



# VERIFICATION REPORT

## CARBON MANAGEMENT COMPANY GMBH

### VERIFICATION OF THE PROJECT POWER DISTRIBUTION SYSTEM MODERNIZATION OF PJSC «AES KYIVOBLENERGO»

INITIAL AND FIRST PERIODIC  
FOR THE PERIOD 01/01/2008 – 30/06/2012

**REPORT No. UKRAINE-VER/0511/2012**

REVISION No. 02

BUREAU VERITAS CERTIFICATION



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Date of first issue: 26/09/2012	Organizational unit: Bureau Veritas Certification Holding SAS
Client: Carbon Management Company GmbH	Client ref.: Alain Girardet

Summary:  
Bureau Veritas Certification has made the initial and 1<sup>st</sup> periodic verification of the POWER DISTRIBUTION SYSTEM MODERNIZATION OF PJSC «AES KYIVOBLENERGO» project of CARBON MANAGEMENT COMPANY GMBH located in Kyiv region, 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 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 ERUs issued totalize 2 697 721 tonnes of CO<sub>2</sub> equivalent for the monitoring period from 01/01/2008 to 30/06/2012.

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/0511/2012	Subject Group: JI
Project title: Power distribution system modernization OF PJSC «AES KYIVOBLENERGO»	
Work carried out by: Vyacheslav Yeriomin – Team Leader, Lead Verifier Vasiliy Kobzar: Team Member, Technical Specialist	
Work reviewed by: Ivan Sokolov – Internal Technical Reviewer Victoria Legka – Technical Specialist	
Work approved by: Ivan Sokolov – Operational Manager	
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## 1 INTRODUCTION

CARBON MANAGEMENT COMPANY GMBH has commissioned Bureau Veritas Certification to verify the emissions reductions of its JI project POWER DISTRIBUTION SYSTEM MODERNIZATION OF PJSC «AES KYIVOBLENERGO» (hereafter called “the project”) at Kyiv region, 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.

### 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:

Vyacheslav Yeriomin  
Bureau Veritas Certification Team Leader, Climate Change Verifier

Vasiliy Kobzar



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Bureau Veritas Certification Technical Specialist

This determination report was reviewed by:

Ivan Sokolov  
Bureau Veritas Certification Internal Technical Reviewer

Victoria Legka  
Bureau Veritas Certification Technical Specialist

## 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 Carbon Management Company GmbH and additional background documents related to the project design and baseline, i.e. country Law, Project Design Document (PDD), and/or 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 version(s) 1.0 and 2.0 and project as described in the determined PDD.



## 2.2 Follow-up Interviews

On 19/09/2012 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 Carbon Management Company GmbH and PJSC «AES Kyivoblenergo» were interviewed (see References). The main topics of the interviews are summarized in Table 1.

**Table 1 Interview topics**

Interviewed organization	Interview topics
PJSC «AES Kyivoblenergo»	Organizational structure Responsibilities and authorities Roles and responsibilities for data collection and processing Installation of equipment Data logging, archiving and reporting Metering equipment control Metering record keeping system, database IT management Training of personnel Quality management procedures and technology Internal audits and check-ups
CARBON MANAGEMENT COMPANY GMBH	Baseline methodology Monitoring plan Monitoring report Excel spreadsheets

## 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;

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(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 1 Clarification Request.

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

#### **3.1 Remaining issues and FARs from previous verifications**

No FARs were raised during determination.

#### **3.2 Project approval by Parties involved (90-91)**

Written project approval by the Ukraine #2756/23/7 dated 26/09/2012 has been issued by the State Environmental Investment Agency of Ukraine.

Written project approval #J294-0485 by Switzerland Designated Focal Point - Federal Department of the Environment, Transport, Energy and Communications of Switzerland dated 24/08/2012.

The abovementioned written approvals are unconditional.

The identified areas of concern as to the Project approval by Parties involved, project participants responses and Bureau Veritas Certification's

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conclusions are described in Appendix A to this report (refer to CAR 01, CAR 02).

### 3.3 Project implementation (92-93)

The main purpose of the Joint Implementation Project (hereinafter - JIP) implementation «Power distribution system modernization of PJSC «AES Kyivoblenergo» is the implementation of the program on the technical improvement of electrical networks and equipment, advanced technologies implementation, the transition to a higher level of organization, transmission and distribution of electric energy.

Implementation of the measures under the Project allows for improvement of the reliability and efficiency of distribution electrical grids of Public joint stock company “AES Kyivoblenergo” and this helps reduce the amount of electricity that is lost during transportation thereof to the consumers of all forms of ownership, so the production of electricity at thermal power plants decreases and correspondingly GHG emissions are reduced.

Implementation of project activities started in 2003, as provided for in the determined PDD, version 2.0. However, ERUs generated in 2003 are excluded from the calculation from a conservative standpoint. Therefore, 01/01/2004 was taken as the crediting period start date.

Project implementation status in the reporting period of 01/01/2008 – 30/06/2012, including the project milestones is provided in Table 1.

