



VERIFICATION REPORT CEP CARBON EMISSIONS PARTNERS S.A.

VERIFICATION OF THE
IMPLEMENTATION OF ENERGY-SAVING LIGHT
SOURCES IN THE PUBLIC, CORPORATE AND
PRIVATE SECTORS OF UKRAINE

REPORT No. UKRAINE-VER/0741/2012

REVISION No. 02

FIRST PERIODIC
FOR THE PERIOD OF 11/02/2008 – 31/10/2012

BUREAU VERITAS CERTIFICATION



VERIFICATION REPORT

Date of first issue: 02/11/2012	Organizational unit: Bureau Veritas Certification Holding SAS
Client: CEP CARBON EMISSIONS PARTNERS S.A.	Client ref.: Fabian Knodel

Summary:
Bureau Veritas Certification has made the 1st periodic verification for the period of 11/02/2008-31/10/2012 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 the territory of Ukraine, and applying JI specific approach, 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 (but for the crediting period) 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 verification scope is defined as a periodic independent review and ex post determination by the Accredited Entity of the monitored reductions in GHG emissions during defined verification period, and consisted of the following three phases: i) desk review of the monitoring report against 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 verification report and opinion. The overall verification, from Contract Review to Verification Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

The first output of the verification process is a list of Clarification, Corrective Actions Requests, Forward Actions Requests (CR, CAR and FAR), presented in Appendix A.

In summary, Bureau Veritas Certification confirms that the project is implemented as planned and described in approved project design documents. Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately. The monitoring system is in place and the project is generating GHG emission reductions. The GHG emission reduction is calculated accurately and without material errors, omissions, or misstatements, and the emission reductions issued totalize 5 275 947 tonnes of CO2 equivalent for the monitoring period from 11/02/2008 to 31/10/2012.

Our opinion relates to the project's GHG emissions and resulting GHG emission reductions reported and related to the approved project baseline and monitoring, and its associated documents.

Report No.: UKRAINE-ver/0741/2012	Subject Group: JI
Project title: "Implementation of energy-saving light sources in the public, corporate and private sectors of Ukraine"	
Work carried out by: Viacheslav Yeriomin – Team Leader, Climate Change Lead Verifier Volodymyr Kulish – Team Member, Climate Change Lead Verifier	
Work reviewed by: Ivan Sokolov - Internal Technical Reviewer	
Work approved by: Ivan Sokolov – Climate Change Operational Manager	
Date of this revision: 06/11/2012	Rev. No.: 02
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1 INTRODUCTION

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

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

The verification covers the period from February 11, 2008 to October 31, 2012.

1.1 Objective

Verification is the periodic independent review and ex post determination by the Accredited Independent Entity of the monitored reductions in GHG emissions during defined verification period.

The objective of verification can be divided in Initial Verification and Periodic Verification.

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

The verification is not meant to provide any consulting towards the Client. However, stated requests for clarifications, corrective and/or forward actions may provide input for improvement of the project monitoring towards reductions in the GHG emissions.

1.3 Verification Team

The verification 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



This verification report was reviewed by:

Ivan Sokolov
Bureau Veritas Certification Internal Technical Reviewer

2 METHODOLOGY

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

In order to ensure transparency, a verification 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 verifying the identified criteria. The verification protocol serves the following purposes:

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

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

2.1 Review of Documents

The Monitoring Report (MR) submitted by CEP CARBON EMISSIONS PARTNERS S.A. and additional background documents related to the project design and baseline, i.e. country Law, Project Design Document (PDD), Approved CDM methodology, Determination Report of the project issued by Bureau Veritas Certification Holding SAS, No. UKRAINE-det/0724/2012 version 02 dated 04/10/2012, Guidance on criteria for baseline setting and monitoring, Host party criteria, Kyoto Protocol, Clarifications on Verification Requirements to be Checked by an Accredited Independent Entity were reviewed.

The verification findings presented in this report relate to the Monitoring Report for the period of 11/02/2008 – 31/10/2012, version 01 dated 01/11/2012 and version 02 dated 05/11/2012, and project as described in the determined PDD.

2.2 Follow-up Interviews

On 05/11/2012 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»	<ul style="list-style-type: none"> ➤ Organizational structure ➤ Responsibilities and authorities ➤ Roles and responsibilities relating to data collection and processing ➤ Equipment installation ➤ Data logging archiving and reporting ➤ Metering equipment control ➤ Metering record keeping system, database ➤ IT management ➤ Personnel training ➤ Quality control procedures and technology ➤ Internal audit and inspections
Consultant: CEP CARBON EMISSIONS PARTNERS S.A.	<ul style="list-style-type: none"> ➤ Baseline methodology ➤ Monitoring plan ➤ Monitoring report ➤ Deviations from the PDD

2.3 Resolution of Clarification, Corrective and Forward Action Requests

The objective of this phase of the verification 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 GHG emission reduction calculation.

