent light bulbs. Installation of high-efficient light sources, i.e. LED lamps and CFLs, will cause lower electricity consumption, which, in turn, will push down fossil fuel consumption at conventional power plant, thus causing GHG emission reductions. The side effect of the project is saving of consumers' money due to lower cost of electricity. The project provides for the distribution of LED lamps and CFLs both among individuals (households) and legal entities (industrial, commercial, organizational and governmental entities). Detailed information on the baseline and project scenarios with technical description is provided in		

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
		Sections A.2 and A.4.2. of the PDD.		
A.2	Is the history of the project (incl. its JI component) briefly summarized?	**CAR 02.** In PDD Section A.2 please provide information on PE "FOSA" activity prior to the project. **CAR 03.** In PDD Section A.2 please provide the expansion of CFL abbreviation. **CAR 04.** The project title in PDD Section A.2 does not correspond to the Letter of Endorsement issued by SEIAU. **CL 01.** In PDD Section A.2. please provide information on the category of electricity consumers among which LED lamps and CFLs will be distributed.	**CAR 02** **CAR 03** **CAR 04** **CL 01**	OK OK OK OK
A.3. Project participants				
A.3	Are project participants and Party(ies) involved in the project listed?	Parties involved in the project: PE "FOSA" (Ukraine - the Host Party) and CEP Carbon Emissions Partners S.A. (Switzerland). **CAR 05.** In PDD Section A.3 please provide information on functions of project participants. **CAR 06.** In PDD Section A.3. please provide USREOU code of PE "FOSA". **CAR 07.** In PDD Section A.3 please provide information on the type of commercial activity of PE "FOSA".	**CAR 05** **CAR 06** **CAR 07**	OK OK OK
A.3	Is the data of the project participants	The data of the project participants is presented in	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	presented in tabular format?	tabular format.		
A.3	Is contact information provided in Annex 1 of the PDD?	Annex 1 to the PDD provides contact information of PE "FOSA", CEP Carbon Emissions Partners S.A. **CAR 08.** In table of Annex 1 to the PDD please provide phone, fax and e-mail address of Natalia Egorova. **CAR 09.** Please provide phone and e-mail of PE "FOSA".	**CAR 08** **CAR 09**	OK OK
A.3	Is it indicated, if it is the case, that the Party involved is a host Party?	Ukraine is the Host Party.	OK	OK
A.4 Technical description of the project				
Location of the project				
A.4.1.1	Host Party(ies)	Ukraine is the Host Party.	OK	OK
A.4.1.2	Region/State/Province etc.	All regions of Ukraine.	OK	OK
A.4.1.3	City/Town/Community etc.	The project activity will take place all over Ukraine.	OK	OK
A.4.1.4	Detail of the physical location, including information allowing the unique identification of the project. (This section should not exceed one page).	Information about location is given in Section A.4.1.4 of the PDD.	OK	OK
A.4.2. Technologies to be employed, or measures, operations or actions to be implemented by the project				
A.4.2	Are the technology(ies) to be employed, or measures, operations or actions to be	PDD Section A.4.2 provides the description of the main stages of the project implementation, the annual project	**CAR 10** **CAR 11**	OK OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	implemented by the project, including all relevant technical data and the implementation schedule described?	activities schedule, some relevant technical data relating to main equipment to be installed as well as project activities. Project engineering represents the current cutting-edge practice. **CAR 10.** References provided in Section A.4.2. are to web-sites of sellers of lighting equipment. Please provide references to web-sites of manufacturers. **CAR 11.** In CFL specifications, the reference to Table 3 is incorrect. Please provide the correct reference. **CAR 12.** The reference to Table 4 in the description of main advantages of CFL is incorrect. Please provide the correct reference. **CL 02.** Please provide data units for parameters in Table 2. **CAR 13.** In LED lamp specifications, the reference to Table 3 is incorrect. Please provide the correct reference. **CAR 14.** The reference to Table 1 in the description of main advantages of LED lamp is incorrect. Please provide the correct reference. **CL 03.** Please clarify whether the project equipment is planned to be replaced during the project activity. **CL 04.** Please clarify whether the project equipment is	**CAR 12** **CAR 13** **CAR 14** **CL 02** **CL 03** **CL 04**	OK OK OK OK OK OK OK OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
		in line with the global practice.		
A.4.3. Brief explanation of how the anthropogenic emissions of greenhouse gases by sources are to be reduced by the proposed JI project, including why the emission reductions would not occur in the absence of the proposed project, taking into account national and/or sectoral policies and circumstances				
A.4.3	Is it stated how anthropogenic GHG emission reductions are to be achieved? (This section should not exceed one page)	Given the market dynamics in the past years and taking account of the fact that Ukraine has not developed effective mechanisms to stimulate individual and commercial consumers to switch to energy-saving technologies, a conclusion can be made that in the absence of the JI project "Implementation of energy-saving light sources in the public, corporate and private sectors of Ukraine" incandescent light bulbs would remain the main light source, which would cause GHG emissions at the pre-project level. Installation of energy-efficient light sources, i.e. LED lamps and CFLs, will cause lower electricity consumption, which, in turn, will push down fossil fuel consumption at conventional power plants, thus causing GHG emission reductions.	OK	OK
A.4.3	Is it provided the estimation of emission reductions over the crediting period?	The estimation of emission reductions over the crediting period is provided in Section A.4.3.1. of the PDD. **CAR 15.** Table 6 of the PDD provides incorrect length of the crediting period.	**CAR 15** **CAR 16**	OK OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
		CAR 16. Annual average of estimated GHG emission reductions over the crediting period (2008-2012) is calculated incorrectly. **CAR 17.** Table 7 in PDD Section A.4.3.1 does not comply with the Guidelines for Users of the JI PDD form. **CAR 18.** Table 7 of the PDD provides incorrect length of the crediting period. **CAR 19.** Table 7 of PDD Section A.4.3.1 provides an incorrect value of average annual estimated emission reductions (incorrect approximation).		