Table 1. Project implementation status

No	Name of activities	Units	2008	2009	2010	2011	2012 (6 months)
1	Replacement of PL wires by wires with biggest section at PL-0.4-20 kV	km	524.5	433.8	516.3	507.8	420.4
2	Power transformers overhauls	pcs	159	103	163	140	68
3	Construction of PL-10kV; PL-0.4 kV	km km	10.83 -	10.56 8.19	1.49 1.44	- -	2.46 6.53
4	Replacing the single-phase meters with high accuracy meters	pcs	23682	3212 5	3683 7	3436 8	29272
5	Replacement of wrecked PL-0.4kV	km	11.1	11.54	129.4	-	6.75
6	Installation of isolated cables at PL-0.4-20 kV	km	27	54	11	169.4	73.1
7	Construction of unloading substations	pcs	18.86	9.8	2.95	-	5
8	Replacement and installation of meters in front of buildings	pcs	869	1173	1423	4204 3	33 264
9	Change of wrecked PL-10kV	km	41	120	152	-	7.86
10	TP-10/0.4kV overhauls	pcs	-	-	3.45	1458	784
11	Replacement of worn-out oil switches with vacuum ones	pcs	2150	3062	5156	99	67





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12	Change of the cable lines 10- 0.4 kV	km	24408	1682 2	1596 7	-	11.45
13	Installation of 3 –phase multifunctional meters	pcs	2	1	-	4625	2987
14	Replacement of insulators at PL-0.4-20 kV	pcs.	16	219	206	1827 6	11781
15	Introduction of ASKOE	pcs	168	390	456	-	2
16	Installation of RZ PA devices	pcs	524.5	433.8	516.3	131	61
17	Replacement of signal lamps with LED ones	pcs	159	103	163	285	198

Implementation of project measures is carried out according to the project plan.

The identified areas of concern as to the project implementation, project participants responses and Bureau Veritas Certification's conclusions are described in Appendix A to this report (refer to CAR 03, 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 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 are clearly identified, reliable and transparent.

Emission factors, including default emission factors, 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 identified areas of concern as to the compliance of the monitoring plan with the monitoring methodology, project participants responses and Bureau Veritas Certification's conclusions are described in Appendix A to this report (refer to CAR 04).

### 3.5 Revision of monitoring plan (99-100)

Not applicable



### **3.6 Data management (101)**

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

The implementation of data collection procedures is in accordance with the monitoring plan, including the quality control and quality assurance procedures. These procedures are mentioned in the section “References” of this report.

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

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

The data collection and management system for the project is in accordance with the monitoring plan.

The identified areas of concern as to the data management, project participants responses and Bureau Veritas Certification’s conclusions are described in Appendix A to this report (refer to CARs 05 - 08).

### **3.7 Verification regarding programmes of activities (102-110)**

Not applicable

## **4 VERIFICATION OPINION**

Bureau Veritas Certification has performed the initial and 1st periodic verification of the Power distribution system modernization of PJSC «AES KYIVOBLENERGO» Carbon Management Company GmbH Kyiv region, Ukraine, 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.

The management of Carbon Management Company GmbH is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions of the project on the basis set out within the project Monitoring Plan indicated in the final PDD version 2.0 dated 20/07/2012.




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The development and maintenance of records and reporting procedures in accordance with that plan, including the calculation and determination of GHG emission reductions from the project, is the responsibility of the management of the project.

Bureau Veritas Certification verified the Project Monitoring Report version 2.0 for the reporting period 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.

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 01/01/2008 to 30/06/2012

For the period from 01/01/2008 to 31/12/2008

Baseline emissions	: 443 510	tonnes of CO <sub>2</sub> equivalent.
Project emissions	: 0	tonnes of CO <sub>2</sub> equivalent.
Emission Reductions	: 443 510	tonnes of CO <sub>2</sub> equivalent.

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

Baseline emissions	: 473 211	tonnes of CO <sub>2</sub> equivalent.
Project emissions	: 0	tonnes of CO <sub>2</sub> equivalent.
Emission Reductions	: 473 211	tonnes of CO <sub>2</sub> equivalent.

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

Baseline emissions	: 432 932	tonnes of CO <sub>2</sub> equivalent.
Project emissions	: 0	tonnes of CO <sub>2</sub> equivalent.
Emission Reductions	: 432 932	tonnes of CO <sub>2</sub> equivalent.

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

Baseline emissions	: 671 342	tonnes of CO <sub>2</sub> equivalent.
Project emissions	: 0	tonnes of CO <sub>2</sub> equivalent.
Emission Reductions	: 671 342	tonnes of CO <sub>2</sub> equivalent.

For the period from 01/01/2012 to 30/06/2012

Baseline emissions	: 676 726	tonnes of CO <sub>2</sub> equivalent.
Project emissions	: 0	tonnes of CO <sub>2</sub> equivalent.
Emission Reductions	: 676 726	tonnes of CO <sub>2</sub> equivalent.



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Total for the monitoring period

Baseline emissions	: 2 697 721	tonnes of CO <sub>2</sub> equivalent.
Project emissions	: 0	tonnes of CO <sub>2</sub> equivalent.
Emission Reductions	: 2 697 721	tonnes of CO <sub>2</sub> equivalent.