If the Verification Team, in assessing the monitoring report and supporting documents, identifies issues that need to be corrected, clarified or improved with regard to the monitoring requirements, it should raise these issues and inform the project participants of these issues in the form of:

(a) Corrective action request (CAR), requesting the project participants to correct a mistake that is not in accordance with the monitoring plan;

(b) Clarification request (CL), requesting the project participants to provide additional information for the Verification Team to assess compliance with the monitoring plan;



(c) Forward action request (FAR), informing the project participants of an issue, relating to the monitoring that needs to be reviewed during the next verification period.

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

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

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

The Clarification, Corrective and Forward Action Requests are stated, where applicable, in the following sections and are further documented in the Verification Protocol in Appendix A. The verification of the Project resulted in 8 Corrective Action Requests and 2 Clarification Requests.

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

3.1 Remaining issues and FARs from previous verifications

CAR 20 (lack of written approval from the Host party) that was raised at the determination stage was closed based on the provision of the Letter of Approval to Bureau Veritas Certification SAS.

3.2 Project approval by Parties involved (90-91)

The project obtained approval by the Host party (Ukraine) - Letter of Approval No. 3118/23/7 issued by the State Environmental Investment Agency of Ukraine dated 19/10/2012, and written project approval by the party – buyer of the emission reduction units (Switzerland) - Letter of Approval No. J294-0485 issued by the Federal Office for the Environment of Switzerland (FOEN) dated 24/10/2012.

The abovementioned written approvals are unconditional.

The identified areas of concern as to the project approval by the parties involved, project participants' responses and BVC's conclusions are described in Appendix A to this report (refer to CAR 01).



3.3 Project implementation (92-93)

The main objective of the Joint Implementation project (hereinafter - JIP) “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.

In the framework of the project activities, between 2008 and 2022, PE “FOSA” will distribute 40 000 000 CFLs and 7 000 000 LEDLs within the geographic borders of Ukraine, which substitute incandescent lamps. The installation of high-efficient light sources, like CFLs and LEDLs, leads to lowering energy consumption, which in turn results in lowering the amount of fossil fuel combusted at a conventional power plant, which in turn leads to the reduction of GHG emissions into the atmosphere. The positive effect, secondary to the main project objectives, is consumers’ financial savings on energy costs.

The project provides for the distribution of LEDLs and CFLs both among individuals (households) and legal entities (industrial, commercial, organisational and governmental bodies). The distribution of the project equipment (LEDLs and CFLs) is carried out among electric energy consumers of the 2nd category.

The proposed JI project utilizes one of two types of incentives or their combination for LEDL 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 is not less than 50% of the average market price of a CFL and LED lamp for that particular year.

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



Implementation of the project started on 11/02/2008 when PE "Fosa" started to distribute CFLs and LED lamps in the framework of the JI project, as provided in the determined PDD version 02. Status of the project during the reporting period from 11/02/2008 to 31/10/2012 is provided in Table 2 below.

Table 2 Project implementation status in 11/02/2008-31/10/2012

Year	Type of CFL				Total number of CFLs in the reporting period
	6000	10000	12000	15000	
11/02/2008-31/12/2008	0	1 347 615	208 864	960 461	2 516 940
2009	0	668 635	366 647	470 396	1 505 678
2010	0	725 304	77 047	35 485	837 836
2011	0	284 087	169 737	366 850	820 674
01/01/2012-31/10/2012	0	0	0	0	0
Total in 11/02/2008-31/10/2012	0	3 025 641	822 295	1 833 192	5 681 128

The implementation of the project is in accordance with the project plan included in the PDD version 02.

The starting date of the crediting period has not changed and remains the date when the first emission reductions are expected to be generated, namely: February 11, 2008.

The monitoring system is in place.

Monitoring equipment, such as loggers and other measurement equipment, meet industry standards of Ukraine. All monitoring equipment is included in the detailed verification (calibration) plan and tested at intervals prescribed by the manufacturers of such equipment.

LED lamps, as EIA has shown, have no negative impact on environment. CFLs contain a very small amount of mercury sealed within the glass tubing – 5 milligrams on average (roughly equivalent to the tip of a ball-point pen). Mercury is an essential, irreplaceable element of CFLs as it allows the bulb to be an efficient light source. There is no substitute for mercury in CFLs; however, manufacturers have taken significant steps to reduce mercury levels in fluorescent lighting products over the past decade; in particular they started research into the production of mercury-free CFLs. Despite the fact that the CFLs contain small amount of mercury, it is much less than the amount that would be emitted by power



plants that burn coal to support the work of incandescent bulbs for the same time period.

