
VERIFICATION REPORT 2012

MONITORING PERIOD:
01/01/2012 – 30/11/2012

BIOVET JSC
VERIFICATION OF THE
ERUPT JI-PROJECT
“Co-Generation Gas Power Station Biovet”
(Erupt 4 /ERU 04/33)

REPORT JI I - No. 2122 1030

REVISION No. 02

VERIFICATION REPORT 2012

Date of first issue: 23/11/2012	Project No.: 2122 1030
AIE (JI-E-0012): TÜV Rheinland (China) Ltd.	Appointed verifying unit: TÜV Rheinland Energie und Umwelt GmbH

Summary:

TÜV Rheinland has been assigned on 26st October 2012 by Biovet JSC to carry out the verification for the monitoring period 01/01/2012-30/11/2012 of the Erupt JI-Project "Co-Generation Gas Power Station Biovet"; registered under Erupt 4/ERU 04/33 at the location Peshtera in Bulgaria. The on-site assessment has been undertaken on 14th November 2012. The verifier confirms that the project is implemented as planned and described in validated and approved project design documents including the announced and approved changes and that in comparison to the monitoring period 2011 no major changes have been occurred within the monitoring period 01/01/2012-30/11/2012.

Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately. The monitoring system is in place and the project is already generating emission reductions.

The verifier can confirm that the GHG emission reduction for the monitoring period 01/01/2012-30/11/2012 is calculated without material misstatements. Our opinion relates to the project's GHG emissions and resulting GHG emissions reductions reported and related to the valid and registered project baseline and monitoring, and its associated documents. Based on the information the verifier can confirm the following statement:

Reporting period: Assessment and evaluation for period 01/01/2012-30/11/2012


Verified baseline emissions, project emissions and emission reductions within reporting period:

Year	30th of November 2012
Baseline emissions	141 074 t CO ₂ eq
Project emissions	65 723 t CO ₂ eq
Emission reductions	75 351 t CO ₂ eq

EF used for electricity from the grid is in accordance with Bulgarian baseline study of Joint Implementation projects in the Bulgarian energy sector of NEK, published by MOEW

The project has continuously generated emission reductions as JI project in the fifth calendar year of the first commitment period of the Kyoto Protocol from 2008 to 2012 in accordance with the National Guidelines of the Bulgarian Designated Focal Point for generation of Emission Reduction Units under Track I of the "Joint Implementation" mechanism under Article 6 of the Kyoto Protocol.

It is expected that the project can earn ERUs in accordance with Article 6 of the Kyoto Protocol.

Report No.: 2122 1030	Subject Group: Environment & Energy	
Report title: Erupt JI-Project “Co-Generation Gas Power Station Biovet” (Erupt 4/ERU 04/33)		
Members of the verification team:  Norbert Heidelmann (Team leader and auditor), TÜV Rheinland Dr.eng. Evgeni Sokolovski (Local expert) Green and Fair AD		
Date of this revision: 10/12/2012	Rev. No.: 01	Number of pages: 29

Indexing terms

Climate Change
 Kyoto Protocol
 Joint Implementation
 Clean Development Mechanism

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Abbreviations

Explain any abbreviations that have been used in the report here.

AF	Adjustment Factor
AM	Approved Methodology
ACM	Approved Consolidated Methodology
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CHP	Combined Heat and Power Generation
CL	Clarification Request
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalent
DNA	Designated National Authority
DOE	Designated Operational Entity
DR	Document Review
DVM	Determination and Verification Manual
EA	Economic Analysis
EB	Executive Board
EIA	Environmental Impact Assessment
ER	Emission Reduction
ERPA	Emission Reduction Purchase Agreement
FAR	Forward Action Request
FSR	Feasibility Study Report
GHG	Greenhouse Gas
GWh	Giga Watt Hours
GWP	Global Warming Potential
I	Interview
IETA	International Emissions Trading Organisation
IPCC	Intergovernmental Panel on Climate Change
IRR	Internal Rate of Return
IVC	Initial Verification Checklist
JI	Joint Implementation
kW	Kilo Watt
kWh	Kilo Watt Hours
LoA	Letter of Approval
LoI	Letter of Intent
LSTHC	Local Stakeholder Consultation
MoV	Means of Verification
MW	Mega Watt
MWh	Mega Watt Hours
NGO	Non Government Organisation
NPV	Net Present Value
ODA	Official Development Assistance
OSV	On Site Visit
PDD	Project Design Document
PVC	Periodic Verification Checklist
QC	Quality Control
QA	Quality Assurance
SIcC	Supplier Information to Client

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t	Tonne
UNFCCC	United Nations Framework Convention on Climate Change
VC	Verification Checklist
VP	Verification Protocol
VVM	Validation and Verification Manual

Conversion Factors and Definitions

Insert and describe any conversion factors used in the report here. In addition, define any specific terminology used in the report.