A.4.3	Is it provided the estimated annual reduction for the chosen credit period in tCO_2e?	The estimated annual reduction for the first commitment period in tCO_2e is provided, as well as the estimated annual reduction for the period before and after the first commitment period within the project.	OK	OK
A.4.3	Are the data from questions above presented in tabular format?	Information for the credit period and after the credit period is presented in tabular format. See PDD (Version 04) Tables 6, 7, Section A.4.3.1.	OK	OK
A.4.3.1. Estimated amount of emission reductions over the crediting period				
A.4.3.1	Is the length of the crediting period Indicated?	The length of the crediting period is indicated in the PDD Section A.4.3.1. and Section C. See CAR 15, CAR 18.	OK	OK
A.4.3.1	Are estimates of total as well as annual and average annual emission reductions in	Total as well as annual and average annual emission reductions in tonnes of CO2 equivalent are provided in	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	tonnes of CO_2 equivalent provided?	accordance with the calculated values in the tables of Section A of PDD and the Supporting documents.		
Project approvals by Parties				
19	Have the DFPs of all Parties listed as "Parties involved" in the PDD provided written project approvals?	**CAR 20.** The project has no approval of the Host Party and the investing country. To obtain the Letter of Approval the final Determination report must be submitted to the State Environmental Investment Agency of Ukraine that includes this Determination Protocol and the list of sources of Reference Information. A Letter of Approval of Switzerland as the country-participant is not obtained at the current stage of the Project either. **CAR 20** issue will be closed after the Letter of Approval is issued by the Host Party and country-participant.	**CAR 20**	Pending decision.
19	Does the PDD identify at least the host Party as a "Party involved"?	The Host Party involved is Ukraine.	OK	OK
19	Has the DFP of the host Party issued a written project approval?	Reference to **CAR 20**.	**CAR 20**	Pending decision.
20	Are all the written project approvals by Parties involved unconditional?	Reference to **CAR 20**.	**CAR 20**	Pending decision.
Authorization of project participants by Parties involved				
21	Is each of the legal entities listed as project participants in the PDD authorized by a	Party involved 1: Ukraine (the Host Party), legal entity	**CAR 20**	Pending decision.

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	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? − Any other form of project participant authorization in writing, explicitly indicating the name of the legal entity?	is PE "FOSA". Party involved 2: Switzerland, legal entity is CEP Carbon Emissions Partners S.A. The project participants will be authorized in accordance with the relevant project approvals. Pending **CAR 20.**		
Baseline setting				
22	Does the PDD explicitly indicate which of the following approaches is used for identifying the baseline? − JI specific approach − Approved CDM methodology approach	The baseline chosen is described in Section B.1 of the PDD. A specific JI approach is used for setting the baseline.	OK	OK
JI specific approach only				
23	Does the PDD provide a detailed theoretical description in a complete and transparent manner?	The choice of the applicable baseline for the project is justified; theoretical description is provided in section B.1 of PDD version 02.	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 PDD provides a detailed theoretical description in a complete and transparent manner, as well as justification, that the baseline was established: (a) Identifying plausible future scenarios and choosing the most plausible one. As a result of evaluation of	**CAR 21** **CAR 22** **CAR 23** **CAR 24** **CL 05**	OK OK OK OK OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	the most plausible one? (b) Taking into account relevant national and/or sectoral policies and circumstance? − Are key factors that affect a baseline taken into account? (c) In a transparent manner with regard to the choice of approaches, assumptions, methodologies, parameters, date sources and key factors? (d) In a transparent manner with regard to the choice of approaches, assumptions, methodologies, parameters, date sources and key factors? (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?	several alternatives the most plausible of them have been identified and will be used as a baseline: - Alternative 1.1: Continuation of existing practice, without the JI project. - Alternative 1.2: The project activities without the use of the Joint Implementation mechanism. - Alternative 1.3: Partial project activities (some of the project activities are implemented) without the use of the Joint Implementation Mechanism. (b) taking account of such key factors as the Ukrainian environmental legislation and other national legislation, as well as key relevant factors such as availability of funds for implementation of measures envisaged by the project, tariffs that are set by the market mechanisms, modern technology and the ability to implement know-how in lighting equipment sphere, that affect the baseline emissions level, project activity level and level of emissions, as well as risks associated with the project. (c) In a transparent manner with regard to the choice of JI approach and assumptions, parameters, data sources and key factors for identifying initial conditions listed in tabular format in Section B.1. (d) Taking into account of uncertainties and using		

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
		conservative assumptions (e) In such a way that ERUs cannot be earned for decreases in activity levels outside the project or due to force majeure (f) By drawing on the list of standard variables. The baseline is identified, the description is given in Section B of the PDD. **CAR 21.** Please provide information on Alternative 1.3 in Section B.1. of the PDD. **CAR 22.** Please provide explanation to the divisor "1000000" in formula (B2). **CAR 23.** In Tables of Section B.1 provide the same explanations for $R^{y}_{p,k,n,j}$, $R^{y}_{p,l,n,j}$ parameters as in the formulae. **CAR 24.** In the description of $P^{y}_{b,k,n,j}$ parameter in tables of Section B.1 of the PDD, the reference to Table 4 is incorrect. **CL 05.** Please provide the reference to AM0046 methodology, version 2.0, in tables of Section B.1 of the PDD.		