The end-of-life CFLs are collected by the project owner, and then they are disposed at appropriate landfills or via an appropriate recycling process in cooperation with a registered recycling company operating within applicable environmental norms and accredited according to state standards.

The identified areas of concern as to the project implementation, project participants' responses and BVC's conclusions are described in Appendix A to this report (refer to CAR 02, CAR 03, CAR 04, CAR 05, CAR 06, CL 01).

3.4 Compliance of the monitoring plan with the monitoring methodology (94-98)

The monitoring occurred in accordance with the monitoring plan included in the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website.

For calculating the emission reductions key factors, such as Ukrainian environmental legislation and other national legislation as well as key factors, such as availability of financial funds to implement the project activities, prices set by the market economy mechanisms, modern technologies and the possibility to implement know-how in the lighting system industry, influencing the baseline emissions and the activity level of the project and the emissions as well as risks associated with the project were taken into account, as appropriate.

Data sources used for calculating emission reductions, such as documents and archival data of the enterprise, standards and statistical forms, the results of periodic inspections of loggers are clearly identified, reliable and transparent.

Emission factors, including $EF_{b,CO_2,ELEC}^y$ - carbon dioxide emission factor for electricity consumption by electricity consumers in monitoring period "y", in the baseline scenario and $EF_{p,CO_2,ELEC}^y$ - carbon dioxide emission factor for electricity consumption by electricity consumers in monitoring period "y", in the project scenario are selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice.

The calculation of emission reductions is based on conservative assumptions and the most plausible scenarios in a transparent manner.



The monitoring periods per component of the project are clearly specified in the monitoring report and do not overlap with those for which verifications were already deemed final in the past.

The identified areas of concern as to the compliance of the monitoring plan with the monitoring methodology, project participants' responses and BVC's conclusions are described in Appendix A to this report (refer to CAR 07, CAR 08, CL 02).

3.5 Revision of monitoring plan (99-100)

Not applicable.

3.6 Data management (101)

The data and their sources, provided in the monitoring report, are clearly identified, reliable and transparent.

The implementation of data collection procedures is in accordance with the monitoring plan provided in the PDD, including the quality control and quality assurance procedures.

The function of the monitoring equipment, including its calibration status, is in order.

According to the current Law "On metrology and metrological activity", all metering equipment in Ukraine shall meet the specified requirements of relevant standards and is subject to periodic verification. Intercalibration period of Lighting logger produced by Dent Instruments is 5 years.

The project complies with the legislative requirements relating to inspections and calibration.

The evidence and records used for the monitoring are maintained in a traceable manner.

Data collection and management system is in accordance with the monitoring plan provided in the PDD.

The most objective and cumulative indicator that provides a clear picture of whether emission reduction took place is electricity and natural gas consumption reduction. Comprehensive modernization of equipment through the introduction and use of more efficient manufacturing technologies has led to the reduction of GHG emissions.

The monitoring plan provides for the following measures:

1. Identification of all potential sources of emissions within the project boundary.
2. Collection of information on greenhouse gas emissions within the project during the crediting period.
3. Assessment of the project implementation schedule.
4. Collection of the information on measurement equipment, its calibration.

5. Collection and archiving information on the impact of project activities on the environment.
6. Data archiving.
7. Determination of the structure of responsibility for project monitoring.
8. Analysis of organization of personnel training.

Data and parameters subject to periodic monitoring, according to the monitoring plan provided in the PDD version 02, as well as the list of constant values used to calculate emission reductions, are provided in Section B.2.1. of the Monitoring Report, as well as in Annex 1.

In order to ensure due fulfillment of the monitoring plan and data collection, CEP CARBON EMISSIONS PARTNERS S.A. and PE «Fosa» created a unified operational structure. The structure of the scheme is shown in Figure 1:

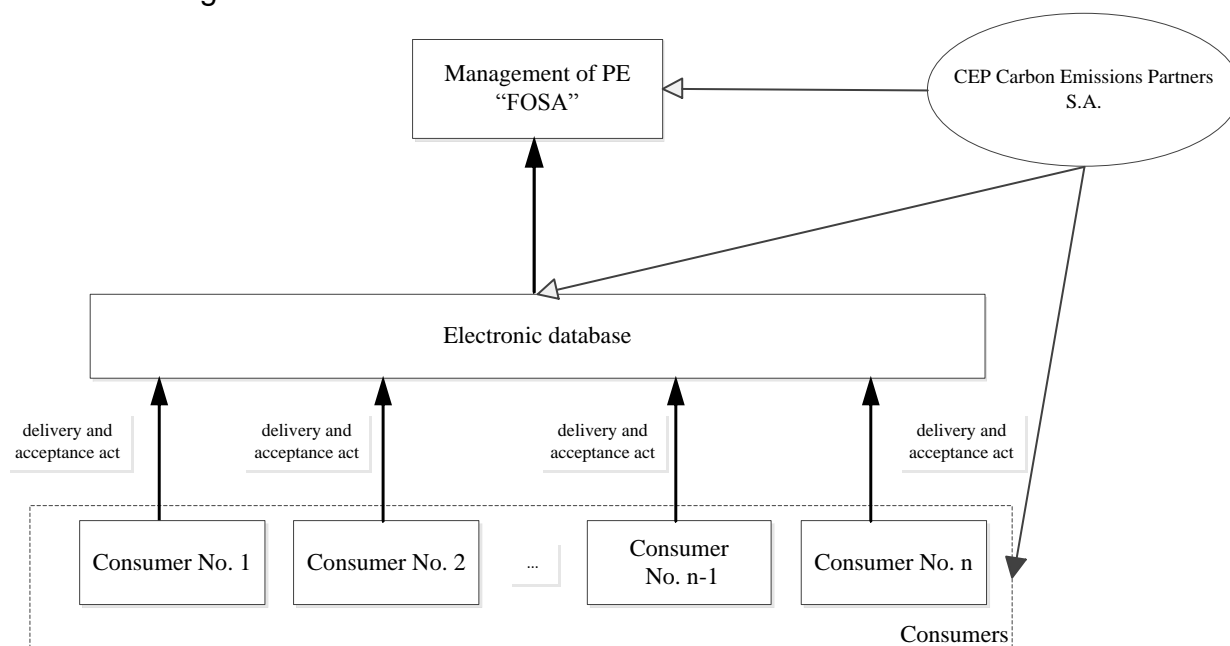


Figure 1 Structure of monitoring data collection and processing

Being the part of the monitoring plan, the operational structure of the enterprise allows it to collect original data, consolidate and make cross-check of the data.

All necessary data concerning GHG emission reduction monitoring is archived in paper and/or electronic form and kept till the end of the crediting period and for two years after the latest transaction with emission reduction units.



The Monitoring Report version 02 provides sufficient information on duties assigned, responsibility and authorities concerning implementation and undertaking of monitoring procedures, including data management. The verification team confirms the efficiency of the existing management and operational systems and considers them appropriate for reliable project monitoring.

3.7 Verification regarding programmes of activities (102-110)

Not applicable.

4 VERIFICATION OPINION

Bureau Veritas Certification has performed the 1st periodic verification of the “Implementation of energy-saving light sources in the public, corporate and private sectors of Ukraine” Project for the period from February 11, 2008 to October 31, 2012, which applies JI specific approach. The verification 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 verification consisted of the following three phases: i) desk review of the monitoring report against 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 verification report and opinion.

PE «Fosa» management is responsible for the preparation of data which serve as the basis for estimation of GHG emission reductions. CEP CARBON EMISSIONS PARTNERS S.A. provides PE «Fosa» with consultative support in the issues relating to organization of data collection and is responsible for developing the monitoring report based on the Project Monitoring Plan included in the final PDD version 02.

Bureau Veritas Certification verified the Project Monitoring Report version 02 for the reporting period of 11/02/2008 - 31/10/2012 as indicated below. Bureau Veritas Certification confirms that the project is implemented as planned and described in approved project design documents. Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately. The monitoring system is in place and the project is generating GHG emission reductions.

Emission reductions achieved by the project for the period from 11/02/2008 to 31/10/2012 do not differ significantly from the amount predicted for the same period in the determined PDD. Emission reductions predicted in the determined PDD version 02 and actual emission



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reductions stated in the MR version 02 are provided in Table 3 of this report.

Table 3 Emission reductions predicted in the determined PDD version 02 and actual emission reductions stated in the MR version 02

Period	Estimated GHG emission reductions stated in the determined PDD, t CO _{2e}	Actual GHG emission reductions stated in the Monitoring report, t CO _{2e}
2008	463 725	463 725
2009	1 219 236	1 219 236
2010	1 562 140	1 562 139
2011	1 274 281	1 274 282
01/01/2012-31/10/2012	1 061 900	756 565
Total	5 581 282	5 275 947

This difference is caused by the fact that at the PDD development stage PE «Fosa» provided estimated data for 2012, whereas at the monitoring stage PE «Fosa» provided final ex-post data that helped determine the actual amount of GHG emission reductions.

Bureau Veritas Certification can confirm that the GHG emission reduction is accurately calculated and is free of material errors, omissions, or misstatements. Our opinion relates to the project's GHG emissions and resulting GHG emissions reductions reported and related to the approved project baseline and monitoring, and its associated documents. Based on the information we have seen and evaluated, we confirm, with a reasonable level of assurance, the following statement:

Reporting period: From 11/02/2008 to 31/10/2012

In the period from 11/02/2008 to 31/12/2008

Baseline emissions	: 602 907	tonnes of CO ₂ equivalent.
Project emissions	: 139 182	tonnes of CO ₂ equivalent.
Leakage	: 0	tonnes of CO ₂ equivalent.
Emission Reductions	: 463 725	tonnes of CO ₂ equivalent.