None

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Annex A: Verification Protocol

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VERIFICATION REPORT

1 INTRODUCTION

The Client Biovet JSC has commissioned an independent periodic verification by TÜV Rheinland for its Erupt JI-Project “Co-Generation Gas Power Station Biovet”; registered under Erupt 4/ERU 04/33 at the location Peshtera in Bulgaria, which was started with an on-site assessment on 14th of November 2012.

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

The verifiers have reviewed the GHG data collected to date for the period between implementation date in 2005 and 31th of October 2012 with special focus on the monitoring period 01/01/2012-30/11/2012.

This report summarizes, based on a desk-review, an on-site assessment and follow-up interviews and interactions through corrective action and clarification requests, the final results of the verification of the reported emission reductions and the determination whether the project has been implemented in accordance with the PDD and the previous determination, and whether the monitoring occurred in accordance with the monitoring plan included in the PDD and the relevant annexes.

It is based on the JI Determination and Verification Manual (DVM) in its first version, published in December 2009 by the Joint Implementation Supervisory Committee (JISC) of UNFCCC.

The periodic verification has been performed during one on-site mission. Each task comprised a desk review of the project documents including project description (PDD and baseline study for ERUPT program), monitoring plan, monitoring report, previous monitoring report, previous determination, previous verifications and further documentations.

The verification team consists of the following personnel:

Norbert Heidelmann, TÜV Rheinland (Team leader and auditor)

Dr. Evgeni Sokolovski, Green and Fair AD (Local expert, verifier under EU-ETS in Bulgaria)

1.1 Objective

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

- **Initial Verification:**

The objective of an initial verification is to verify that the project is implemented as planned, to confirm that the monitoring system is in place and fully functional, and to assure that the project will generate verifiable emission reductions. A separate initial verification prior to the project entering into regular operations is not a mandatory requirement.

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• Periodic Verification:

The objective of the periodic verification is to verify that actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan; further more the periodic verification evaluates the GHG emission reduction data and expresses a conclusion with a high, but not absolute, level of assurance about whether the reported GHG emission reduction data is free of material misstatements; and verifies that the reported GHG emission data is sufficiently supported by evidence, i.e. monitoring records. If no prior initial verification has been carried out, the objective of the first periodic verification also includes the objectives of the initial verification.

The verification shall consider both quantitative and qualitative information on emission reductions. Quantitative data comprises the monitoring reports submitted to the verifier by the project entity. Qualitative data comprises information on internal management controls, calculation procedures, and procedures for transfer, frequency of emissions reports, review and internal audit of calculations/data transfers.

The verification is based on criteria set by UNFCCC, the Kyoto Protocol, the JI guidelines and procedures and the relevant host country requirements.

1.2 Scope

Verification scope is defined as an independent and objective review and ex post determination by an Independent Entity of the monitored reductions in GHG emissions. The verification is based on the submitted monitoring report and the validated project design documents including its monitoring plan. The monitoring report and associated documents are reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations. TÜV Rheinland's assessment team has, based on the recommendations in the JI Determination and Verification Manual (DVM), the CDM Validation and Verification Manual (CDM-VVM) and the IETA Validation and Verification Manual (IETA-VVM) published by International Emission Trading Association (IETA) employed a risk-based approach in the verification, focusing on the identification of significant risks of the project implementation and the generation of ERUs.

The verification is not meant to provide any consulting towards the client. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the monitoring activities.

The audit team has been provided with various documents showing the implementation of the project, such as procedures, manuals, equipment characteristics and further documents during the on-site assessment on 14/11/2012. Based on these documents, the on-site assessment for the periodic verification was carried out. Prior to the on-site visit a monitoring report and supporting documents have been submitted by the project proponent, covering the monitoring period 01/01/2012-30/11/2012.