## 5 REFERENCES

### Category 1 Documents:

Documents provided by CARBON MANAGEMENT COMPANY GMBH that relate directly to the GHG components of the project.

- /1/ Project Design Document Power distribution system modernization of PJSC «AES KYIVOBLENERGO» version 2.0 dated 20/07/2012
- /2/ Monitoring report for JI project Power distribution system modernization of PJSC «AES KYIVOBLENERGO» version 1.0 dated 19/08/2012
- /3/ ERUs calculation excel file «20120405\_KOE\_MR001.xls»
- /4/ Monitoring report for JI project Power distribution system modernization of PJSC «AES KYIVOBLENERGO» version 2.0 dated 28/09/2012
- /5/ ERUs calculation excel file «20120726\_KOE\_MR001 v02.xls»
- /6/ Letter of Approval №2756/23/7 dated 26/09/2012 issued by State Agency of ecological investments of Ukraine
- /7/ Letter of Approval J294-0485 dated 26/09/2012 issued by the Designated Focal Point of Switzerland

### Category 2 Documents:

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

- /1/ Structure of power balance and TPL for transfer within “AES Kyivoblenergo” PJSC 154-0,38 kV power grid for 2002
- /2/ Structure of power balance and TPL for transfer within “AES Kyivoblenergo” PJSC 154-0,38 kV power grid for 2003
- /3/ Structure of power balance and TPL for transfer within “AES Kyivoblenergo” PJSC 154-0,38 kV power grid for 2004
- /4/ Structure of power balance and TPL for transfer within “AES Kyivoblenergo” PJSC 154-0,38 kV power grid for 2005
- /5/ Structure of power balance and TPL for transfer within “AES Kyivoblenergo” PJSC 154-0,38 kV power grid for 2006
- /6/ Structure of power balance and TPL for transfer within “AES Kyivoblenergo” PJSC 154-0,38 kV power grid for 2007
- /7/ Structure of power balance and TPL for transfer within “AES Kyivoblenergo” PJSC 154-0,38 kV power grid for 2008
- /8/ Structure of power balance and TPL for transfer within “AES Kyivoblenergo” PJSC 154-0,38 kV power grid for 2009
- /9/ Structure of power balance and TPL for transfer within “AES Kyivoblenergo” PJSC 154-0,38 kV power grid for 2010
- /10/ Structure of power balance and TPL for transfer within “AES Kyivoblenergo” PJSC 154-0,38 kV power grid for 2011
- /11/ Power commercial accounting balance sheet dated 01/12/2012 (devices calibration schedule)
- /12/ Photo–Rehabilitated power line
- /13/ Photo–Rehabilitated Boryspil 10/35/810kB substation



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- /14/ Photo-sulfur hexafluoride switch which was replaced within the project activity
- /15/ Photo-power meter # 50082531
- /16/ Photo-power meter # 260171
- /17/ Personnel cooperation activities schedule for 2012
- /18/ Schedule of "AES Kyivoblenergo" PJSC personnel training in vocational schools for 2012
- /19/ Protocol # 5/21/2 dated 25/05/2012 on knowledge testing of regulations and state norms, field instructions on technical and safe operation of constructions, facilities and engineering networks, issued by the Novator Scientific and Methodological Centre
- /20/ Protocol # 62/12 dated 01/06/2012 on knowledge testing commission session
- /21/ Inquiry AA # 559401 from the Unified State Register of Enterprises and Organizations of Ukraine
- /22/ Form # 67-energo. Report on organization of the active energy accounting system at consumers as of 01/01/2012 and on installation of automated power accounting system and local data recording and processing system at consumer's power grid and power transporting organizations as of 01/01/2012
- /23/ Form # 67-energo. Report on organization of the active energy accounting system at consumers as of 01/01/2011 and on installation of automated power accounting system and local data recording and processing system at consumer's power grid and power transporting organizations as of 01/01/2011
- /24/ Form # 67-energo. Report on organization of the active energy accounting system at consumers as of 01/01/2010 and on installation of automated power accounting system and local data recording and processing system at consumer's power grid and power transporting organizations as of 01/01/2010
- /25/ Form # 67-energo. Report on organization of the active energy accounting system at consumers as of 01/01/2009 and on installation of automated power accounting system and local data recording and processing system at consumer's power grid and power transporting organizations as of 01/01/2009
- /26/ "AES Kyivoblenergo" CJSC automatic system for commercial accounting of power consumption (ASCAPC) within the Wholesale Energy Market of Ukraine (WPM). Technical project 518/05.1.AC-П3.
- /27/ Statement dated 12/08/2010 on commissioning of "AES Kyivoblenergo" CJSC automatic system for commercial accounting of power consumption on the boarder of the Wholesale Energy Market of Ukraine objects
- /28/ Certificate on introduction of the amendments to the Register of Automatic System for Commercial Accounting of Power Consumption "AES Kyivoblenergo" CJSC ASCAPC, registration # 171, valid from 01/01/2012 to 30/12/2014
- /29/ Certificate on introduction of the amendments to the Register of Automatic System for Commercial Accounting of Power