24	If selected elements or combinations of approved CDM methodologies or methodological tools for baseline setting	None of the existing methodologies can be applied for the proposed project aimed at the reduction of electricity consumption.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	are used, are the selected elements or combinations together with the elements supplementary developed by the project participants in line with 23 above?			
25	If a multi-project emission factor is used, does the PDD provide appropriate justification?	When setting baseline the following factors are used: carbon dioxide emission factor for electricity consumption by consumers. Sources of data (to be) used are clearly identified in the PDD version 02. **CAR 25.** $EF^{y}_{b,CO2,ELEC}$ factor has two different explanations. Please make corresponding amendments.	**CAR 25**	OK
CDM methodology approach only				
Additionality				
JI specific approach only				
28	Does the PDD indicate which of the following approaches for demonstrating additionality is used? (a) Provision of traceable and transparent information showing the baseline was identified on the basis of conservative assumptions, that the project scenario is not part of the identified baseline scenario and that the project will lead to emission	The PDD indicates that the project scenario is not a part of the established baseline scenario. It is also stated that the project will lead to emission reductions. Additionality of the project activity is demonstrated and assessed in Section B.2. of the PDD using the "Tool for the demonstration and assessment of additionality" (Version 06.0.0). **CAR 26.** Please provide the description of the compliance of Alternative 1.3. with laws and	**CAR 26** **CAR 27**	OK OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	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".	regulations. **CAR 27.** The outcome of Sub-step 1b is followed by a mentioning that further justification of additionality shall be performed by means of investment analysis, whereas barrier analysis is actually used.		
29 (a)	Does the PDD provide a justification of the applicability of the approach with a clear and transparent description?	Detailed analysis described in Section A.4.3, B.1 and B.2, shows that emissions of the baseline scenario are likely to exceed emissions of the project scenario due to the implementation of project activities.	OK	OK
29 (b)	Are additionality proofs provided?	Yes. Refer to section B.2. of the PDD.	OK	OK
29 (c)	Is the additionality demonstrated appropriately as a result?	The fact that the project activity itself is not the baseline scenario is clearly demonstrated in sections A.2, B.1, B.2 of the PDD.	OK	OK
30	If the approach 28 (c) is chosen, are all explanations, descriptions and analyses	All explanations, descriptions and analyses are made in accordance with the newest version of the "Tools for	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	made in accordance with the selected tool or method?	the demonstration and assessment of additionality" (Version 06.0.0)		
Approved CDM methodology approach only_ Paragraphs 31(a) – 31(e)_Not applicable				
Project boundary (applicable except for JI LULUCF projects)				
JI specific approach only				
32 (a)	Does the project boundary defined in the PDD encompass all anthropogenic emissions by sources of GHGs that are: (i) Under the control of the project participants? (ii) Reasonably attributable to the project? (iii) Significant?	The project boundary defined in the PDD encompasses all anthropogenic emissions by sources of GHGs that are: (i) Under the control of the project participants, such as: - CO_2 emissions from electricity consumption by energy-saving lights (CFLs and LED lights) to meet lighting demand. (ii) Reasonably attributable to the project, such as: - CO_2 emissions from electricity consumption by incandescent light bulbs to meet lighting demand. (iii) Significant, i.e., as a rule of thumb, would by each source account on average per year over the crediting period for more than 1 per cent of the annual average anthropogenic emissions by sources of GHGs, or exceed an amount of		

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
		2,000 tonnes of CO_2 equivalent, whichever is lower.		
32 (b)	Is the project boundary defined on the basis of a case-by-case assessment with regard to the criteria referred to in 32 (a) above?	Project boundary is defined on the basis of case-by-case assessment of different emission sources.	OK	OK
32 (c)	Are the delineation of the project boundary and the gases and sources included appropriately described and justified in the PDD by using a figure or flow chart if it is possible?	Yes, the delineation of the project boundary and the gases and sources included are appropriately described and justified in the PDD by using a figure or a table?	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?	All gases and sources included are explicitly stated, and the exclusions of any sources related to the baseline or the project are appropriately justified.	OK	OK
Approved CDM methodology approach only_Paragraph 33_ Not applicable				
Crediting period				
34 (a)	Does the PDD state the starting date of the project as the date on which the implementation or construction or real action of the project will begin or began?	According to the Guidelines for users of JI PDD form (version 04), the starting date of the project is when PE "FOSA" started to implement activities on CFL and LED lamps within the framework of the Joint Implementation Project. **CAR 28.** The starting date of the project is incorrect (year).	**CAR 28**	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
34 (a)	Is the starting date after 2000?	The starting date is after 2000.	OK	OK
34 (b)	Does the PDD state the expected operational lifetime of the project in years and months?	The expected operational lifetime of the project in years and months is 14 years and 11 months / 179 months: from 01/01/2008 to 31/12/2022.	OK	OK
34 (c)	Does the PDD state the length of the crediting period in years and months?	The length of the crediting period in years and months is stated in Section C.3. **CAR 29.** PDD Section C.3 provides information on the crediting period two times.	**CAR 29**	OK
34 (c)	Is the starting date of the crediting period on or after the date of the first emission reductions or enhancements of net removals generated by the project?	The starting date of the crediting period is on the date when the first emission reductions are expected, namely February 11, 2008.	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?	ERU generation belongs to the first commitment period of 5 years (January 1, 2008 – December 31, 2012).	OK	OK
34 (d)	If the crediting period extends beyond 2012, does the PDD state that the extension is subject to the host Party approval? Are the estimates of emission reductions or enhancements of net removals presented separately for those until 2012 and those after 2012?	The PDD states that the prolongation of the crediting period beyond 2012 is subject to approval of the host party and estimation of emission reductions is presented separately for those until 2012 and those after 2012 in the relevant sections of the PDD. If after the first commitment period the Kyoto Protocol is prolonged, the crediting period under the project will	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
		be extended by 10 years/120 months until December 31, 2022.		