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The monitoring report, which has been revised as result of this verification, has been served as the basis for the assessment presented herewith.

Studying the existing documentation belonging to this project, it was obvious that the competence and capability of the audit team performing the verification has to cover at least the following aspects:

- Knowledge of Kyoto Protocol and the Marrakech Accords
- Environmental and Social Impact Assessment
- Quality assurance
- Technical aspects of cogeneration systems
- Monitoring technologies and concepts
- Political, economical and technical conditions in host country
- Knowledge of the Guidelines of the Joint Implementation Supervisory Committee for Joint Implementation under Track 2
- Knowledge of the National Guidelines of the Designated Focal Point of Bulgaria for Joint Implementation under Track 1

According to these requirements TÜV Rheinland has composed a project team in accordance with the appointment rules of the TÜV Rheinland's certification body for CDM and JI, which is the DOE CDM- E-0013 / AIE JI- E-0012.

The verified monitoring report for the period 01/01/2012-30/11/2012 is intended to be made publicly available together with this verification report on the Ministry of Environment and Water, Executive Environmental Agency's web page in accordance with the Instruction for Approval of Projects Generating Emission Reduction Units under the "Joint Implementation" Mechanism, as published in May 2010 on the Ministry of Environment and Water's website.

1.3 Description of the Project Activity

The project comprises a gas engine, of which the exhaust gases are led into a heat recovery steam generator. The set has been installed together with a high level automation process control system. Biovet contracted GE Packaged Power Inc. power systems for the delivery of the gas turbine of the type LM2000, which has been the first gas turbine used for industrial power production in Bulgaria.

The main equipments of the Co-generation Gas Power Station consist of the following main components:

At the heart of Biovet's cogeneration plant is GE AERO ENERGY's LM2000 aeroderivative gas turbine genset. The LM2000 gas turbine, which is actually a re-rated LM2500 gas turbine, has a rating of 18MW at 36.4% thermal efficiency.

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The flue gas stream will provide the heat to generate the steam for the process. The heat recovery steam generator (HRSG) is produced by Marcegaglia, Italy and has a capacity of 25.5 tons/hour of low pressure steam (technological steam) with the parameters of 9 bars pressure and 179 °C and 5 tons/hour of high pressure steam (injection steam for NO_x control) of 40 bars pressure and 340 °C.

Project participant in the host country Bulgaria is Biovet JSC in Peshtera (Bulgaria), which has implemented the described project activity in the framework of the Memorandum of Understanding on co-operation between the Kingdom of the Netherlands and the Republic of Bulgaria in reducing emissions of greenhouse gases under article 6 of the Kyoto Protocol. SenterNovem, acting as Designated Focal Point for The Netherlands on behalf of the Dutch Ministry of Economic Affairs has purchased the emission reductions generated by this project through the ERUPT 4 tender. According to the available project information, the project's starting date is April 2004. The crediting period starts on January 01, 2008. Project owners have decided to opt for a five year crediting period from 2008 – 2012 and an additional time frame from July 1st 2006 until December 31st 2007 for the optional delivery of AAU's.

2 METHODOLOGY

Starting the verification the verifier's first task has been to familiarize with the project. Based on the received documents (see list of references) a verification checklist (VC) has been prepared, consisting of the Initial Verification Checklist (IVC) and the Periodic Verification Checklist (PVC) and the Verification Protocol according to the DVM, see Annex A to this report.

These above mentioned checklists serve the following purposes:

- they elaborate the significance of changes during project implementation,
- they organize details of the audit procedure and clarify the requirements the project is expected to meet, and
- they document how a particular requirement has been validated and the result of the verification.