In the period from 01/01/2009 to 31/12/2009

Baseline emissions	:1 574 080	tonnes of CO ₂ equivalent.
Project emissions	: 354 844	tonnes of CO ₂ equivalent.
Leakage	: 0	tonnes of CO ₂ equivalent.
Emission Reductions	:1 219 236	tonnes of CO ₂ equivalent.

In the period from 01/01/2010 to 31/12/2010

Baseline emissions	:2 013 135	tonnes of CO ₂ equivalent.
Project emissions	: 450 996	tonnes of CO ₂ equivalent.



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Leakage : 0 tonnes of CO₂ equivalent.
 Emission Reductions : 1 562 139 tonnes of CO₂ equivalent.

In the period from 01/01/2011 to 31/12/2011

Baseline emissions : 1 642 220 tonnes of CO₂ equivalent.
 Project emissions : 367 938 tonnes of CO₂ equivalent.
 Leakage : 0 tonnes of CO₂ equivalent.
 Emission Reductions : 1 274 282 tonnes of CO₂ equivalent.

In the period from 01/01/2012 to 31/10/2012

Baseline emissions : 978 729 tonnes of CO₂ equivalent.
 Project emissions : 222 164 tonnes of CO₂ equivalent.
 Leakage : 0 tonnes of CO₂ equivalent.
 Emission Reductions : 756 565 tonnes of CO₂ equivalent.

Total in the period from 11/02/2008 to 31/10/2012

Baseline emissions : 6 811 071 tonnes of CO₂ equivalent.
 Project emissions : 1 535 124 tonnes of CO₂ equivalent.
 Leakage : 0 tonnes of CO₂ equivalent.
 Emission Reductions : 5 275 947 tonnes of CO₂ equivalent.



5 REFERENCES

Category 1 Documents:

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

/1/	Monitoring Report of the JI project “Implementation of energy-saving light sources in the public, corporate and private sectors of Ukraine” for the period of 11/02/2008-31/10/2012, version 01, as of 01/11/2012
/2/	Monitoring Report of the JI project “Implementation of energy-saving light sources in the public, corporate and private sectors of Ukraine” for the period of 11/02/2008-31/10/2012, version 02, as of 05/11/2012
/3/	Annex 1 : Calculation of GHG emission reductions for the period from 11/02/2008 to 31/10/2012
/4/	Annex 2: List of contractors which took part in the project representative group of the JI project “Implementation of energy-saving light sources in the public, corporate and private sectors of Ukraine”
/5/	Annex 3: Power of CFLs installed in the course of the project activities and ILs replaced by them
/6/	The PDD of the JI project “Implementation of energy-saving light sources in the public, corporate and private sectors of Ukraine”, version 02, as of 28/09/2012
/7/	Determination Report of the JI project “Implementation of energy-saving light sources in the public, corporate and private sectors of Ukraine”, issued by Bureau Veritas Certification Holding SAS, No. UKRAINE-det/0724/2012 dated 04/10/2012
/8/	Letter of Approval of the JI project “Implementation of energy-saving light sources in the public, corporate and private sectors of Ukraine” No. 3118/23/7 issued by the State Environmental Investment Agency of Ukraine as of 19/10/2012
/9/	Letter of Approval of the JI project “Implementation of energy-saving light sources in the public, corporate and private sectors of Ukraine” under article 6 of the Kyoto Protocol No. J294-0485 issued by the Federal Office for the Environment (FOEN) of Switzerland dated 24/10/2012.

Category 2 Documents:

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

/1/	Agreement No. 12-F-08211/1 dated February 11, 2008 terminal use of energy efficient CFLs
/2/	Certificate of acceptance and delivery of compact fluorescent lamps dated 15/02/2008
/3/	Certificate of acceptance and delivery of compact fluorescent lamps dated 13/09/2011