Monitoring plan				
35	Does the PDD clearly indicate which of the following approaches is used? − JI specific approach − Approved CDM methodology approach.	The proposed project uses a JI-specific approach in accordance with paragraph 9 (a) of the JI "Guidance on criteria for baseline setting and monitoring", Version 03 and consolidated methodology AM0046, version 2.0. **CL 06.** Please provide the reference to AM0046 methodology, version 2.0 in Section D.1 of the PDD.	OK	OK
JI specific approach only				
36 (a)	Does the monitoring plan describe: - All relevant factors and key characteristics that will be monitored? - The period in which they will be monitored? - All decisive factors for the control and reporting of project performance?	The monitoring plan specifies all decisive factors for the control and reporting of project performance: quality control (QC) and quality assurance (QA) procedures; operational and management structures that will be applied when implementing the monitoring plan.	**CAR 29**	OK
36 (b)	Does the monitoring plan specify the indicators, constants and variables used that are reliable, valid and provide transparent picture of the emission reductions or enhancements of net removals to be monitored?	The monitoring plan specifies indicators, constants and variables used that are reliable, valid and provide transparent picture of the emission reductions or enhancement of net removals to be monitored. Data to be monitored are presented in PDD Section D. **CAR 30.** In Section D.1.1, after data and parameters controlled throughout the crediting period, please	**CAR 30** **CAR 31** **CAR 32** **CL 07**	OK OK OK OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
		provide the explanation of *p* index. **CAR 31.** In Section D.1.1.3, provide the same description to $EF^{y}_{p,CO2,ELEC}$ factor as in formulae. **CAR 32.** In Section D.1.1.3, provide the same description to $R^{y}_{p,k,n,j}$, $R^{y}_{p,l,n,j}$ factor as in formulae. **CL 07.** Please number all the formulae.		
36 (b)	If defailt values are used: - Are accuracy and reasonableness carefully balanced in their selection? - Do the default values originate from recognized sources? - Are the default values supported by statistical analyses providing reasonable confidence levels? - Are the default values presented in a transparent manner?	Default values are provided in the table of Annex 3 to the PDD. They originate from recognized sources and are presented in a transparent manner.	OK	OK
36 (b) (i)	For those values that are to be provided by the project participants, does the monitoring plan clearly indicate how the values are to be selected and justified?	The monitoring plan clearly indicates how the values are to be selected and justified.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
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?	- Does the monitoring plan clearly indicate the precise references from which these values are taken? The conservativeness of the values provided is justified.	OK	OK
36 (b) (iii)	For all data sources, does the monitoring plan specify the procedures to be followed if expected data are unavailable?	Refer to section D of the PDD.	OK	OK
36 (b) (iv)	Are International System Unit (SI units) used?	The International System Units are used for some parameters.	OK	OK
36 (b) (v)	Does the monitoring plan note any parameters, coefficients, variables, etc. that are used to calculate baseline emissions or net removals but are obtained through monitoring?	Relevant data necessary for determining the baseline of anthropogenic emissions of greenhouse gases within the project boundary is presented in table D.1.1.3. of the PDD.	OK	OK
36 (b) (v)	Is the use of parameters, coefficients, variables, etc. consistent between the baseline and monitoring plan?	The use of parameters, coefficients and variables 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”?	The monitoring plan is identified on the basis of the Guidance on criteria for baseline setting and monitoring.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
36 (d)	Does the monitoring plan explicitly and clearly distinguish: (i) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), and that are available already at the stage of determination? (ii) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), but that are not already available at the stage of determination? (iii) Data and parameters that are monitored throughout the crediting period?	Monitoring plan explicitly distinguishes between all these three types of data and parameters. Refer to Section D.1. of the PDD. (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: none. (iii) Data and parameters that are monitored throughout the crediting period. (ii) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), but that are not already available at the stage of determination: none.	OK	OK
36 (e)	Does the monitoring plan describe the methods employed for data monitoring (including its frequency) and recording?	In tables of parameters provided in section D.1.1.1. of the PDD the time of monitoring (frequency) and the source of data to be used, as well as recording method are indicated for all the monitored parameters and data.	OK	OK
36 (f)	Does the monitoring plan elaborate all algorithms and formulae used for the estimation/calculation of baseline emissions/removals and project	All algorithms and formulae used for the estimation of baseline and project emissions are indicated and explained in the PDD.The description of formulae is	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	emissions/removals or direct monitoring of emission reductions from the project, leakage, as appropriate?	given in Section D of the PDD.		