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- Consumption “AES Kyivoblenergo” CJSC ASCAPC, registration # 149, valid from 20/09/2011 to 30/12/2011
- /30/ Certificate # C8.219-2009 dated 09/07/2009 on state metrological attestation of “AES Kyivoblenergo” CJSC automatic system for commercial accounting of power consumption on the boarder of the Wholesale Energy Market of Ukraine objects
  - /31/ Protocol # Y04728690/8.210-2009П dated 09/07/2009 on state metrological attestation of “AES Kyivoblenergo” CJSC automatic system for commercial accounting of power consumption on the boarder of the Wholesale Energy Market of Ukraine objects
  - /32/ Photo–ASCAPC operator control panel
  - /33/ Investment plan of “AES Kyivoblenergo” CJSC for 2011, covering the period till 2015
  - /34/ Report dated 17/04/2012 on implementation of “AES Kyivoblenergo” CJSC investment development programme for 2011
  - /35/ Investment plan of “AES Kyivoblenergo” CJSC for 2010, covering the period till 2014
  - /36/ Report dated 25/01/2011 on implementation of “AES Kyivoblenergo” CJSC investment development programme for 2010
  - /37/ Investment plan of “AES Kyivoblenergo” CJSC for 2009, covering the period till 2013
  - /38/ Report dated 22/01/2010 on implementation of “AES Kyivoblenergo” CJSC investment development programme for 2009
  - /39/ Investment plan of “AES Kyivoblenergo” CJSC for 2008, covering the period till 2012
  - /40/ Report dated 10/02/2009 on implementation of “AES Kyivoblenergo” CJSC investment development programme for 2008
  - /41/ Investment plan of “AES Kyivoblenergo” CJSC for 2007, covering the period till 2011
  - /42/ Report dated 18/01/2008 on implementation of “AES Kyivoblenergo” CJSC investment development programme for 2007
  - /43/ Investment plan of “AES Kyivoblenergo” CJSC for 2006, covering the period till 2010
  - /44/ Report dated 23/01/2007 on implementation of “AES Kyivoblenergo” CJSC investment development programme for 2006
  - /45/ Investment plan of “AES Kyivoblenergo” CJSC for 2005, covering the period till 2009
  - /46/ Report dated 25/01/2006 on implementation of “AES Kyivoblenergo” CJSC investment development programme for 2005
  - /47/ Investment plan of “AES Kyivoblenergo” CJSC for 2004, covering the period till 2008
  - /48/ Report dated 26/01/2005 on implementation of “AES Kyivoblenergo” CJSC investment development programme for 2004
  - /49/ Investment plan of “AES Kyivoblenergo” OJSC for 2003
  - /50/ Report dated 16/03/2004 on implementation of “AES Kyivoblenergo” OJSC investment development programme for 2003
  - /51/ Development programme of 35-110 kV power grids and decision on 0,4-(6)10 kV power grids rehabilitation for 2007-2011, “AES Kyivoblenergo” OJSC



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- /52/ Order # 727-p dated 11/09/2007 on approving the Development Programme of 35-110 kV Power Grids and Decision on 0,4-(6)10 kV Power Grids Rehabilitation for 2007-2011, issued by the Cabinet of Ministers of Ukraine
- /53/ Development programme of 35-110 kV power grids and decision on 0,4-(6)10 kV power grids rehabilitation for 2012-2015, "AES Kyivoblenergo" OJSC
- /54/ License Series АГ # 578470 on power transfer to "AES Kyivoblenergo" PJSC local power grids, issued by Ukrainian Electricity Supervision Authority
- /55/ List of Wholesale Energy Market points and dates of power accounting at "AES Kyivoblenergo" PJSC Wholesale Energy Market points dated 14/06/2012
- /56/ Passport-protocol on measuring unit of N. Petrivtsi PS 110/10 kV substation, В-10кВ Т-I adjunction
- /57/ Passport-protocol on measuring unit of N. Petrivtsi PS 110/10 kV substation, В-10кВ «ТП-949 №1» adjunction
- /58/ Passport-protocol on measuring unit of N. Petrivtsi PS 110/10 kV substation, В-10кВ Т-2 adjunction
- /59/ Passport-protocol on measuring unit of N. Petrivtsi PS 110/10 kV substation, В-10кВ «ТП-949 №2» adjunction
- /60/ Passport-protocol on measuring unit of Zhuliany PS 110/10 kV substation, В-10кВ Т-1 I с.ш. adjunction
- /61/ Passport-protocol on measuring unit of Zhuliany PS 110/10 kV substation, В-10кВ Т-2 II с.ш. adjunction
- /62/ Passport-protocol on measuring unit of Zhuliany PS 110/10 kV substation, В-10кВ Т-1 III с.ш. adjunction
- /63/ Passport-protocol on measuring unit of Zhuliany PS 110/10 kV substation, В-10кВ Т-2 IV с.ш. adjunction
- /64/ Passport-protocol on measuring unit of KPTF PS 35/10 kV substation, ПЛ-35 "ДТЕЦ" adjunction
- /65/ Passport-protocol on measuring unit of Mostyshche PS 35/10 kV substation, Л-10кВ "ТП # 266" adjunction
- /66/ Passport-protocol on measuring unit of Mostyshche PS 35/10 kV substation, Л-10кВ "ТП # 325" adjunction
- /67/ Passport-protocol on measuring unit of Mostyshche PS 35/10 kV substation, Л-10кВ "ТП # 3030" adjunction
- /68/ Passport-protocol on measuring unit of Irpin PS 110/10 kV substation, ПЛ-110кВ "Северна-3" (Serverna-3) adjunction
- /69/ Passport-protocol on measuring unit of Irpin PS 110/10 kV substation, ПЛ-110кВ "Біличі" (Bilychi) adjunction
- /70/ Passport-protocol on measuring unit of Irpin PS 110/10 kV substation, ОБ-110кВ adjunction
- /71/ Passport-protocol on measuring unit of Vyshhorod PS 110/10/6 kV substation, Л-10кВ "ТП-7567" adjunction
- /72/ Passport-protocol on measuring unit of Vyshhorod PS 110/10/6 kV substation, Л-10кВ "ТП-7305" adjunction
- /73/ Passport-protocol on measuring unit of TP 10/0,4 kV ТП-2416 substation, В-0,4кВ "ТП-2416 Т-1" adjunction





