VERIFICATION REPORT "DTEK SKHIDENERGO" LLC

VERIFICATION OF THE RECONSTRUCTION OF UNITS1,2,3 AND 4 AT ZUYEVSKA THERMAL POWER PLANT

(THIRD PERIODIC VERIFICATION 01/03/2011-31/12/2011)

REPORT NO. UKRAINE-VER/0422/2012

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BUREAU VERITAS CERTIFICATION

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VERIFICATION REPORT RECONSTRUCTION OF UNITS1,2,3 AND 4 AT ZUYEVSKA THERMAL POWER PLANT

Date of first issue:	Organizational unit:
01/03/2012	Bureau Veritas Certification Holding SAS
Client:	Client ref.:
DTEK SKHIDENERGO" LLC	Oleksiy Zayets

Summary:
Bureau Veritas Certification has made the 3rd verification of the "Reconstruction of Units1,2,3 and 4 at Zuyevska Thermal Power Plant", JI Registration Reference Number 0198 project of "DTEK Skhidenergo" LLC located in Zugres village, Donetsk Region, Ukraine, and applying the 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 126649 tonnes of CO2 equivalent for the monitoring period 01/03/2011-31/12/2012.

Report No.:	Subject Group:
UKRAINE-ver/0422/2012	JI
Project title:	
Reconstruction of Units1,2,3 and 4 at Zuyevska Thermal Power Plant	
Work carried out by:	
Oleg Skoblyk – Team Leader, Lead Verifier Vyacheslav Yeriomin – Team Member, Verifier	
Work reviewed by:	
Ivan Sokolov - Internal Technical Reviewer Daniil Ukhanov – Technical Specialist	
Work approved by:	
Ivan Sokolov - Operational Manager	

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1 INTRODUCTION

”DTEK Skhidenergo” LLC has commissioned Bureau Veritas Certification to verify the emissions reductions of its JI project “Reconstruction of Units1,2,3 and 4 at Zuyevska Thermal Power Plant” (hereafter called “the project”) at Zugres village Donetsk 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 and monitoring plan 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:

Oleg Skoblyk
Bureau Veritas Certification Team Leader, Climate Change Verifier

Vyacheslav Yeriomin
Bureau Veritas Certification Climate Change Verifier

This verification report was reviewed by:

Ivan Sokolov
Bureau Veritas Certification, Internal Technical Reviewer

Daniil Ukhanov
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 Global Carbon B.V. and additional background documents related to the project design and baseline, i.e. country Law, Project Design Document (PDD), Approved CDM methodology (if applicable) 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 2.4 and project as described in the determined PDD.

2.2 Follow-up Interviews

On 28/02/2012 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 ”DTEK Skhidenergo ” LLC were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
"DTEK Skhidenergo" LLC	- 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 - Training of personnel - Quality management procedures and technology - Internal audits and check-ups
CONSULTANT Global Carbon B.V.	- Monitoring plan - Monitoring report - Deviations from PDD - ERUs calculation model

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 11 Corrective Action Requests, 1 Clarification Requests, and 0 Forward Action 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

No FARs are available from previous verifications.

3.2 Project approval by Parties involved (90-91)

Written project approval has been obtained by the Host party, Letter of Approval #1231/23/7 issued by National Environmental Investment Agency of Ukraine on the 19/08/2010, and the Sponsor Party, Letter of Approval #2009JI22 issued by SenterNovem Netherlands 7/01/2010.

The abovementioned written approval is unconditional.

3.3 Project implementation (92-93)

The main goal of the project is reduction of specific fuel consumption per one MW of electricity supplied to the grid. Zuevska Thermal Power Plant supply heat energy to local consumers, project developer excludes thermal energy supply from the project for conservativeness.

The main actions in project activity include:

1. Modernisation of steam turbine generator (STG), including:
    a. Reconstruction of low pressure cylinder of STG, replacement and modernisation of STG auxiliaries
    b. Rehabilitation of high and middle pressure STG cylinders

c. Rehabilitation of regeneration equipment and vacuum system
d. Retrofit of alternator cooling system

2. Rehabilitation of the boiler
3. Modernisation of the unit control system
4. Rehabilitation of the unit step-up transformer
5. Modernisation of switch room equipment, partial replacement of circuit breakers
6. Improvement of ESP (electrostatic precipitators) operation
7. Plant auxiliaries modernisation (mainly plant cooling part, which includes cooling tower, cooling water supply and return channels).

During the monitoring period operational personal of Zuevska TPP and contractor companies provide next measures in project boundaries at Unit #1:

- Modernization of boiler TPP-312A
- Modernization of the turbine K-300-240-2
- Modernization of alternator TGV-300-2U3
- Modernization of electrostatic precipitators

Statement on work acceptance for Unit #1 was signed 17/05/2011

In consequence of measures implemented in frames of project activity capacity of Unit#1 was raised up to 325 MW and Unit#2 to 315MW.