36 (f) (i)	Is the underlying rationale for the algorithms/formulae explained?	Refer to Section 36 (f) of this table.	OK	OK
36 (f) (ii)	Are consistent variables, equation formats, subscripts etc. used?	Consistent variables, equation formats, subscripts etc. are used.	OK	OK
36 (f) (iii)	Are all equations numbered?	See **CL 07.**	OK	OK
36 (f) (iv)	Are all variables, with units indicated defined?	Yes. Refer to section D of the PDD.	OK	OK
36 (f) (v)	Is the conservativeness of the algorithms/procedures justified?	Yes, algorithms/procedures comply with state norms and are conservative. **CAR 33.** In Section D.1.5 of the PDD, the title of the decree of the Ministry of environmental protection is incorrect. **CL 08.** Please provide reference to the Decree of the Ministry of Environmental Protection of Ukraine "Standards of maximum permissible emissions of pollutants from stationary sources".	**CAR 33** **CL 08**	OK OK
36 (f) (v)	To the extent possible, are methods to quantitatively account for uncertainty in key parameters included?	Uncertainty in parameters used is low taking into account the algorithms of data monitoring.	OK	OK
36 (f) (vi)	Is consistency between the elaboration of the baseline scenario and the procedure for calculating the emissions or net	There is consistency between the elaboration on the baseline scenario and calculating the baseline emission in the monitoring plan and in tables.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	removals of the baseline ensured?			
36 (f) (vii)	Are any parts of the algorithms or formulae that are not self-evident explained?	The formulae used in the PDD are sufficiently described.	OK	OK
36 (f) (vii)	Is it justified that the procedure is consistent with standard technical procedures in the relevant sector?	Project monitoring is conducted according to the requirements of the Guidance on criteria for baseline setting and monitoring, Version 03, and consolidated methodology AM0046, version 2.0.	OK	OK
36 (f) (vii)	Are references provided as necessary?	All references are provided as necessary.	OK	OK
36 (f) (vii)	Are implicit and explicit key assumptions explained in a transparent manner?	All key assumptions are explained in a transparent manner.	OK	OK
36 (f) (vii)	Is it clearly stated which assumptions and procedures have significant uncertainty associated with them, and how such uncertainty is to be addressed?	N/A	OK	OK
36 (f) (vii)	Is the uncertainty of key parameters described and, where possible, is an uncertainty range at 95% confidence level for key parameters for the calculation of emission reductions or enhancements of net removals provided?	**CAR 34.** Please provide information on calibration of metering devices used in the project.	**CAR 34**	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 was set in accordance with the national rules and standards.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	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?	Yes.	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 monitoring plan presents the quality assurance and control procedures for the monitoring process, including information on calibration, official national data and methods of monitoring data collection and storage.	OK	OK
36 (j)	Does the monitoring plan clearly identify the responsibilities and the authority regarding the monitoring activities?	Detailed operational structure and management structure is provided in the Annex 3 of the PDD.	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	Monitoring under the project does not require changes in existing accounting system and data collection.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	applied?			
36 (l)	Does the monitoring plan provide, in tabular form, a complete compilation of the data that need to be collected for its application, including data that are measured or sampled and data that are collected from other sources but not including data that are calculated with equations?	Tables D.1.1.1 and D.1.1.3 provide compilation of all data needed to monitor project and baseline emissions.	OK	OK
36 (m)	Does the monitoring plan indicate that the data monitored and required for verification are to be kept for two years after the last transfer of ERUs for the project?	Data to be monitored and required for determination will be kept for two years after the last transfer of ERUs for the project.	OK	OK
37	If selected elements or combinations of approved CDM methodologies or methodological tools are used for establishing the monitoring plan, are the selected elements or combination, together with elements supplementary developed by the project participants in line with 36 above?	None of the existing methodologies can be applied for the proposed project aimed at the reduction of electricity consumption.	OK	OK
Approved CDM methodology approach only_Paragraphs 38(a) – 38(d)_Not applicable				
Applicable to both JI specific approach and approved CDM methodology approach				
39	If the monitoring plan indicates overlapping monitoring periods during the crediting	No periods to overlap during the crediting period are expected.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	period: (a) Is the underlying project composed of clearly identifiable components for which emission reductions or enhancements of removals can be calculated independently? (b) Can monitoring be performed independently for each of these components (i.e. the data/parameters monitored for one component are not dependent on/effect data/parameters to be monitored for another component)? (c) Does the monitoring plan ensure that monitoring is performed for all components and that in these cases all the requirements of the JI guidelines and further guidance by the JISC regarding monitoring are met? (d) Does the monitoring plan explicitly provide for overlapping monitoring periods of clearly defined project components, justify its need and state how the			

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	conditions mentioned in (a)-(c) are met?			