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- /74/ Passport-protocol on measuring unit of TP 10/0,4 kV ТП-2416 substation, В-0,4кВ “ТП-2416 Т-2” adjunction
- /75/ Passport-protocol on measuring unit of TP 10/0,4 kV ТП-2930 substation, В-0,4кВ “ТП-2930 Т-1” adjunction
- /76/ Passport-protocol on measuring unit of TP 10/0,4 kV ТП-2930 substation, В-0,4кВ “ТП-2930 Т-2” adjunction
- /77/ Passport-protocol on measuring unit of TP 10/0,4 kV “РП-261” substation, В-0,4кВ “РП-261 Т-1” adjunction
- /78/ Passport-protocol on measuring unit of TP 10/0,4 kV “РП-261” substation, В-0,4кВ “РП-261 Т-2” adjunction
- /79/ Passport-protocol on measuring unit of TP 10/0,4 kV “РП-296” substation, В-0,4кВ “РП-296” adjunction
- /80/ Passport-protocol on measuring unit of TP 10/0,4 kV “ТП-3238 Т-1” substation, В-0,4кВ “ТП-3238 Т-1” adjunction
- /81/ Passport-protocol on measuring unit of TP 10/0,4 kV “ТП-963” substation, В-0,4кВ “ТП-963” adjunction
- /82/ Passport-protocol on measuring unit of TP 10/0,4 kV “ТП-1306” substation, В-0,4кВ “ТП-1306” adjunction
- /83/ Passport-protocol on measuring unit of SV 10 kV “РП-4” substation, СВ-10кВ “РП-4” adjunction
- /84/ Passport-protocol on measuring unit of V. Oleksandrivka PS 110/10 kV substation, Л-10кВ “РП-261” adjunction
- /85/ Passport-protocol on measuring unit of Oseschyna PS 110/6 kV substation, В-6кВ Т-1 adjunction
- /86/ Passport-protocol on measuring unit of Oseschyna PS 110/6 kV substation, В-6кВ Т-2 adjunction
- /87/ Passport-protocol on measuring unit of Kalena PS 35/10 kV substation, ПЛ-35кВ «Калена-Фастів» (Kalen-Fastiv) adjunction
- /88/ Passport-protocol on measuring unit of Myronivka PS 110/35/27,5/10 kV substation, ПЛ-110кВ “РМЗ” adjunction
- /89/ Passport-protocol on measuring unit of Myronivka PS 110/35/27,5/10 kV substation, ПЛ-110кВ “Завадівка” (Zavadivka) adjunction
- /90/ Passport-protocol on measuring unit of Myronivka PS 110/35/27,5/10 kV substation, ПЛ-110кВ “Юрківка” (Yurkivka) adjunction
- /91/ Passport-protocol on measuring unit of Myronivka PS 110/35/27,5/10 kV substation, ОБ-110кВ adjunction
- /92/ Passport-protocol on measuring unit of Kolos PS 110/35/27,5/10 kV substation, Kaniv HPS ПЛ-110кВ adjunction
- /93/ Passport-protocol on measuring unit of Kolos PS 110kV substation, МПЛ-110кВ “Колос” (Kolos) adjunction
- /94/ Passport-protocol on measuring unit of Seleksiina PS 110/35/10 kV substation, Kaniv HPS ПЛ-110кВ adjunction
- /95/ Passport-protocol on measuring unit of Seleksiina PS 110/35/10 kV substation, Kolos-Kaniv HPS ПЛ-110кВ adjunction
- /96/ Passport-protocol on measuring unit of Bohuslav 110/35/10 kV substation, Myronivka-Yurkivka ПЛ-110 adjunction
- /97/ Passport-protocol on measuring unit of Medvin 110/10 kV