Mid repairs, capital and regular repairs are in common practice in Ukraine energetic industry. Time schedule of routine maintenance was provided by the project developer in the monitoring report. The “DTEK Skhidenergo” documents dividing project and routine repair works were provided to AIE and indicated in the section 5 REFERENCES in table Category 2 documents.

The difference between ERUs indicated in the PDD and in the Monitoring Report was explained by the following statement:

- Electricity production was lower than planned during the monitoring period, Unit #2 held in August-September 2011 and of Unit #3 held in May,

CAR01-CAR04 and their resolutions/conclusions applicable to project implementation status are listed in the APPENDIX A: COMPANY PROJECT VERIFICATION PROTOCOL (Table 2) below.

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 or enhancements of net removals, key factors, such as total electric energy output, quantity of each fuel

used in electricity production, emission factors, oxidation factors, net calorific values for each kind of fuel, 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 were taken into account, as appropriate.

Data sources used for calculating emission reductions or enhancements of net removals, such as TPPs statistic report 3-tech forms, laboratory reports on coal and heavy fuel oil NCV, reports of fuel-transport departments 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 or enhancements of net removals is based on conservative assumptions and the most plausible scenarios in a transparent manner.

CAR05-CAR08, CL01 and their resolutions/conclusions applicable to the compliance of the monitoring plan to the monitoring methodology are listed in the APPENDIX A: COMPANY PROJECT VERIFICATION PROTOCOL (Table 2) below

3.5 Revision of monitoring plan (99-100)

Project participants provided adequate substantiation of the proposed revision.
The proposed revision improves the accuracy and applicability of the information being collected, compared with the initial monitoring plan without changing conformity with the applicable rules and regulations on establishing the monitoring plan.

Actual conversion factor from kcal/kg (or kcal/m3) into GJ/t (or GJ/1000 m3) differs from the one in the previous monitoring report for the respective period stated in the section A.4. of the Monitoring Report as shown in a table below:

Actual conversion factor from kcal/kg (or kcal/m3) into GJ/t (or GJ/1000 m3) differs from the one in the previous monitoring report for the respective period	Conversion factor value
MR #1, #2	0.004187
MR #3	0.0041868

Conversion factor differs, because it is rounded in the text of second MR, but not in the calculating model. Calculations were made using conversion factor, stated in current MR. This amendment does not influence the

amount of emission reduction. The corrected conversion factor is used in the formulas of the MR.
The changes that were introduced will not affect the conservative approach to emission reduction calculations and procedures for collecting and archiving of data.
Management system and operating system are suitable for reliable monitoring of the project according to the proposed revision.

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.

The function of the monitoring equipment, including its calibration status, is in order.
Power meters are in calibration interval. Calibration of power meters are provided by State Enterprise "DonetskDerzhstandartmetrologiya" measuring laboratory. During the monitoring period power meters were replaced by operating personnel of Zyevska TPP Electric Department and representatives of State Enterprise "DonetskDerzhstandartmetrologiya". Replacement of power meters types Euro Alpha, STK, CE to power meters Actaris SL 7000 will improve applicability of automatic system for commercial accounting of power consumption of "DTEK Skhidenergo" LLC. Replacement of power meters is a part of automatic system for commercial accounting of power consumption updating, provided on "DTEK Skhidenergo" LLC TPPs (Zyevska, Luhanska, Kurakhovska) in 2011 year.

The commercial account of consumed coal is performed on wagon scales VVET-150K. The amount of coal consumed in project frames is measured by coal belt scales ER-MAK installed between coal warehouse and coal mills. ER-MAK scales are calibrated by Production Measuring Laboratory of Zyevska TPP.

Production Measuring Laboratory of Zyevska TPP is certified by SE "Donetskderzhstandartmetrologiya". Accreditation certificates on TPPs laboratory valid during the monitoring period was provided to the verification team.

The amount of heavy fuel oil consumed by TPP is measured by measuring line three times each day; the daily consumption is recalculated into the mass units.

The natural gas consumption is measured by gas meter Flowtec-2, which is a property of gas Supply Company and calibrated by Ukrainian Centre for Standardization and Metrology in Donetsk Region.

The NCV of coal and heavy fuel oil is measured by TPPs Chemical Laboratory. The data on natural gas NCV is indicated in monthly certificates of gas supplying company. The samples of coal and heavy fuel oil are analysed each five days. The examples of analysis protocols are provided to the verification team.

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

The difference between emissions of CO_2 indicated in the 2-tp form and emission reduction calculations is explained by amount of fuel used for electricity production in project activity not include amount of fuel used for thermal energy supply.

The data collection and management system for the project is in accordance with the monitoring plan. The data flow scheme provided in the monitoring report is objective and functional.