During the verification a special focus was given to:

- the correct implementation of the project
(installations, monitoring equipment and procedures, quality assurance procedures)
- the correctness of assumptions with impacts on the monitoring and verification process
(e.g. baseline assumptions)
- sustainable development and environmental performance parameters
- training programs
- allocation of responsibilities
- the day-to-day operation of the system

After the document review the audit team conducted

- an on-site inspection at the project installations at Biovet JSC in Peshtera, Bulgaria
- interviews and follow-up with the project participants

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The findings are the essential part of this verification report, which is based on the verification protocols mentioned above. The compilation of the open issues resulting from the completion of the above verification protocols is summarised in Annex A of this report. The structure of the Initial Verification Checklist (IVC) and the Periodic Verification Checklist (PVC) is shown in the following:

Initial Verification Checklist – Table 1

OBJECTIVE	Ref.	COMMENTS	Concl. (incl FARs/CARs)
The requirements the project must meet.	to the legislation or agreement where the requirement is found.	Description of circumstances and further conclusions.	<p>This is either acceptable based on evidence provided (OK), or a Corrective Action Request (CAR) of risk or non-compliance with stated requirements.</p> <p>The corrective action requests are numbered and presented to the client in the Verification report. Forward Action Requests (FARs) indicate essential risks for further periodic verifications</p>

Periodic Verification Checklist
Table 1: Data Management System/Controls

Expectations for GHG data management system/controls	Score	Verifiers Comments (including <i>Forward Action Requests</i>)
The project operator's data management system/controls are assessed to identify reporting risks and to assess the data management system's/control's ability to mitigate reporting risks. The GHG data management system/controls are assessed against the expectations detailed in the table.	<p>A score is assigned as follows:</p> <p>Full all best-practice expectations are implemented.</p> <p>Partial a proportion of the best practice expectations is implemented.</p> <p>Limited this should be given if little or none of the system component is in place.</p>	<p>Description of circumstances and further commendation to the conclusion. This is either acceptable based on evidence provided (OK), or a Corrective Action Request (CAR) of risk or noncompliance with stated requirements.</p> <p>The corrective action requests are numbered and presented to the client in the Verification</p>

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		report. The Initial Verification has additional Forward Action Requests (FAR) . FAR indicates essential risks for further periodic verifications
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Periodic Verification Checklist
Table 2: GHG calculation procedures and management control testing

Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks
Identification of potential reporting risks based on an assessment of the emission estimation procedures. Identification of key source data. Focus on those risks that impact the accuracy, completeness and consistency of the reported data.	Identification of the key controls for each area with potential reporting risks. Assessment of adequacy of the key controls and eventually test that the key controls are actually in operation. Internal controls include, Understanding of responsibilities and roles, Reporting, reviewing and formal management approval of data; Procedures for ensuring data completeness, conformance with reporting guidelines, maintenance of data trails etc.	Identification of areas of residual risks, i.e. areas of potential reporting risks where there are no adequate management controls to mitigate potential reporting risks Areas where data accuracy, completeness and consistency could be improved are highlighted.

Periodic Verification Checklist
Table 3: Detailed audit testing of residual risk areas and random testing

Areas of residual risks	Additional verification testing performed	Conclusions and Areas Requiring Improvement (including FARs)
List of residual areas of risks of Periodic Verification Checklist Table 2 where detailed audit testing is necessary. In addition, other material areas may be selected for detailed audit testing.	The additional verification testing performed is described. Testing may include: <ul style="list-style-type: none"> - Sample cross checking of manual transfers of data - Recalculation - Spreadsheet 'walk throughs' to check links and equations - Inspection of calibration and maintenance records for key 	Having investigated the residual risks, the conclusions are noted here. Errors and uncertainties are highlighted.

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	equipment - Check sampling analysis results Discussions with process engineers who have detailed knowledge of process uncertainty/error bands.	
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Only a few issues have been encountered during the verification process, which could be meanwhile resolved and will be further improved during the next periodic monitoring and verification. The current monitoring report has been amended, it has been confirmed by the project proponent that further procedures for the improvement of next periodic monitoring will be implemented, especially with regard to the performance of the back-up boilers.

On-site visit for the verification

Initial on-site visit: November 14, 2012.

Monitoring Period for ERUs:

01/01/2012-30/11/2012

Verification team

Team leader and auditor:
 Norbert Heidelmann, TÜV Rheinland

Local expert:
 Dr. Evgeni Sokolovski, Green and Fair AD, verifier under EU-ETS in Bulgaria and local expert

Duration of verification

Preparations:	26/10/2012 - 12/11/2012
On-site assessment:	14/11/2012
Follow-up until draft VR:	15/11/2012 – 23/11/2012
Follow-up until final VR:	26/11/2012 – 10/12/2012

2.1 Review of Documentation and Site Visits

The verification was performed as a desk review of the project documents including project design documents, monitoring plan, validation report, monitoring report (November 2012) and further documentations. The monitoring template submitted by the client and additional background documents related to the project performance were reviewed. A complete list of all documents reviewed is attached as Annex B to this report. One site visit was realized. The first

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part of the on-site assessment enables the verification of the project installation and of the monitoring plan. Based on this assessment the verification protocol was developed.