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- substation, Myronivka-Yurkivka ПЛ-110 adjunction
- /98/ Passport-protocol on measuring unit of Medvin 110 kV substation, Boiarka ПЛ-10 adjunction
  - /99/ Passport-protocol on measuring unit of Brylivka 110/10 kV substation, Zhashkiv ПЛ-110кВ adjunction
  - /100/ Passport-protocol on measuring unit of Ivanivka 35/10 kV substation, ПЛ-35кВ ХПП adjunction
  - /101/ Passport-protocol on measuring unit of Ivanivka PS substation, ПЛ-0,4кВ "Посьолок" (Posiolok) adjunction
  - /102/ Passport-protocol on measuring unit of Kozhanka PS 110/35/10 kV substation, В-10кВ Т-1 adjunction
  - /103/ Passport-protocol on measuring unit of Kozhanka PS 110/35/10 kV substation, Romanivka Л-10кВ adjunction
  - /104/ Passport-protocol on measuring unit of Kozhanka PS 110/35/10 kV substation, V.Polovetske ПЛ-35 adjunction
  - /105/ Passport-protocol on measuring unit of Kozhanka PS 110/35/10 kV substation, В-10кВ Т-2 adjunction
  - /106/ Passport-protocol on measuring unit of Kozhanka PS 110/35/10 kV substation, Stavyshche Л-10кВ adjunction
  - /107/ Passport-protocol on measuring unit of Kozhanka PS 110/35/10 kV substation, ТВП-1 0,23кВ adjunction
  - /108/ Passport-protocol on measuring unit of Kozhanka PS 110/35/10 kV substation, ТВП-2 0,23кВ adjunction
  - /109/ Passport-protocol on measuring unit of Fastiv PS 110/35/10 kV substation, Brivky ПЛ-110 adjunction
  - /110/ Passport-protocol on measuring unit of Fastiv PS 110/35/10 kV substation, Koziatyn ПЛ-110 adjunction
  - /111/ Passport-protocol on measuring unit of Fastiv PS 110/35/10 kV substation, ОБ-110кВ adjunction
  - /112/ Passport-protocol on measuring unit of Makariv PS 110/35/10 kV substation, ПЛ-110кВ adjunction
  - /113/ Passport-protocol on measuring unit of Teteriv PS 110/27,5/10 kV substation, Pinizevychi ПЛ-110кВ adjunction
  - /114/ Passport-protocol on measuring unit of Teteriv PS 110/27,5/10 kV substation, ОБ-110кВ adjunction
  - /115/ Passport-protocol on measuring unit of Fastiv 110/35/10 kV substation, В-110 Т-3 adjunction
  - /116/ Passport-protocol on measuring unit of Fastiv 110/35/10 kV substation, В-110 Т-4 adjunction
  - /117/ Passport-protocol on measuring unit of Fastiv PS 110/35/10 kV substation, Л-10кВ ТП10 adjunction
  - /118/ Passport-protocol on measuring unit of Fastiv PS 110/35/10 kV substation, Л-10кВ ТП14 adjunction
  - /119/ Passport-protocol on measuring unit of Fastiv PS 110/35/10 kV substation, Л-10кВ ТП17 adjunction
  - /120/ Passport-protocol on measuring unit of Fastiv PS 110/35/10 kV substation, Л-10кВ ТП49 adjunction
  - /121/ Passport-protocol on measuring unit of ТП76 substation, ВВОД-ТП76 adjunction



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- /122, Passport-protocol on measuring unit of Yahotyn PS 110/35/27,5/10 kV substation, B-110кВ Т-3 adjunction
- /123, Passport-protocol on measuring unit of Yahotyn PS 110/35/27,5/10 kV substation, B-35кВ Т-3 adjunction
- /124, Passport-protocol on measuring unit of Yahotyn PS substation, Л-0,4кВ ВП adjunction
- /125, Passport-protocol on measuring unit of Yahotyn PS 110/35/27,5/10 kV substation, Л-10кВ “Л-34 Баришівка” (L-34 Baryshivka) adjunction
- /126, Passport-protocol on measuring unit of PS 3ЕТО 110/10 кВ substation, ТП-55 adjunction
- /127, Passport-protocol on measuring unit of PS 3ЕТО 110/10 кВ substation, ТП-2 adjunction
- /128, Passport-protocol on measuring unit of Sadova PS substation, Yahotyn Л-10кВ # 5 РП adjunction
- /129, Passport-protocol on measuring unit of Kirovska PS 35/10 kV substation, Л- ТП-148 adjunction
- /130, Passport-protocol on measuring unit of Kalyta PS substation, Kozelets ПЛ-110кВ adjunction
- /131, Passport-protocol on measuring unit of Vyshhorod PS substation, Л-6кВ КГЕС-1 adjunction
- /132, Passport-protocol on measuring unit of Vyshhorod PS substation, Л-6кВ КГЕС-2 adjunction
- /133, Passport-protocol on measuring unit of ChAES DSP substation, B-110кВ АТ-1 adjunction
- /134, Passport-protocol on measuring unit of ChAES DSP substation, B-110кВ АТ-2 adjunction
- /135, Passport-protocol on measuring unit of ChAES DSP substation, OB-110кВ adjunction
- /136, Passport-protocol on measuring unit of ChAES DSP substation, B-6кВ 2ТРА adjunction
- /137, Passport-protocol on measuring unit of ChAES DSP substation, B-6кВ 2ТРБ adjunction
- /138, Passport-protocol on measuring unit of ChAES DSP substation, B-6кВ 3ТРА adjunction
- /139, Passport-protocol on measuring unit of ChAES DSP substation, B-6кВ 3ТРБ adjunction
- /140, Passport-protocol on measuring unit of Trypilska TPS substation, Л-6кВ Nasosna 2-го п.72Т adjunction
- /141, Passport-protocol on measuring unit of Trypilska TPS substation, Л-6кВ Nasosna 2-го п.73Т adjunction
- /142, Passport-protocol on measuring unit of Trypilska TPS substation, Л-6кВ Artsverdlovyna 532 adjunction
- /143, Passport-protocol on measuring unit of HPP PS T110/6 substation, Л-6кВ Ф№7 (HPP ТР ТНР) adjunction
- /144, Passport-protocol on measuring unit of Trypilska TPS substation, Л-0,4кВ ПТЕМ adjunction
- /145, Passport-protocol on measuring unit of Trypilska TPS substation, Л-0,4кВ КНС-1 input # 2 adjunction