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/4/	Certificate of acceptance and delivery of compact fluorescent lamps dated 19/08/2010
/5/	Certificate of acceptance and delivery of compact fluorescent lamps dated 04/03/2008
/6/	Certificate of acceptance and delivery of compact fluorescent lamps dated 25/02/2008
/7/	Certificate of acceptance and delivery of compact fluorescent lamps dated 21/02/2008
/8/	Certificate of acceptance and delivery of compact fluorescent lamps dated 24/06/2010
/9/	Certificate of acceptance and delivery of compact fluorescent lamps dated 23/09/2011
/10/	Certificate of acceptance and delivery of compact fluorescent lamps dated 26/02/2008
/11/	Certificate of acceptance and delivery of compact fluorescent lamps dated 01/02/2010
/12/	Certificate of acceptance and delivery of compact fluorescent lamps dated 22/02/2008
/13/	Certificate of acceptance and delivery of compact fluorescent lamps dated 26/05/2008
/14/	Certificate of acceptance and delivery of compact fluorescent lamps dated 08/02/2011
/15/	Certificate of acceptance and delivery of compact fluorescent lamps dated 24/06/2008
/16/	Certificate of acceptance and delivery of compact fluorescent lamps dated 22/02/2008
/17/	Certificate of acceptance and delivery of compact fluorescent lamps dated 23/08/2011
/18/	Certificate of acceptance and delivery of compact fluorescent lamps dated 02/07/2010
/19/	Certificate of acceptance and delivery of compact fluorescent lamps dated 14/02/2008
/20/	Certificate of acceptance and delivery of compact fluorescent lamps dated 14/02/2008
/21/	Certificate of acceptance and delivery of compact fluorescent lamps dated 01/07/2010
/22/	Certificate of acceptance and delivery of compact fluorescent lamps dated 15/02/2008
/23/	Certificate of acceptance and delivery of compact fluorescent lamps dated 12/02/2008
/24/	Certificate of acceptance and delivery of compact fluorescent lamps dated 15/02/2008
/25/	Certificate of acceptance and delivery of compact fluorescent lamps dated 16/06/2010
/26/	Certificate of acceptance and delivery of compact fluorescent lamps dated 31/08/2011



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/27/	Certificate of acceptance and delivery of compact fluorescent lamps dated 03/03/2008
/28/	Manual of logger (smart ware 11)
/29/	Photos of measurement works
/30/	Photos of measurement equipment (logger (smart ware 11))

Persons interviewed:

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

	Name	Organization	Position
/1/	Novak S.A.	PE «Fosa»	Director
/2/	Papaian P.B.	PE «Fosa»	Deputy director
/3/	Mysh V.H.	PE «Fosa»	Lead Engineer
/4/	Obukhov L.I.	PE «Fosa»	Manager
/5/	Repinetskyi S.O.	“CEP” LLC	Consultant of CEP CARBON EMISSIONS PARTNERS S.A.



APPENDIX A: PROJECT VERIFICATION PROTOCOL

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Table 1. Check list for verification, according to the JOINT IMPLEMENTATION DETERMINATION AND VERIFICATION MANUAL (Version 01)