Leakage				
JI specific approach only				
40 (a)	Does the PDD appropriately describe an assessment of the potential leakage of the project and appropriately explain which sources of leakage are to be calculated and which can be neglected?	According to the specific approach, no leakage is expected.	OK	OK
40 (b)	Does the PDD provide a procedure for an ex ante estimate of leakage?	Reference to 40 (a).	OK	OK
Approved CDM methodology approach only_Paragraph 41_Not applicable				
Estimation of emission reductions or enhancements of net removals				
42	Does the PDD indicate which of the following approaches it chooses? (a) Assessment of emissions or net removals in the baseline scenario and in the project scenario (b) Direct assessment of emission reductions	In the PDD the approach of estimation of emissions in the baseline scenario and in the project scenario is indicated.	OK	OK
43	If the approach (a) in 42 is chosen, does the PDD provide ex ante estimates of: (a) Emissions or net removals for the project scenario (within the project boundary)?	PDD provides estimates of: (a) Emissions in the project scenario (Section E.1) (b) Leakage (Section E.2) (c) Emissions in the baseline scenario (Section E.4) (d) Emission reductions adjusted by leakage (Section E.6).	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	(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?			
44	If the approach (b) 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? (d) Emission reductions or enhancements of net removals adjusted by leakage?	N/A	N/A	N/A
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?	(a) Estimates in 43 are given on the periodic basis, in tonnes of CO_2 equivalent, on a source-by-source basis, before, during and after the crediting period. (b) The formulae used in PDD are consistent. (c) Key factors influencing baseline emissions and activity level of the project and risks associated with the project are taken into account, as appropriate. (d) Data sources used to calculate the estimates are clearly identified, reliable and transparent. (e) Emission factors were taken from the defined sources.	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	(v) In tonnes of CO_2 equivalent, using global warming potentials defined by decision 2/CP.3 or as subsequently revised in accordance with Article 5 of the Kyoto Protocol? (b) Are the formulae used for calculating the estimates in 43 or 44 consistent throughout the PDD? (c) For calculating estimates in 43 or 44, are key factors influencing the baseline emissions or removals and the activity level of the project and the emissions or net removals as well as risks associated with the project taken into account, as appropriate? (d) Are data sources used for calculating the estimates in 43 or 44 clearly identified, reliable and transparent? (e) Are emission factors (including default emission factors) if used for calculating the estimates in 43 or 44 selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice? (f) Is the estimation in 43 or 44 based on	(f) Estimation in 43 is based on conservative assumptions and the most plausible scenario in a transparent manner. (g) Estimates in 43 are consistent throughout the PDD. (h) The annual average of estimated emission reductions are calculated correctly (by dividing the total estimated emission reductions over the crediting period by the total months of the crediting period and multiplying by twelve).		

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	Final Conclusion
	conservative assumptions and the most plausible scenarios in a transparent manner? (g) Are the estimates in 43 or 44 consistent throughout the PDD? (h) Is the annual average of estimated emission reductions or enhancements of net removals calculated by dividing the total estimated emission reductions or enhancements of net removals over the crediting period by the total months of the crediting period and multiplying by twelve?			
46	If the calculation of the baseline emissions or net removals is to be performed de facto, does the PDD include an illustrative forecasted emissions or net removals calculation?	Baseline emissions are calculated based on the JI-specific approach. Forecasted emissions calculation is clearly provided in the PDD.	OK	OK
Approved CDM methodology approach only_Paragraphs 47(a) – 47(b)_Not applicable				
Environmental impacts				
48 (a)	Does the PDD list and attach documentation on the analysis of the environmental impacts of the project, including transboundary impacts, in accordance with procedures as determined by the host Party?	The environmental impacts of the project have been sufficiently described	OK	OK

Guidelines for Users of the JI PDD form or DVM Paragraph	Check Item	Initial finding	Project participants' actions review	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?	**CAR 35.** Please provide information on transboundary impacts of the project activity.	**CAR 35**	OK
Stakeholder consultations				
49	If stakeholder consultation was undertaken in accordance with the procedure as required by the host Party, does the PDD provide: (a) A list of stakeholders from whom comments on the projects have been received, if any? (b) The nature of the comments? (c) A description on whether and how the comments have been addressed?	Since the project activity does not provide for any negative environmental or social impact, there was no necessity to hold special public discussions. Stakeholders were consulted with by local authorities at their meetings. The programme for better efficiency of fuel and energy resources is spotlighted regularly in mass media: Numerous publications of company's employees in specialized national periodicals took place.	OK	OK
Determination regarding small-scale projects (additional elements for assessment)				
Determination regarding land use, land-use change and forestry projects (additional/alternative elements for assessment)				
Determination regarding programmes of activities (additional/alternative elements for assessment)				

TABLE 2 RESOLUTION OF CORRECTIVE ACTION AND CLARIFICATION REQUESTS

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
CAR 01. PDD Section A.1 does not provide the title of the project.	A.1	Implementation of energy-saving light sources in the public, corporate and private sectors of Ukraine	The issue is closed as relevant information is provided.
CAR 02. In PDD Section A.2 please provide information on PE "FOSA" activity prior to the project.	A.2	PE "FOSA" was founded in 2006. Prior to the start of the project activity, PE "FOSA" was involved into the same type of activity as after the beginning of the project, i.e. distribution/sale of energy-saving lighting equipment. Distribution rates did not show major growth (for causes see PDD Section B.2), and the project levels of reduction in electricity consumption was unachievable. Thus, the reduction of GHG emissions from electricity consumption by private and commercial sectors was unremarkable.	The relevant information is provided, the issue is closed.
CAR 03. In PDD Section A.2 please provide the expansion of CFL abbreviation.	A.2	Compact fluorescent lights (CFL). The abbreviation has been expanded in Section A.2 of the PDD.	The relevant information is provided, the issue is closed.