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- /146, Passport-protocol on measuring unit of Trypilska TPS substation, Л-0,4кВ KHC-1 input # 1 adjunction
- /147, Passport-protocol on measuring unit of Trypilska TPS substation, Л-0,4кВ Sverdlovyna 13,29 adjunction
- /148, Passport-protocol on measuring unit of Trypilska TPS substation, Л-0,4кВ HP NEK Ukrenergo, B-1 adjunction
- /149, Passport-protocol on measuring unit of Trypilska TPS substation, Л-0,4кВ HP NEK Ukrenergo, B-2 adjunction
- /150, Passport-protocol on measuring unit of Trypilska TPS substation, Л-0,4кВ ATZT Ukomplain, B-2 adjunction
- /151, Agreement # 891 dated 04/12/2006 on right to provide power meters repair and calibration services
- /152, Additional agreement # 4 to the Agreement # 891 dated 04/12/2006 on right to provide power meters repair and calibration services
- /153, Statement dated 30/11/2011 of working technical commission on commissioning of delivery grid cost up to 1 mln UAH (replacement of Hlushky ПЛ-10кВ district from оп. 83 to КТП-249, Hlushky, Bila Tserkva district)
- /154, Contract # 1019 dated 03/10/2011 on mounting and construction works from reconstruction of 0,4-10 kV grids with "AES Kyivoblenergo" PJSC accounting
- /155, Statement dated 26/12/2011 of working technical commission on commissioning of delivery grid cost up to 1 mln UAH (reconstruction of 0,47кВ Л-1, 2 ТП1040, Rudyky, Obukhiv district, Kyiv region)
- /156, Contract # 243 dated 21/03/2011 on mounting and construction works from reconstruction of 0,4-10 kV grids with "AES Kyivoblenergo" PJSC accounting
- /157, Order # 586 dated 22/06/2012 on storage of documents concerning JI project within Kyoto Protocol
- /158, Protocol # 8 dated 17/09/2002 on "AES Kyivoblenergo" CJSC shareholders meeting

**Persons interviewed:**

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

- |     |                      |  |
|-----|----------------------|--|
| /1/ | Oleksandr Kharchenko | Head of the Power Metering and Metrology Department of PJSC "AES Kyivoblenergo"                                |
| /2/ | Vasyl Morhun         | Head of the Training Centre of PJSC "AES Kyivoblenergo"  |
| /3/ | Tetiana Maiorenko    | Networks development planning engineer at PJSC "AES Kyivoblenergo"   |
| /4/ | Oleh Perushko        | Head of the Informational Technologies Department Technological Processes Automatization Division of PJSC "AES |



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/5/	Oleksii Anatoliev	Kyivoblenergo” Head of the ASCAPS Calculations Division of PJSC “AES Kyivoblenergo” Commercial Department
/6/	Ella Marchenko	Head of the Database Analysis and Planning Department of PJSC “AES Kyivoblenergo”
/7/	Ihor Nein	Head of the Power Balance Analysis Department of PJSC “AES Kyivoblenergo” Regulatory Department
/8/	Viacheslav Kobzar	Analyst of PJSC “AES Kyivoblenergo” Regulatory Department
/9/	Andrii Radchenko	Engineer on shift (Boryspil) of PJSC “AES Kyivoblenergo”
/10/	Denys Rzhhanov	Carbon Management Company GmbH Deputy Director for technical affairs