CAR09-CAR11, CL02 and their resolutions/conclusions applicable to the project data management are listed in the APPENDIX A: COMPANY PROJECT VERIFICATION PROTOCOL (Table 2) below

3.7 Verification regarding programmes of activities (102-110)

“Not applicable”

4 VERIFICATION OPINION

Bureau Veritas Certification has performed the 3rd periodic verification of the “Reconstruction of Units1,2,3 and 4 at Zuyevska Thermal Power Plant” Project in Zugres village, Donetsk Region, Ukraine, which applies the 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 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 ”DTEK Skhidenergo” LLC 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

and Verification Plan indicated in the final PDD version 2.8. 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 2.4 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 01/03/2011 to 31/12/2012

Baseline emissions	: 5157302	tonnes of CO_2 equivalent.
Project emissions	: 5030653	tonnes of CO_2 equivalent.
Emission Reductions	: 126649	tonnes of CO_2 equivalent.

5 REFERENCES

Category 1 Documents:
Documents provided by Global Carbon B.V. that relate directly to the GHG components of the project.

/1/ Project Design Document "Reconstruction of Units1,2,3 and 4 at Zuyevska Thermal Power Plant" version 2.8 dated 15/12/2010
/2/ Monitoring Report "Reconstruction of Units1,2,3 and 4 at Zuyevska Thermal Power Plant" version 1.0, dated 25/01/2012
/3/ Monitoring Report "Reconstruction of Units1,2,3 and 4 at Zuyevska Thermal Power Plant" version 2.4, dated 28/03/2012
/4/ Letter of approval #1231/23/7 issued by National Environmental Investment Agency dated 19/08/2010
/5/ Letter of approval №2009JI22 issued by SenterNovem Netherlands dated 7/01/2010
/6/ ERUs calculation Excel file "20122501_MR003_DTEK_ver_2.0_OM" dated 25/02/2012

/7/ ERUs calculation Excel file “20122803_MR003_DTEK_ver_2.31_OM” dated 09/04/2012
/8/ Determination and verification manual, version 01

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

/1/ Technical passport and calibration certificate of conveyor belt scales #31
/2/ Technical passport and calibration certificate of coal scales VVET-150K #0056
/3/ Statement on commissioning scales VVET-150K #0056 dated 20/09/2011
/4/ Certificate #92 dated 07/09/2011 on wagon scales VVET-150K #0056 metrological attestation
/5/ Coal belt scales MIKA indicator
/6/ MIKA #1757 scales indicator
/7/ MIKA #1803 scales indicator
/8/ Pressure sensor #02959 of conveyor belt scales MIKA
/9/ Velocity sensor of coal belt scales
/10/ Pressure sensors of coal belt scales
/11/ Pressure sensor #02957 of conveyor belt scales MIKA
/12/ Power meter SL7000 #53105794 connection 201T «A» main
/13/ Power meter EA05RALX-P4B-4 #01 146 200 connection 201T «A» dupl.
/14/ Power meter SL7000 #53101802 connection 201T «B» main
/15/ Power meter EA05RALX-P4B-4 #01 146 204 connection 201T «B» dupl.
/16/ Power meter SL7000 #53112326 connection 21T «B» main
/17/ Power meter SL7000 #53112347 connection 21T «B» dupl.
/18/ Power meter SL7000 #53112326 connection 21T «B» main. i #53112347 connection 21T «B» dupl.
/19/ Power meter SL7000 #53112337 connection 21T «A» main
/20/ Power meter SL7000 #53101017 connection 21T «A» dupl.
/21/ Power meter SL7000 #53112327 connection 22T «B» main
/22/ Power meter SL7000 #53112349 connection 22T «B» duplicate
/23/ Power meter SL7000 #53112346 connection 22T «A» main
/24/ Power meter SL7000 #53112338 connection 22T «A» дубл..
/25/ Power meter SL7000 #53112350 connection 23T «B» main
/26/ Power meter SL7000 #53101022 connection 23T «B» dupl..
/27/ Power meter SL7000 #53112348 connection 23T «A» main
/28/ Power meter SL7000 #53101027 connection 23T «A» дубл..
/29/ Power meter SL7000 #53112340 connection 24T «B» main
/30/ Power meter SL7000 #53101057 connection 24T «B» dupl..
/31/ Power meter SL7000 #53112336 connection 24T «A» main.
/32/ Power meter SL7000 #53101037 connection 24T «A» dupl.
/33/ Power meter SL7000 #№53101791 connection G4 main..
/34/ Power meter SL7000 #53105769 connection G4 duplicate
/35/ Power meter SL7000 #53105775
/36/ Power meter SL7000 #53105793 connection G3 main
/37/ Power meter SL7000 #53105788 connection G2 main