CAR 04. The project title in PDD Section A.2	A.2	Historical details of the JI project	The issue is closed as

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
does not correspond to the Letter of Endorsement issued by SEIAU.		"Implementation of energy-saving light sources in the public, corporate and private sectors of Ukraine" Relevant corrections have been made. Refer to section A.2. of the PDD.	corresponding corrections are made.
CAR 05. In PDD Section A.3 please provide information on functions of project participants.	A.3	PE "FOSA" is an organization that implements the project (Applicant).It is responsible for the design work performed by its own staff or through contractors. It finances the project and does not receive any income. CEP Carbon Emissions Partners S.A. is research and engineering organizations. They are responsible for the development of project design documents for the joint implementation project. Besides, they will participate in determination, monitoring and verification of the project.	The issue is closed as relevant information is provided.
CAR 07. In PDD Section A.3 please provide information on the type of commercial activity of PE "FOSA".	A.3	Type of activity: 46.47 Wholesale of furniture, carpets and lighting equipment; 46.90 Non-specialised wholesale trade; 70.22 Market research and public opinion polling companies; 46.19 Agents involved in the sale of a variety of goods.	The issue is closed as relevant information is provided.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
CAR 08. Intable of Annex 1 to the PDD please provide phone, fax and e-mail address of Natalia Egorova.	A.3	The relevant information is provided. See PDD version 02.	The issue is closed as corresponding data are added.
CAR 09. Please provide phone and e-mail of PE "FOSA".	A.3	The relevant information is provided. See PDD version 02.	The issue is closed as corresponding data are added.
CAR 10. References provided in Section A.4.2. are to web-sites of sellers of lighting equipment. Please provide references to web-sites of manufacturers.	A.4.2	Relevant references were provided in the PDD version 02.	References to web-sites of manufacturers are provided. The issue is closed.
CAR 11. In CFL specifications, the reference to Table 3 is incorrect. Please provide the correct reference.	A.4.2	Key specifications of CFLs to be installed within the project are listed in Table 1. Relevant corrections have been made in the PDD version 02.	Corrections are made, the issue is closed.
CAR 12. The reference to Table 4 in the description of main advantages of CFL is incorrect.Please provide the correct reference.	A.4.2	The difference between powers of CFL and incandescent lights with equivalent luminous fluxes is provided in Table 2.	Corrections are made, the issue is closed.
CAR 13. In LED lamp specifications, the reference to Table 3 is incorrect. Please provide the correct reference.	A.4.2	The main LED lamp specifications are shown in Table 3.	Corrections are made, the issue is closed.
CAR 14. The reference to Table 1 in the description of main advantages of LED lamp is incorrect.Please provide the correct reference.	A.4.2	Comparison of LED lamps and incandescent light bulbs is provided in Table 4.	Corrections are made, the issue is closed.
CAR 15. Table 6 of the PDD provides	A.4.3	The length of the crediting period	The issue is closed as

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
incorrect length of the crediting period.		during the first commitment period (2008-2012) is 5 years. Relevant correcions have been made in Table 6 of the PDD version 02.	corresponding changes are made.
CAR 16. Annual average of estimated GHG emission reductions over the crediting period (2008-2012) is calculated incorrectly.	A.4.3	Relevant corrections have been made in Table 6 of the PDD version 02.	Corrections are made, the issue is closed.
CAR 17. Table 7 in PDD Section A.4.3.1 does not comply with the Guidelines for Users of the JI PDD form.	A.4.3	Table 7 of PDD Section A.4.3.1 was corrected. See PDD version 02.	The issue is closed as corresponding changes are made.
CAR 18. Table 7 of the PDD provides incorrect length of the crediting period.	A.4.3	The length of the crediting period after the first commitment period (2013-2022) is 10 years.	The issue is closed as corresponding changes are made.
CAR 19. Table 7 of PDD Section A.4.3.1 provides an incorrect value of average annual estimated emission reductions (incorrect approximation).	A.4.3	Annual average estimated emission reductions have been recalculated. See PDD version 02.	The issue is closed as corresponding changes are made.
CAR 20. The project has no approval of the Host Party and the investing country.	19	To obtain the Letter of Approval the final Determination report must be submitted to the State Environmental Investment Agency of Ukraine that includes this Determination Protocol and the list of sources of Reference Information. A Letter of Approval of Switzerland as	The issue will be closed after the Letter of Approval is issued by the Host Party and country-participant.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
		the country-participant is not obtained at the current stage of the Project either.	
CAR 21. Please provide information on Alternative 1.3 in Section B.1. of the PDD.	23	The relevant information is provided. See PDD version 02.	The issue is closed as relevant information is added.
CAR 22. Please provide explanation to the divisor "1000000" in formula (B2).	23	1000000 – Watt to MW conversion factor.	The issue is closed as relevant information is added.
CAR 23. In Tables of Section B.1 provide the same explanations for $R^{y}_{p,k,n,j}$, $R^{y}_{p,l,n,j}$ parameters as in the formulae.	23	$R^{y}_{p,l,n,j}$ - Total number of *j*-type LED lights which replaced incandescent light bulbs in consumer group *n* in monitoring period *y* of the project scenario. $R^{y}_{p,k,n,j}$ - Total number of *j*-type CFLs which replaced incandescent light bulbs in consumer group *n* in monitoring period *y* of the project scenario.	The issue is closed as relevant information is provided.