The main focus of the second part of the on-site assessment was to verify both the emission reductions presented in the monitoring report and all the raw data necessary to confirm such calculation. Interviews with different plant employees and external assessors have been performed.

The assessment has included the following means of verification:

- review of project documentation
- on-site inspections, including; review of performance records, interviews with project participants and local stakeholders, collection of measurements, observation of established practices and testing of the accuracy of monitoring equipment
- review of monitoring results and verification of the correct application of monitoring methodologies
- determination of the reductions in GHG emissions, and
- review of additional data from other sources if appropriate.

Participants on the verification on the part of project participants were on 14th of November 2012:

Biovet JSC – Mr. Stayko Staykov, Chief of QM/EM Department

Biovet JSC – Mr. Jordan Jordanov, Chief of Cogeneration Plant

Biovet JSC – Mr. Ivan Zlatev, Ecologist of QM/EM Department

2.2 Resolution of Corrective and Forward Action Requests

The objective of this phase of the verification was to resolve the requests for corrective actions and any other outstanding issues which needed to be clarified for TÜV Rheinland's positive conclusion on the GHG emission reduction calculation. Quality and accuracy of the data and documents presented during the on site visit was high nevertheless some CARs, CLs and FARs have to be reported and the same has been solved completely. To guarantee the transparency of the verification process, the CARs, CLs and FARs raised and responses that have been given are summarized in chapter 3 below and documented in more detail in the verification protocol and the summary of open issues in Annex A.

3 VERIFICATION FINDINGS

In the following sections the findings of the verification are stated. The verification findings for each verification subject are presented as follows:

The findings from the desk review of the monitoring report and further documentation and the findings from interviews during the follow up visit are summarized. A more detailed record of these findings can be found in the Verification Protocol and in the summary of open issues in Annex A.

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1. Where TÜV Rheinland had identified issues that needed clarification or that represented a risk to the fulfillment of the project objectives, a Corrective Actions Request (CAR) or Clarification Request (CL), respectively, have been issued. The Corrective 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 several Corrective Action Requests (CARs) and Clarification Request (CLs).

2. A Forward Action Requests (FAR) should be issued, where:

- the actual project monitoring and reporting practices requires attention and /or adjustment for the next consecutive verification period, or
- an adjustment of the MP is recommended.

In the context of Forward Action Requests, risks have been identified, which may endanger the delivery of high quality ERUs in the future, i.e. missing adequate description of procedures concerning functionality tests of the flow meters. As a consequence, such aspects should receive a special focus during the next consecutive verification. A FAR may originate from lack of data sustaining claimed emission reductions. Forward Action Requests are understood as recommendation for future project monitoring; they are stated, where applicable, in the following sections and are further documented in the Verification Protocol and in the summary of open issues in Annex A.

The verification has identified a risk for material misstatements for the emission reductions in the first crediting period (2008-2012). Emission reductions with material misstatements shall be discounted based on the verifiers ex-post determination of the achieved emission reductions.

3. The final conclusions for verification subject are presented in the following sub-chapters of chapter 3 “Initial Verification Findings”.

The verification findings related to the project implementation will very likely result in a revision of the final monitoring report.

3.1 Remaining issues, CARs, CLs, FARs from initial determination and verification

From the determination and subsequent verification one Forward Action Requests (FAR 1) has been left for this verification by of TÜV Rheinland.

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3.2 Project Implementation

3.2.1 Discussion

Equipment of this project activity is installed as described in the PDD / baseline study and the monitoring plan and the monitoring report №3 of Biovet JSC of December 2012. It can be stated, that the way the production data is obtained is consistent with the way the historical data had been determined. Main measurement equipments are in place and calibrated. The existing metering systems have been identified and checked. Responsibility for installation and operation of the equipment is within sites employees. The equipment is calibrated periodically as proven during the on-site visit. The project boundaries have not been changed. Nevertheless there could be identified areas where a further improvement is possible, which is in the field of replacement procedures of monitoring equipment, in the field of a mid-term planned calibration preparation (see also chapter 3.8.) and in the field of efficiency assessment of the back-up boilers.