/38/ Power meter SL7000 #53105785 connection G1 main
/39/ Power meter SL7000 #53105802
/40/ 6 tp form for 2011 year (Power station work report)
/41/ Statement on replacement of power meters connections 21TA, 21TB, dated 08/06/2011
/42/ Statement on replacement of power meters connections 22TA, dated 08/06/2011
/43/ Statement on replacement of power meters connections 22TB, dated 08/06/2011
/44/ Statement on replacement of power meters connections 23TA, 23TB, dated 07/06/2011
/45/ Statement on replacement of power meters connections 24TA, 24TB, dated 08/06/2011
/46/ Statement on replacement of power meters connections Generator1, Generator2, dated 09/06/2011
/47/ Statement on replacement of power meters connections Generator1, Generator2, dated 09/06/2011
/48/ Statement on replacement of power meters connections 21TA, 21TB, dated 17/08/2011
/49/ Statement on replacement of power meters connections 22TA, 22TB, dated 16/08/2011
/50/ Statement on replacement of power meters connections 23TA, 23TB, dated18/08/2011
/51/ Statement on replacement of power meters connections 24TA, 24TB, dated 18/08/2011
/52/ Statement on replacement of power meters connections Generator1, Generator2, dated 17/08/2011
/53/ Statement on replacement of power meters connection Generator2, dated 16/08/2011
/54/ Passport on natural gas physical and chemical characteristics for March 2011
/55/ Passport on natural gas physical and chemical characteristics for April 2011
/56/ Passport on natural gas physical and chemical characteristics for May 2011
/57/ Passport on natural gas physical and chemical characteristics for June 2011
/58/ Passport on natural gas physical and chemical characteristics for July 2011
/59/ Passport on natural gas physical and chemical characteristics for August 2011
/60/ Passport on natural gas physical and chemical characteristics for September 2011
/61/ Passport on natural gas physical and chemical characteristics for October 2011
/62/ Passport on natural gas physical and chemical characteristics for November 2011
/63/ Fax Gramm #517 on natural gas calorific value dated 28/12/11
/64/ Fax Gramm #492 on natural gas calorific value dated 08/12/11
/65/ Annex on attestation certificate #VL-601/2010. Production chemical laboratory SU “Zyevska TPP” attestation scope dated 16/12/2010
/66/ 3-tech form March 2011

/67/ 3-tech form April 2011
/68/ 3-tech form May 2011
/69/ 3-tech form June 2011
/70/ 3-tech form July 2011
/71/ 3-tech form August 2011
/72/ 3-tech form September 2011
/73/ 3-tech form October 2011
/74/ 3-tech form November 2011
/75/ 3-tech form December 2011
/76/ Report on air protection (2tp form) for 2011 year
/77/ Report on wastes for 2011 year (form#1 wastes)
/78/ Fuel sample analysis for 06-10/09/2011
/79/ Fuel sample analysis for 26-30/042011
/80/ Fuel sample analysis for 21-25/05/.2011
/81/ Fuel sample analysis for 26-30/10/2011
/82/ Fuel sample analysis for 26-30/11/2011
/83/ Fuel sample analysis for 16-20/12/2011
/84/ Fuel sample analysis for 26-31/03/2011
/85/ Fuel sample analysis for 21-26/06/2011
/86/ Fuel sample analysis for 21-25/08/2011
/87/ Fuel sample analysis for 11-15/09/2011
/88/ Fuel sample analysis for 01-05/07/2011
/89/ Statement ДЦ #16411021770 dated 27/02/2011 on finished by construction object to project documentation and operating readiness
/90/ Statement on work readiness of Unit#1 SU “Zuevska TPP” dated 17/05/2011
/91/ Statement #183 on work acceptance Unit#2 SU “Zuevska TPP” dated 22/04/2009
/92/ Statement on technical calibration of power meter SL7000 #53095199 dated #04/11/2011
/93/ Statement on technical calibration of power meters EA02RAL #01147070, SL7000 #53101802, EA02RALX #01146204 dated 30/08/2011
/94/ Statement on technical calibration of power meters EA02RAL #01147051, SL7000 #83105794, EA02RALX #01146200 dated 30/08/2011
/95/ Statement on technical calibration of power meter ACE6000 #55001757
/96/ Statement on technical calibration of power meter ACE6000 #55001747
/97/ Statement on replacement of power meter STK-1 #83226 to NIK2101-04 #37237772 dated #13/12/2011
/98/ Statement on technical calibration of power meter #017640 dated 28/12/2011
/99/ Statement on replacement of power meters on connections Backup exciter and Generator 4 dated 19/08/2011
/100/ Protocol on replacement and calibration of three-phase power meters CO-11446 #A4099557 to MIK210201-2E #3331053
/101/ Passport and calibration certificate on conveyor belt scales Er-Mak #1757
/102/ Passport and calibration certificate on conveyor belt scales Er-Mak #1803
/103/ Statement on commissioning conveyor belt scales Er-Mak #1757. 1803 dated 05/12/2008
/104/ Passport and calibration certificate on power meter EA02RAL-C-4 #01147041

connection Generator 1 main

/105/ Passport and calibration certificate on power meter 02QT4Mt #36106 connection Generator 1 duplicate