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
Project approvals by Parties involved				
90	Has the DFPs of at least one Party involved, other than the host Party, issued a written project approval when submitting the first verification report to the secretariat for publication in accordance with paragraph 38 of the JI guidelines, at the latest?	The project has been approved by both the Host party (Ukraine) and the other Party involved (Switzerland). The Letters of Approval were issued by NFPs of the Parties involved. Two y of Approval were available at the beginning of the first verification of the project. CAR 01. The title of authority that issued a Letter of Approval from Ukraine is incorrect in Section A.2. of the MR.	CAR 01	OK
91	Are all the written project approvals by Parties involved unconditional?	Yes, all the written project approvals by Parties involved are unconditional.	OK	OK
Project implementation				
92	Has the project been implemented in accordance with the PDD regarding which the determination has been deemed final and is so listed on the	CAR 02. In Section A.3. a baseline scenario is mistakenly stated, whereas information about the project scenario is provided. CAR 03. Section A.3. of the MR contains an incorrect	CAR 02 CAR 03	OK OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	UNFCCC JI website?	reference to Section A.4.2., while there is no such section in the MR.		
93	What is the status of operation of the project during the monitoring period?	<p>The implementation of the project activities is in accordance with the project plan included in the determined PDD version 02.</p> <p>CL 01. Please, state the starting date of the project in Section A.6. of the MR.</p> <p>CAR 04. The end date of the monitoring period is not correct in some sections of the MR.</p> <p>CAR 05. Please, in Table 1 of the MR provide information on the implemented activities in the period from 01/01/2012 to 31/10/2012.</p> <p>CAR 06. Please, state the starting date of the crediting period in Section A.6. of the MR.</p>	<p>CL 01</p> <p>CAR 04</p> <p>CAR 05</p> <p>CAR 06</p>	<p>OK</p> <p>OK</p> <p>OK</p> <p>OK</p>
Compliance with monitoring plan				
94	Did the monitoring occur in accordance with the monitoring plan included in the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website?	The monitoring occurred in accordance with the monitoring plan included in the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website	OK	OK
95 (a)	For calculating the emission reductions or enhancements of net removals, were key factors, e.g. those listed in 23 (b) (i)-(vii) of the DVM, influencing the baseline emissions or net removals and the activity level of the project and the emissions or removals as well as risks associated with the project taken into	For calculating the emission reductions key factors, such as Ukrainian environmental legislation and other national legislation as well as key factors, such as availability of financial funds to implement the project activities, prices set by the market economy mechanisms, modern technologies and the possibility to implement know-how in the lighting system industry, influencing the baseline emissions and the	OK	OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	account, as appropriate?	activity level of the project and the emissions as well as risks associated with the project were taken into account, as appropriate.		
95 (b)	Are data sources used for calculating emission reductions or enhancements of net removals clearly identified, reliable and transparent?	Data sources used for calculating emission reductions are clearly identified, reliable and transparent. CL 02. Please, provide a reference to JI Guidance on criteria for baseline setting and monitoring, Version 03. CAR 07. In Section A.5.1. there is an incorrect reference to Section B.2. whereas in Section B.2. such information is deleted.	CL 02 CAR 07	OK OK
95 (c)	Are emission factors, including default emission factors, if used for calculating the emission reductions or enhancements of net removals, selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice?	Emission factors, including $EF_{b,CO_2,ELEC}^y$ - carbon dioxide emission factor for electricity consumption by electricity consumers in monitoring period "y", in the baseline scenario and $EF_{p,CO_2,ELEC}^y$ - carbon dioxide emission factor for electricity consumption by electricity consumers in monitoring period "y", in the project scenario are selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice.	OK	OK
95 (d)	Is the calculation of emission reductions or enhancements of net removals based on conservative assumptions and the most plausible scenarios in a transparent manner?	Calculation of emission reductions is based on conservative assumptions and the most plausible scenarios in a transparent manner. CAR 08. Emission reductions in 2009 are not the difference between the baseline and project	CAR 08	OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		emissions.		
Applicable to JI SSC projects only				
96	Is the relevant threshold to be classified as JI SSC project not exceeded during the monitoring period on an annual average basis? If the threshold is exceeded, is the maximum emission reduction level estimated in the PDD for the JI SSC project or the bundle for the monitoring period determined?	Not applicable	Not applicable	Not applicable
Applicable to bundled JI SSC projects only				
97 (a)	Has the composition of the bundle not changed from that is stated in F-JI-SSCBUNDLE?	Not applicable	Not applicable	Not applicable
97 (b)	If the determination was conducted on the basis of an overall monitoring plan, have the project participants submitted a common monitoring report?	Not applicable	Not applicable	Not applicable
98	If the monitoring is based on a monitoring plan that provides for overlapping monitoring periods, are the monitoring periods per component of the project clearly specified in the monitoring report? Do the monitoring periods not overlap with those for which verifications were	Not applicable	Not applicable	Not applicable



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	already deemed final in the past?			
Revision of monitoring plan				
Applicable only if monitoring plan is revised by project participant				
99 (a)	Did the project participants provide an appropriate justification for the proposed revision?	Not applicable.	Not applicable	Not applicable
99 (b)	Does the proposed revision improve the accuracy and/or applicability of information collected compared to the original monitoring plan without changing conformity with the relevant rules and regulations for the establishment of monitoring plans?	Not applicable	Not applicable	Not applicable
Data management				
101 (a)	Is the implementation of data collection procedures in accordance with the monitoring plan, including the quality control and quality assurance procedures?	The implementation of data collection procedures, including the quality control and quality assurance procedures, is in accordance with the monitoring plan.	OK	OK
101 (b)	Is the function of the monitoring equipment, including its calibration status, is in order?	According to the current Law "On metrology and metrological activity", all metering equipment in Ukraine shall meet the specified requirements of relevant standards and is subject to periodic verification. Intercalibration period of Lighting logger produced by Dent Instruments is 5 years.	OK	OK
101 (c)	Are the evidence and records used for the monitoring maintained in a traceable manner?	To measure the operating hours of artificial lighting equipment for each relevant consumer category,	OK	OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		special metering devices, loggers, were used, specifically Lighting loggers* manufactured by Dent Instruments (for details refer to the equipment manufacturer's website). The devices are fitted out with photosensors which register the presence of artificial lighting and transfer the information to the central computer which records in online mode the schedule of operation of lighting equipment at the facility where every particular logger is installed. Loggers can operate in standalone mode without recharge for 5 years, whereafter battery replacement will be needed. The scheme of collection of data on artificial lighting at the enterprises which take part in the PRG is shown in Figure 1 of the MR.		
101 (d)	Is the data collection and management system for the project in accordance with the monitoring plan?	The data collection and management system for the project is in accordance with the monitoring plan. The verification team confirms the effectiveness of the existing management and operating systems and considers them suitable for reliable monitoring of the project.	OK	OK
Verification regarding programs of activities (additional elements for assessment)				
102	Is any JPA that has not been added to the JI PoA not verified?	Not applicable	Not applicable	Not applicable
103	Is the verification based on the	Not applicable	Not	Not