3.2.2 Findings

See also Annex A.

Corrective Action Request No. 1 (CAR 1):

(linked to FAR 1 old) / Boiler 3 is now equipped with NG firing devices plus a volume meter for cold water inflow. In the MR Biovet shall explain this new setup, including the determination and adoption of steam production in boiler3; Also, Biovet shall adopt the new volume meter (cold water) in the list of monitoring parameters.

3.2.3 Conclusion

Revised monitoring report №3 of Biovet JSC of December 2012 and resolving of the raised issues, the project complies with the pre-requisites for a faultless periodic verification and the requirements for monitoring.

The project complies with the requirements and will continue to comply with the requirements.

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3.3 Internal and External data

3.3.1 Discussion

The external data has been verified and are in line with the requirements.

The monitoring plan as provided by the project design document is correctly implemented and hence the main internal data to be monitored is available. Most of the internal data is continuously acquired and stored in the computerized system and from these transferred to excel sheets.

The data have been verified. The audit team can confirm that the used management and operational system is appropriate and is being implemented as defined in the monitoring plan.

The above data are stored in different documents all available during the on-site assessment. No significant reporting risk could be identified with respect to external data used for this project activity.

3.3.2 Findings

No findings

3.3.3 Conclusion

The project complies with the requirements for a management of external and internal data.

3.4 Environmental and Social Indicators

3.4.1 Discussion

No additional information relating to the environmental monitoring required by the authority (IPPC-permit, etc.) are included in the monitoring report, as there is no requirement for JI Track 1 projects in this regard.

3.4.2 Findings

As the JI Track 1 standard does not require such information, it is not relevant to assess in addition the fulfilment of the requirements of the environmental authority during periodic JI verification.

3.4.3 Conclusion

No further actions or follow-up necessary for the time being.

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3.5 Management and Operational System

3.5.1 Discussion

The Monitoring Reports clearly documents the various processes established to monitor baseline emissions, project emissions and emission reductions. All procedures have been observed and are available. All calibration documents are correctly recorded following best practice. They are accessible and known to the relevant personnel.

The responsibilities are clearly defined and communicated.

3.5.2 Findings

No findings

3.5.3 Conclusion

The project complies with the requirements for good data management.

3.6 Completeness of Monitoring

3.6.1 Discussion

The reporting procedures reflect the current monitoring plan. The main parameters were determined as prescribed in a complete and transparent way. The actual monitoring report for calendar year 2012 presents the monitoring concept in the same way as it was presented in the determined project design documentation and subsequently verified initial monitoring reports.

3.6.2 Findings

No findings

3.6.3 Conclusion

The project complies with the requirements for a complete monitoring report.

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3.7 Accuracy of Emission Reduction Calculations

3.7.1 Discussion

Due to the already verified JI specific approved methodology there is no need to make corrections for data uncertainty. It can be confirmed that emission reduction calculations have been performed according to the monitoring plan and to the calculation methodology reported in the monitoring report. The method to determine GHG emissions is documented based on the determined monitoring plan. No further adjustments and corrections are needed for the reported calendar year 2011.

3.7.2 Findings

Clarification Requests

See also Annex A.

Clarification Request No. 1 (CL 1):

At page 13, table 5, the reference sources of EFel-gen and BEF-el shall be indicated in the MR

Clarification Request No. 2 (CL 2):

At page 21 MR, the reference for enthalpie calculation approach, and underlying parameters taken (pressure and temperature, saturated steam?) shall be indicated.

3.7.3 Conclusion

Revised monitoring report №3 of Biovet JSC of December 2012 and resolving of the raised issues, the project complies with the pre-requisites for a faultless periodic verification and the requirements for monitoring.

The project complies with the requirements with regard to the accuracy of the emission reduction calculations.

3.8. Quality of Evidence to Determine Emission Reductions

3.8.1 Discussion

Concerning verification the calculation of emission reductions is based on internal and external data. The origins of internal and external data were explicitly checked and all were in line with the requirements. All the calculation of the values for standard deviations and averages are done by software commercially proved. Inspection of calibration and maintenance records for key equipment was performed.