/106/ Passport and calibration certificate on power meter EA02RAL-C-4 #01147080 connection Generator 2 main

/107/ Passport and calibration certificate on power meter 02QT4Mt #36101 connection Generator 2 duplicate

/108/ Passport and calibration certificate on power meter EA02RAL-C-4 #01147064 connection Generator 3 main

/109/ Passport and calibration certificate on power meter 02QT4Mt #36104 connection Generator 3 duplicate

/110/ Passport and calibration certificate on power meter EA02RAL-C-4 #01147039 connection Generator 4 main

/111/ Passport and calibration certificate on power meter 02QT4Mt #36100 connection Generator 4 duplicate

/112/ Passport and calibration certificate on power meter EA02RAL-C-4 #01147105 power connection 21TA main

/113/ Passport and calibration certificate on power meter EA02RAL-C-4 #01147103 connection 21TB main

/114/ Passport and calibration certificate on power meter EA02RAL-C-4 #01147094 connection 22TA main

/115/ Passport and calibration certificate on power meter EA02RAL-C-4 #01147104 connection 22TB main

/116/ Passport and calibration certificate on power meter EA02RAL-C-4 #01147096 connection 23TA main

/117/ Passport and calibration certificate on power meter EA02RAL-C-4 #01147096 connection 23TB main

/118/ Passport and calibration certificate on power meter EA02RAL-C-4 #01147097 connection 24TA main

/119/ Passport and calibration certificate on power meter EA02RAL-C-4 #01147106 connection 24TB main

/120/ Passport and calibration certificate on power meter EA02RAL-C-4 #01147051 connection 201TA main

/121/ Passport and calibration certificate on power meter EA02RAL-C-4 #01147070 connection 201TB main

/122/ Passport and calibration certificate on power meter EA02RAL-C-4 #01147108 connection backup exciter

/123/ Passport and calibration certificate on power meter Enerhiia-9 #83226 connection Zyevka electro-mechanic plant

/124/ Passport and calibration certificate on power meter Enerhiia-9 #36102

/125/ Passport and calibration certificate on power meter SL7000 #53112337 connection 21TA main

/126/ Passport and calibration certificate on power meter SL7000 #53101017 connection 21TA duplicate

/127/ Passport and calibration certificate on power meter SL7000 #53112326 connection 21TB main

/128/ Passport and calibration certificate on power meter SL7000 #53112337

connection 21TB duplicate

/129/ Passport and calibration certificate on power meter SL7000 #53112346 connection 22TA duplicate

/130/ Passport and calibration certificate on power meter SL7000 #53112338 connection 22TA duplicate

/131/ Passport and calibration certificate on power meter SL7000 #53112327 connection 22TB main

/132/ Passport and calibration certificate on power meter SL7000 #53112349 connection 22TB duplicate

/133/ Passport and calibration certificate on power meter SL7000 #53112348 connection 23TA duplicate

/134/ Passport and calibration certificate on power meter SL7000 #53101027 connection 23TA duplicate

/135/ Passport and calibration certificate on power meter SL7000 #53112350 connection 23TB main

/136/ Passport and calibration certificate on power meter SL7000 #53101022 connection 23TB duplicate

/137/ Passport and calibration certificate on power meter SL7000 #53112336 connection 24TA main

/138/ Passport and calibration certificate on power meter SL7000 #53101037 connection 24TA duplicate

/139/ Passport and calibration certificate on power meter SL7000 #53112340 connection 24TB main

/140/ Passport and calibration certificate on power meter SL7000 #53101057 connection 24TB duplicate

/141/ Passport and calibration certificate on power meter SL7000 #53105794 connection 201TA main

/142/ Passport and calibration certificate on power meter SL7000 #53101802 connection 201TB main

/143/ Passport and calibration certificate on power meter SL7000 #53105802 connection Generator1 duplicate

/144/ Passport and calibration certificate on power meter SL7000 #53105785 connection Generator1 main

/145/ Passport and calibration certificate on power meter SL7000 #53105786 connection Generator2 duplicate

/146/ Passport and calibration certificate on power meter SL7000 #83101788 connection Generator 2 main

/147/ Passport and calibration certificate on power meter SL7000 #53105775 connection Generator3 duplicate

/148/ Passport and calibration certificate on power meter SL7000 #53105793 connection Generator3 main

/149/ Passport and calibration certificate on power meter SL7000 #53101791 connection Generator4 duplicate

/150/ Passport and calibration certificate on power meter SL7000 #53101791 connection Generator4 main