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**APPENDIX A: VERIFICATION PROTOCOL**  
**VERIFICATION PROTOCOL**
**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
<b>Project approvals by Parties involved</b>				
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?	<p><b><u>Corrective Action Request (CAR) 01.</u></b> Please provide the Letter of Approval issued by the DFPs and specify its numbers and dates in the MR.</p> <p><b><u>Corrective Action Request (CAR) 02</u></b> Please specify ITL of the project in the MR.</p>	OK	OK
91	Are all the written project approvals by Parties involved unconditional?	See CAR 01 above	OK	OK
<b>Project implementation</b>				
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 UNFCCC JI website?	<p>Project is implemented in accordance with the PDD, determination of which is deemed to be final</p> <p><b><u>Clarification Request (CL) 01</u></b> Please provide information about the status of the project, broken down by year</p>	OK	OK
93	What is the status of operation of the project during the monitoring period?	<p><b><u>Corrective Action Request (CAR) 03</u></b> Please correct the length of the monitoring period</p>	OK	OK
<b>Compliance with monitoring plan</b>				
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?	Yes, the monitoring occurs in accordance with the monitoring plan included in the PDD.	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) above, influencing the baseline emissions or net	Yes, all relevant key factors were taken into account, as appropriate.	OK	OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	removals and the activity level of the project and the emissions or removals as well as risks associated with the project 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 or enhancements of net removals are clearly identified, reliable and transparent	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?	<b>Corrective Action Request (CAR) 04</b> For parameter $GEF_y$ please indicate source of date	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?	Yes, the calculation of emission reductions based on conservative assumptions and the most plausible scenarios in a transparent manner	OK	OK
<b>Applicable to JI SSC projects only – Not applicable</b>				
<b>Applicable to bundled JI SSC projects only – Not applicable</b>				
<b>Revision of monitoring plan</b>				
<b>Applicable only if monitoring plan is revised by project participant – Not applicable</b>				
<b>Data management</b>				
101 (a)	Is the implementation of data collection procedures in accordance with the monitoring plan, including the quality control and quality assurance procedures?	Yes, the implementation of data collection procedures is in accordance with the monitoring plan, including the quality control and quality assurance procedures.	OK	OK
101 (b)	Is the function of the monitoring equipment, including its calibration status, in order?	<b>Corrective Action Request (CAR) 05</b> Please provide passport and calibration certificate that is the evidence of measuring accuracy in monitoring period for electric power meters.  <b>Corrective Action Request (CAR) 06</b>	OK	OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		Please specify the calibration interval for electric power meters.  <b><u>Corrective Action Request (CAR) 07</u></b> Please provide procedures in the event of emergencies and procedures to identify and eliminate fails at JSC "NPP Kyivoblenergo."  <b><u>Corrective Action Request (CAR) 08</u></b> Please check the numeration of all tables in the Monitoring Report		
101 (c)	Are the evidence and records used for the monitoring maintained in a traceable manner?	The evidences and records used for the monitoring maintained are in a traceable manner	OK	OK
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	OK	OK
<b>Verification regarding programmes of activities (additional elements for assessment) – Not applicable</b> <b>Applicable to sample-based approach only – Not applicable</b>				

**Table 2 Resolution of Corrective Action and Clarification Requests**

Draft report clarification and corrective action requests by verification team	Ref. to checklist question in table 1	Summary of project participant response	Verification team conclusion
<b><u>Corrective Action Request (CAR) 01.</u></b> Please provide the Letter of Approval issued by the DFPs and specify its numbers and dates in the MR.	90	Letters of Approval issued by the DFP were provided.	Issue is closed





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<b><u>Corrective Action Request (CAR) 02</u></b> Please specify ITL of the project in the MR.	90	Corresponding information was added to the MR. See MR version 2.0	Issue is closed
<b><u>Clarification Request (CL) 01</u></b> Please provide information about the status of the project, broken down by year	92	Table added in MR. See MR version 2.0	Issue is closed
<b><u>Corrective Action Request (CAR) 03</u></b> Please correct the length of the monitoring period	93	Length of crediting period was corrected. See MR version 2.0	Issue is closed
<b><u>Corrective Action Request (CAR) 04</u></b> For parameter $GEF_y$ please indicate source of date	95 (c)	Source of data is corrected See MR version 2.0	Issue is closed
<b><u>Corrective Action Request (CAR) 05</u></b> Please provide passport and calibration certificate that is the evidence of measuring accuracy in monitoring period for electric power meters	101 (b)	Passports for electric power meters and passport-protocols measuring complexes provided verifiers. See supporting file passport.zip	Issue is closed
<b><u>Corrective Action Request (CAR) 06</u></b> Please specify the calibration interval for electric power meters.	101 (b)	In the table "Measuring equipment involved in the monitoring project," added column with information about the calibration interval for electric power meters. See MR version 2.0	Issue is closed
<b><u>Corrective Action Request (CAR) 07</u></b> Please provide the documental evidences of personnel training for every year of the monitoring period.	101 (b)	Corresponding information was added to the MR. See MR version 2.0	Issue is closed
<b><u>Corrective Action Request (CAR) 08</u></b> Please check the numeration of all tables in the Monitoring Report	101 (b)	Corrected. See MR version 2.0	Issue is closed