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3.8.2 Findings

No findings

3.8.3 Conclusion

The project complies with the requirements and will continue to comply with the requirements.

3.9 Management System and Quality Assurance**3.9.1 Discussion**

Due to the straightforward approach for calculating GHG emission reductions the existing management system is appropriate and quality assurance is guaranteed. The IT system is tailor-made for the utilized equipment of the gas turbine and heat recovery steam generator, it ensures the quality of the information and the correct management of the data involved in the project.

3.9.2 Findings

See also Annex A.

New Forward Action Request No. 1 (FAR 1 new):

Boiler 4 was observed as disconnected and out of order. Biovet confirmed that this will stay this way. The status of Boiler 4 shall be checked at the next verification

3.9.3 Conclusion

The project complies with the requirements and will continue to comply with the requirements.

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3.10 PROJECT SCORECARD

The conclusions on this scorecard are based on the revised monitoring report.

Risk areas		Conclusions			Summary of findings and comments
		Baseline Emissions	Project Emissions	Emission Reductions	
Completeness	Source coverage/ boundary definition	√	√	CARs, CLs	All relevant sources are covered by the monitoring plan and the boundaries of the project are defined correctly and transparently. Potential improvements are indicated by relevant CARs and CLs.
Accuracy	Physical Measurement and Analysis	√	√	CARs, CLs	State-of-the-art technology is applied in an appropriate manner. Appropriate back-up solutions are provided. Potential improvements are indicated by CARs and CLs.
	Data calculations	√	√	CARs, CLs	Emission reductions are calculated correctly. Potential improvements are indicated by CARs and CLs.
	Data management & reporting	√	√	CARs, CLs	Data management and reporting were found to be satisfying. Potential improvements are indicated by CARs and CLs.
Consistency	Changes in the Project	√	√	CARs, CLs	Results are consistent to underlying raw data. Potential improvements are indicated by CARs and CLs.

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4 VERIFICATION STATEMENT

TÜV Rheinland has been assigned on 26st October 2012 by Biovet JSC to carry out the verification for the monitoring period 01/01/2012-30/11/2012 of the Erupt JI-Project “Co-Generation Gas Power Station Biovet”; registered under Erupt 4/ERU 04/33 at the location Peshtera in Bulgaria. The on-site assessment has been undertaken on 14th November 2012. The verifier confirms that the project is implemented as planned and described in validated and approved project design documents including the announced and approved changes and that in comparison to the monitoring period 2011 no major changes have been occurred within the monitoring period 01/01/2012-30/11/2012.

Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately. The monitoring system is in place and the project is already generating emission reductions.

The verifier can confirm that the GHG emission reduction for the monitoring period 01/01/2012-30/11/2012 is calculated without material misstatements. Our opinion relates to the project's GHG emissions and resulting GHG emissions reductions reported and related to the valid and registered project baseline and monitoring, and its associated documents. Based on the information we have seen and evaluated TÜV Rheinland confirms the following statement:

Reporting period: Assessment and evaluation for: 01/01/2012-30/11/2012

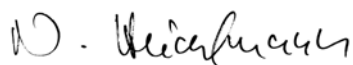
Verified baseline emissions, project emissions and emission reductions:

Year	30th of November 2012
Baseline emissions	141 074 t CO ₂ eq
Project emissions	65 723 t CO ₂ eq
Emission reductions	75 351 t CO ₂ eq

EF used for electricity from the grid is in accordance with Bulgarian baseline study of Joint Implementation projects in the Bulgarian energy sector of NEK, published by MOEW.

The verification team also determined some areas of risks for the project in the context of the management / operation system and of quality assurance. Issues indicated as “Corrective Action Request”, “Clarification Request” and “Forward Action Request” shall be resolved as soon as possible, the results shall be submitted as indispensable information to the verification team of the next periodic verification. The project has continuously generated emission reductions as JI project in fifth calendar year (calendar year 2012) of the first commitment period of the Kyoto Protocol from 2008 to 2012 in accordance with the National Guidelines of the Bulgarian Designated Focal Point for generation of Emission Reduction Units under Track I of the “Joint Implementation” mechanism under Article 6 of the Kyoto Protocol.