/151/ Passport and calibration certificate on power meter SL7000 #53105786 connection backup duplicate

/152/ Passport and calibration certificate on power meter NIK2104-02 #3723772
/153/ Passport and calibration certificate on power meter NIK2303 #0119034
/154/ Photos: Replacement of boilers screen tubes and relevant equipment
/155/ Photos: Replacement of turbine blades by TPPs personnel
/156/ Photos: mount of generator TGV-300 rotor

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

Andrii Klymenko – Head of Reconstruction Project Maintenance Department
Valentyna Zozulia – Head of Environmental Safety Department
Denis Zhyvyh – Head of Prodiction Technical Department
Oleksandr Zakharov – Head of Measuring and Heat Automatic Department
Hennadii Usachov – Head of Production Measuring and Testing Laboratory
Iryna Fesenko – Head of Producing Chemical Laboratory
Oleksiy Mikhailov – representative of DTEK company
Natallia Belska – representative of Global Carbon B.V.
Olga Monchak – representative of Global Carbon B.V.

Please do *not* delete the Bookmark named “numPages” on this last page in the report.

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
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 the Host Party (Letter of Approval #1231/23/7 dated 19/08/2011 issued by National Environment Investment Agency of Ukraine) and the Sponsor Party (Letter of Approval #2009JI22`dated 7/01/2009 issued by SenterNovem Netherlands).	OK	OK
91	Are all the written project approvals by Parties involved unconditional?	All the written project approvals 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 UNFCCC JI website?	*CAR01* Monitoring Report indicates installed capacity of generating units in 300 MW. Units remarking with reduction of power production for operating life prolongation is usual practice on Ukraine coal TPPs. Certificate of conformity on project documentation indicates 325 MW for Unit#1, Statement on work acceptance – 315 MW for Unit #2. Please provide detailed description of installed capacity and Units marking in the monitoring report.	CAR01 CAR02	OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		CAR02 The monitoring report indicates that next equipment was renewed on Unit #1: boiler, steam turbine generator, electrostatic precipitator, turbines. Also, Statement on work acceptance for Unit #2 indicates that boiler TPP-312A, turbine K-300-240-2, alternator TGV-300-2Y3 and electric precipitators were renewed during the monitoring period. Please explain this inconformity		
93	What is the status of operation of the project during the monitoring period?	*CAR03* Please explain in the section A.7 of the Monitoring Report the difference between ERUs indicated in the determined PDD and in the Monitoring Report. *CAR04* Capital repairs, mid repairs, permanent repairs are a common practice in Ukraine energy sector, which is ruled by Ukraine legislation. 3-tech forms indicate that Block #2 not in work during August-September and Block#3 not in work in May. Please provide information on repair activity and technical disasters associated with project equipment	CAR03 CAR04	OK OK
Compliance with monitoring plan				
94	Did the monitoring occur in accordance with the monitoring plan included in the PDD regarding which the determination	The monitoring in accordance with the monitoring plan included in the PDD regarding which the determination has been deemed final and is so	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	has been deemed final and is so listed on the UNFCCC JI website?	listed on the UNFCCC JI website		
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 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?	*CAR05* The methodology for ERUs calculation use amount of fuel consumption for power supply to the grid. Excel calculation file contain value of fuel consumed for heat and electricity production. Please correct ERUs calculations *CAR06* Please provide value of natural gas NCV in ERUs calculation Excel file in line with 3-tech forms	CAR05 CAR06	OK OK
95 (b)	Are data sources used for calculating emission reductions or enhancements of net removals clearly identified, reliable and transparent?	The data sources used for calculating emission reduction 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?	*CAR07* Please provide Emission Factors for fossil fuels in accordance with National Inventory Report	CAR07	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?	*CAR08* The 3-tech form for August 2011 indicates that heavy fuel oil has been consumed by Block #1. Please correct calculations or explain exclusion of heavy fuel oil.	CAR08	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
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

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?	Project participants doesn't revise monitoring plan during third monitoring period.	OK	OK
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?	*CAR09* The monitoring report indicates in the section B.1 that TPPs chemical laboratory provide analysis of natural gas NCV each five day. Laboratory attestation sphere not includes natural gas and during the site visit was detected that TPP uses monthly reports of JSC "Donetskoblgas" for natural gas NCV identification.	CAR09	OK
101 (b)	Is the function of the monitoring equipment, including its calibration status, in order?	*CAR10* The electric power meters were replaced twice during the monitoring period. Please indicate in the monitoring report data on all power meters used	CAR10	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		during monitoring period with next follows: Name of power connection; Type and serial number of power meter; Date of installation and replacement *CL01* The monitoring report note single-phase power meters NIK2303APK1T #119034 and NIK2304-02 200 #3723772. Please add in the Monitoring Report information on power connection and purpose of these meters.	CL01	OK
101 (c)	Are the evidence and records used for the monitoring maintained in a traceable manner?	The evidences and records are maintained in a traceable manner.	OK	OK
101 (d)	Is the data collection and management system for the project in accordance with the monitoring plan?	*CAR11* Please note in the monitoring Report that the data monitored and required for ERUs calculation will be kept two years after the last ERUs transfer with reference on relevant order of “Vostokenerho”.	CAR11	OK
Verification regarding programmes 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 monitoring reports of all JPAs to be verified?	Not applicable.	Not applicable	Not applicable
103	Does the verification ensure the accuracy and conservativeness of the	Not applicable.	Not applicable	Not applicable