* http://www.dentinstruments.com/smart_logger_meters_energy_electricity_metering.htm



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	monitoring reports of all JPAs to be verified?		applicable	applicable
103	Does the verification ensure the accuracy and conservativeness of the emission reductions or enhancements of removals generated by each JPA?	Not applicable	Not applicable	Not applicable
104	Does the monitoring period not overlap with previous monitoring periods?	Not applicable	Not applicable	Not applicable
105	If the AIE learns of an erroneously included JPA, has the AIE informed the JISC of its findings in writing?	Not applicable	Not applicable	Not applicable
Applicable to sample-based approach only				
106	Does the sampling plan prepared by the AIE: (a) Describe its sample selection, taking into account that: (i) For each verification that uses a sample-based approach, the sample selection shall be sufficiently representative of the JPAs in the JI PoA such extrapolation to all JPAs identified for that verification is reasonable, taking into account differences among the characteristics of JPAs, such as: - The types of JPAs;	Not applicable	Not applicable	Not applicable



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	<ul style="list-style-type: none"> - The complexity of the applicable technologies and/or measures used; - The geographical location of each JPA; - The amounts of expected emission reductions of the JPAs being verified; - The number of JPAs for which emission reductions are being verified; - The length of monitoring periods of the JPAs being verified; and - The samples selected for prior verifications, if any? 			
107	Is the sampling plan ready for publication through the secretariat along with the verification report and supporting documentation?	Not applicable	Not applicable	Not applicable
108	Has the AIE made site inspections of at least the square root of the number of total JPAs, rounded to the upper whole number? If the AIE makes no site inspections or fewer site inspections than the square root of the number of total JPAs, rounded to the upper whole number, then does the AIE provide a reasonable explanation and justification?	Not applicable	Not applicable	Not applicable
109	Is the sampling plan available for	Not applicable	Not	Not



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	submission to the secretariat for the JISC's ex ante assessment? (Optional)		applicable	applicable
110	If the AIE learns of a fraudulently included JPA, a fraudulently monitored JPA or an inflated number of emission reductions claimed in a JI PoA, has the AIE informed the JISC of the fraud in writing?	Not applicable	Not applicable	Not applicable



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Table 2. Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests by verification team	Ref. to checklist question in table 1	Summary of project participant response	Verification team conclusion
CAR 01. The title of authority that issued a Letter of Approval from Ukraine is incorrect in Section A.2. of the MR.	90	The Letter of Approval was issued by the State Environmental Investment Agency of Ukraine.	The issue is closed as necessary corrections were made.
CAR 02. In Section A.3. a baseline scenario is mistakenly stated, whereas information about the project scenario is provided.	92	Relevant corrections were made. Refer to the MR version 02.	The issue is closed as necessary corrections were made.
CAR 03. Section A.3. of the MR contains an incorrect reference to Section A.4.2., while there is no such section in the MR.	92	Unnecessary information was deleted. Refer to the MR version 02.	The issue is closed as unnecessary information was deleted.
CAR 04. The end date of the monitoring period is not correct in some sections of the MR.	93	The end date of the monitoring period is 31/10/2012/	The issue is closed as necessary corrections were made.
CAR 05. Please, in Table 1 of the MR provide information on the implemented activities in the period from 01/01/2012 to 31/10/2012.	93	Information on the implemented activities in the period from 01/01/2012 to 31/10/2012 is provided in Table 1.	The issue is closed as necessary information was provided.
CAR 06. Please, state the starting date of the crediting period in Section A.6. of the MR.	93	The starting date of the crediting period has not changed and remains the date when the first emission reductions are expected to be generated, namely: February 11, 2008.	The issue is closed as necessary information was provided.



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CAR 07. In Section A.5.1. there is an incorrect reference to Section B.2. whereas in Section B.2. such information is deleted.	95 (b)	Unnecessary information was deleted.	The issue is closed as unnecessary information was deleted.
CAR 08. Emission reductions in 2009 are not the difference between the baseline and project emissions.	95 (d)	The mistake was caused by rounding. The mistake was corrected.	The issue is closed as the emission reductions were recalculated.
CL 01. Please, state the starting date of the project in Section A.6. of the MR.	93	Implementation of the project started on 11/02/2008 when PE "Fosa" started to distribute CFLs and LED lamps in the framework of the JI project, as provided in the determined PDD version 02.	The issue is closed as necessary information was provided.
CL 02. Please, provide a reference to JI Guidance on criteria for baseline setting and monitoring, Version 03.	95 (b)	Relevant reference was provided in the MR version 02.	The issue is closed as necessary reference was provided.