CAR 24. In the description of $P^{y}_{b,k,n,j}$ parameter in tables of Section B.1 of the PDD, the reference to Table 4 is incorrect.	25	$EF^{j}_{b,CO2,ELEC}$ - carbon dioxide emission factor for electricity consumption by consumers	Corrections are made, the issue is closed.
CAR 25. $EF^{y}_{b,CO2,ELEC}$ factor has two	25	$EF^{y}_{b,CO2,ELEC}$ - carbon dioxide emission factor for electricity consumption by	

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
different explanations. Please make corresponding amendments.		consumers	
CAR 26. Please provide the description of the compliance of Alternative 1.3. with laws and regulations.	28	This alternative meets all the principles of legislative compliance of Alternative 1.2., and thus fully meets the current requirements of Ukrainian legislation.	The issue is closed as relevant information is added.
CAR 27. The outcome of Sub-step 1b is followed by a mentioning that further justification of additionality shall be performed by means of investment analysis, whereas barrier analysis is actually used.	28	Further justification of additionality shall be performed by means of barrier analysis.	Verified. The issue is closed.
CAR 28. The starting date of the project is incorrect (year).	34 (a)	The starting date of the project is deemed 11/02/2008, when PE "FOSA" started to implement activities on CFL and LED lamps within the framework of the Joint Implementation Project.	Relevant corrections are made, the issue is closed.
CAR 29. PDD Section C.3 provides information on the crediting period two times.	34(c)	The irrelevant information has been deleted. See PDD version 02.	The issue is closed as irrelevant information has been deleted.
CAR 30. In Section D.1.1, after data and parameters controlled throughout the crediting period, please provide the explanation of *p* index.	36(b)	p - index for baseline scenario.	The relevant information is provided. The issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
CAR 31. In Section D.1.1.3, provide the same description to $EF^{y}_{p,CO2,ELEC}$ factor as in formulae.	36 (b)	$EF^{y}_{p,CO2,ELEC}$ - carbon dioxide emission factor for electricity consumption by consumers, in monitoring period.	The issue is closed as corresponding changes are made.
CAR 32. In Section D.1.1.3, provide the same description to $R^{y}_{p,k,n,j}$, $R^{y}_{p,l,n,j}$ factor as in formulae.	36 (b)	$R^{y}_{p,k,n,j}$ - Total number of *j*-type CFLs which replaced incandescent light bulbs in consumer group *n* in monitoring period *y* of the project scenario. $R^{y}_{p,l,n,j}$ - Total number of *j*-type LED lights which replaced incandescent light bulbs in consumer group *n* in monitoring period *y* of the project scenario.	The issue is closed as corresponding changes are made.
CAR 33. In Section D.1.5 of the PDD, the title of the decree of the Ministry of environmental protection is incorrect.	36 (f) (v)	"Standards of maximum permissible emissions of pollutants from stationary sources" approved by the Ministry of Environmental Protection of Ukraine.	The issue is closed as corresponding corrections are made.
CAR 34. Please provide information on calibration of metering devices used in the project.	36 (f) (vii)	In accordance with the Law of Ukraine “On metrology and metrological activity”, metering equipment used by PE "FOSA” is subject to periodical verification and calibration. The frequency of verification (calibration) is set in	The information is provided, the issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
		accordance with manufacturer's manuals, approved methodologies on metering devices verification/calibration, as well as with the state standards of Ukraine.	
CAR 35. Please provide information on transboundary impacts of the project activity.	48(b)	Transboundary impacts from the project activity, according to their definition in the text of "Convention on long-range transboundary pollution" ratified by Ukraine, will not take place.	The information is provided, the issue is closed.
CL 01. In PDD Section A.2. please provide information on the category of electricity consumers among which LED lamps and CFLs will be distributed.	A.2	Distribution of project equipment (LED and CFL) will take place among electricity consumers of 2nd category. Relevant information is provided in Section A.2. of the PDD.	The issue is closed as relevant information is provided.
CL 02. Please provide data units for parameters in Table 2.	A.4.2	Data units are provided.	The issue is closed as relevant information is provided.
CL 03. Please clarify whether the project equipment is planned to be replaced during the project activity.	A.4.2	Replacement and installation of new CFLs and LED lamps in the project perod is planned according to the fixed operational life after 15 000 working hours (CFL) and 100 000 working hours (LED).	Explanation is accepted. The issue is closed.
CL 04. Please clarify whether the project equipment is in line with the global practice.	A.4.2	Energy-saving lighting technologies are leading element in the system of the global process of electricity consumption minimizing. Equipment	Explanation is accepted. The issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project participants' responses	Determination team conclusion
		implemented, namely CFLs and LED lamps, fully meets all the requirements of the global modern practice.	
CL 05. Please provide the reference to AM0046 methodology, version 2.0, in tables of Section B.1 of the PDD.	23	Relevant references have been provided. See PDD version 02.	The issue is closed as relevant references are provided.
CL 06. Please provide the reference to AM0046 methodology, version 2.0 in Section D.1 of the PDD.	29 (c)	Relevant references have been provided. See PDD version 02.	The issue is closed as relevant references are provided.
CL 07. Please number all the formulae.	36 (b)	Formulae numbering has been checked, relevant corrections have been made.	The issue is closed as corresponding changes are made.
CL 08. Please provide reference to the Decree of the Ministry of Environmental Protection of Ukraine "Standards of maximum permissible emissions of pollutants from stationary sources".	36 (f) (v)	Relevant reference has been provided. See PDD version 02.	The issue is closed as relevant references are provided.