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	emission reductions or enhancements of removals generated by each JPA?			
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; − The complexity of the applicable technologies and/or measures used; − The geographical location of each	Not applicable.	Not applicable	Not applicable

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	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 submission to the secretariat for the JISC ex ante assessment? (Optional)	Not applicable.	Not applicable	Not applicable

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
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

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

<table>
<tr>
<td>CAR01
Monitoring Report indicates installed capacity of generating units in 300 MW. Units remarking with reduction of power production for operating life prolongation is usual practice on Ukraine coal TPPs. Certificate of conformity on project documentation indicates 325 MW for Unit#1, Statement on work acceptance – 315 MW for Unit #2. Please provide detailed description of installed capacity and Units marking in the monitoring report.</td>
<td>92</td>
<td>The description is provided in section A.6:
<table>
<tr><td></td><td>Unit #1</td><td>Unit #2</td></tr>
<tr><td>Planned start of operation after reconstruction</td><td>12/2009</td><td>12/2008</td></tr>
<tr><td>Actual start of operation after reconstruction</td><td>08/2011</td><td>04/2009</td></tr>
<tr><td>Installed capacity before the reconstruction</td><td>300 MW</td><td>300 MW</td></tr>
<tr><td>Installed capacity after th reconstruction</td><td>325 MW</td><td>315 MW</td></tr>
</table>
After the reconstruction of Unit #2 concentration of ashes in smoke gases decreased from 0.4 to 0.18 g/m3 . As a result of modernization, capacity of turbine K-300-240-2 changed from 300 MW to 315 MW; of alternator TGV-300-2UZ - from 300 MW to 315 MW. This had substantively risen the effectiveness of Unit #2 energy generation.

The reconstruction of Unit #1 increased capacity of generator and turbine from 300 MW to 325 MW. The regular operation of Unit#1 began in the third quarter of 2011.”</td>
<td>The issue is closed based on project developer corrections.</td>
</tr>
</table>

CAR02 The monitoring report indicates that next equipment was renewed on Unit #1: boiler, steam turbine generator, electrostatic precipitator, turbines. Also, Statement on work acceptance for Unit #2 indicates that boiler TPP-312A, turbine K-300-240-2, alternator TGV-300-2Y3 and electric precipitators were renewed during the monitoring period. Please explain this inconformity.	92	The description has been added to the Section A.3. of the MR: "By the beginning of the monitoring period for the Unit #1 was made as follows: - Modernization of boiler TPP-312A - Modernization of the turbine K-300-240-2 - Modernization of alternator TGV-300-2UZ - Modernization of electrostatic precipitators The reconstruction of Unit #2 included: - Modernization of boiler TPP-312A - Modernization of the turbine K-300-240-2 - Modernization of alternator TGV-300-2UZ - Modernization of electrostatic precipitators".	The issue is closed based on project developer corrections
CAR03 Please explain in the section A.7 of the Monitoring Report the difference between ERUs indicated in the determined PDD and in the Monitoring Report.	93	The correction was made. Please, see Section A.7.of the MR: "The value of emission reductions in PDD expected for 2011 is higher than ER stated in MR. The discrepancy in baseline emissions can be explained by the repairs of Unit #2 held in August-September 2011 and of Unit #3 held in May, so less electricity were produced during the monitoring period. On the other hand, more coal were consumed, then stated in PDD. This caused higher project emissions."	The issue is closed based on project participants clarification and project developer corrections.

<table>
<tr>
<td><u>CAR04</u>
Capital repairs, mid repairs, permanent repairs are a common practice in Ukraine energy sector, which is ruled by Ukraine legislation. 3-tech forms indicate that Unit #2 not in work during August-September and Unit #3 not in work in May. Please provide information on repair activity and technical disasters associated with project equipment.</td>
<td>93</td>
<td>Please, see section A.6.During the monitoring period several planned repairs took place. Delivery of repair parts for Unit #1 was delayed and runner of Unit #3 turbine needed non-scheduled maintenance. The dates of periodic repairs were changed according to the table below:
<table>
<tr><th>Unit #</th><th>Repair type</th><th>Actual repair start</th><th>Actual repair end</th></tr>
<tr><td>1</td><td>Regular</td><td>12/04/2011</td><td>11/05/2011</td></tr>
<tr><td>2</td><td>Mid</td><td>26/07/2011</td><td>09/10/2011</td></tr>
<tr><td>3</td><td>Mid</td><td>18/05/2011</td><td>25/07/2011</td></tr>
<tr><td>4</td><td>Mid</td><td>10/10/2011</td><td>02/11/2011</td></tr>
</table>
The copy of the protocol confirming the dates of repairs is printed, signed by plant commission and provided to AIE.</td>
<td>The issue is closed based on information provided by project developer. Relevant information was provided in the monitoring report</td>
</tr>
<tr>
<td><u>CAR05</u>
The methodology for ERUs calculation use amount of fuel consumption for power supply to the grid. Excel calculation file contain value of fuel consumed for heat and electricity production. Please correct ERUs calculations.</td>
<td>95(a)</td>
<td>The calculations were corrected. The values of fuel consumed for power supply to the grid were used.</td>
<td>The issue is closed based on project participant’s corrections.</td>
</tr>
<tr>
<td><u>CAR06</u>
Please provide value of natural gas NCV in ERUs calculation Excel file in line with 3-tech forms.</td>
<td>95(a)</td>
<td>The correction has been made. Please, see the excel calculation sheet.</td>
<td>The provided corrections were found satisfactory. The issue is closed</td>
</tr>
</table>

CAR07 Please provide Emission Factors for fossil fuels in accordance with National Inventory Report	95(c)	ERU calculation methodology, including the emission factors used, is in accordance with monitoring plan which was approved by the Ukrainian DFP (as a part of PDD) and determination for which has been made final. No changes have been made.	There are no any acts or regulations demand use of Emission Factors from National GHG Inventory Report in Ukraine, so Global Carbon B.V. may use default values from approved PDD. The issue is closed.
CAR08 The 3-tech form for August 2011 indicates that heavy fuel oil has been consumed by Unit#1. Please correct calculations or explain exclusion of heavy fuel oil.	95(d)	Calculations were corrected. Please, see the excel calculation sheet.	Corrections of ERUs calculations were provided. The issue is closed.

CAR09 The monitoring report indicates in the section B.1 that TPPs chemical laboratory provide analysis of natural gas NCV each five day. Laboratory attestation sphere not includes natural gas and during the site visit was detected that TPP uses monthly reports of JSC "Donetskoblgas" for natural gas NCV identification.	101(a)	The amendments were made through the text of the MR.	The issued is closed based on project developer corrections of the Monitoring Report.
CAR10 The electric power meters were replaced twice during the monitoring period. Please indicate in the monitoring report data on all power meters used during monitoring period with next follows: Name of power connection; Type and serial number of power meter; Date of installation and replacement.	101(b)	The table is provided in the MR. Please, see Section B 1.2., Table 6.	The issue is closed based on information provided by the project developer. The Monitoring Report was corrected.
CAR11 Please note in the monitoring Report that the data monitored and required for ERUs calculation will be kept two years after the last ERUs transfer with reference on relevant order of "Vostokenerho".	101(d)	Correction was made, see section B.3. The copy of the relevant order is provided to AIE.	The issue is closed based on project developer corrections in the monitoring report.

CL01 The monitoring report note single-phase power meters NIK2303APK1T #119034 and NIK23 104-02 200 #3723772. Please add in the Monitoring Report information on power connection and purpose of these meters.	101(b)	The corrections in numbers of power meters were made. Correct names and numbers of power meters are meter NIK2303APK1T #0119034 and NIK2104-02 20 #3723772 (See Table 6 of the MR). ERU calculations in MR are based on monitoring data provided in TPP's standard technical report – 3-TEH form. This form contains information on consumption of all kinds of fuel, energy output and generation. Amount of electricity produced by Units #1,#2,#3, #4 is calculated automatically as a sum of indicated in monitoring report generation power meter's measurements. The transformer power meters calculate energy, which is consumed by Zuyevka TPP's auxiliaries, so for calculation of electricity output metering values of transformer meters are subtracted from the sum of generated electricity. Power meter NIK2303APK1T #0119034 measures energy consumption of PE "Adamant-YA" – construction company, which buys energy from Zuevka TPP. Power meter NIK2104-02 200 #3723772 meters energy consumption of Zuyevka Energo Mechanic Plant. Power meters NIK2303APK1T #0119034 and NIK2104-02 20 #3723772 are installed after the transformer meters, so their metering values are generation with the auxiliaries. For this reason for clear accounting measuring of NIK2303APK1T #0119034 and NIK2104-02 20 #3723772 are added to energy generation for calculation of electricity output in 3-teh form. subtracted from energy.	The issue is closed based on project developer corrections and information obtained by Zuevska TPP personnel.