Cologne, 10/12/2012



Norbert Heidelmann

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Annex A: DVM and TÜV Rheinland Verification Protocol

Table 1. Check list for verification

DVM Para-graph	Check item	Initial finding	Action requested to project participants (incl. CAR, CL or FAR)	Review of project participants' action	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?	Yes, Bulgaria and The Netherlands have issued LoAs based on the MOU between both countries.	N/A	N/A	OK
91	Are all the written project approvals by Parties involved unconditional?	Yes, they are	N/A	N/A	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?	Yes The website of JISC is in preparation also for display of JI projects under Track 1, which is only under the responsibility of the host country's DFP.	See Verification Report, chapter 1.2	See Verification Report, chapter 1.2	OK
93	What is the status of operation of the project during the monitoring period?	The project operates since December 2005.	See Verification Report, chapter 1.1	See Verification Report, chapter 1.1	OK
Compliance with monitoring plan					
94	Did the monitoring occur in accordance with the monitoring plan included in the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC	The monitoring occurred in accordance with the monitoring plan.	See Verification Report, chapter 3 and 4	See Verification Report, chapter 3 and 4	OK

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	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?	When calculating the emission reductions all key factors have been considered.	See Verification Report, chapter 3	See Verification Report, chapter 3	OK
95 (b)	Are data sources used for calculating emission reductions or enhancements of net removals clearly identified, reliable and transparent?	The input data have been cross-checked with the raw data during the on-site assessment. The applied data sources are reliable and transparent.	See Verification Report, chapter 3	See Verification Report, chapter 3	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?	The applied grid emission factors and other emission factors are from credible sources.	See Verification Report, chapter 3 and chapter 4	See Verification Report, chapter 3 and chapter 4	OK
95 (d)	Is the calculation of emission reductions or enhancements of net removals calculated based on conservative assumptions and the most plausible scenarios in a transparent manner?	The calculations are based on the monitored data, recorded from calibrated monitoring devices ex-post and from conservative parameters and data determined ex-ante.	See Verification Report, chapter 3	See Verification Report, chapter 3	OK
Revision of monitoring plan					
	<i>Applicable only if monitoring plan is revised by project participants</i>				
99 (a)	Did the project participants provide an appropriate justification for the proposed revision?	1.) According to the recommendations of the DFP of Bulgaria a	1.) See Verification Report, chapter 3 and chapter 4	1.) See Verification Report, chapter 3 and chapter 4	OK

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		revision of the applied grid emission factor has been proposed as an option to the used default value. 2.) It is planned also to replace the current use of a default value for the efficiency of the back-up boilers by a determination of the efficiency of these boilers based on standardised performance measurements.	2.) See Verification Report, chapter 3	2.) See Verification Report, chapter 3	
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?	1.) The revision would improve the country specific accuracy, but would be less conservative. 2.) The revision would improve the specific accuracy, but would be less conservative.	See Verification Report, chapter 3 and chapter 4 and DVM § 99 (a).	See Verification Report, chapter 3 and chapter 4 and DVM § 99 (a).	OK
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?	Specific data collection procedures, quality control and quality assurance procedures have been defined by Biovet JSC. Further improvement will be implemented.	See Verification Report, chapter 3	See Verification Report, chapter 3	OK

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101 (b)	Is the function of the monitoring equipment, including its calibration status, is in order?	The verification team has checked all monitoring devices and associated calibration protocols. Further improvements will be implemented.	See Verification Report, chapter 3	See Verification Report, chapter 3	OK
101 (c)	Are the evidence and records used for the monitoring maintained in a traceable manner?	Yes, the evidence and records used for the monitoring are maintained in a transparent manner and could be re-traced by the verification team. Further improvements will be implemented.	See Verification Report, chapter 3	See Verification Report, chapter 3	OK
101 (d)	Is the data collection and management system for the project in accordance with the monitoring plan?	The data collection and the management system is in compliance with the monitoring plan and with the previous periodic verification.	See Verification Report, chapter 3	See Verification Report, chapter 3	OK

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Table 2: List of CARs, CLs and FARs from desk review and on-site assessment of periodic verification for calendar year 2012, dated 14th of November 2012**Clarification Request No. 1 (CL 1):**

At page 13, table 5, the reference sources of EFel-gen and BEF-el shall be indicated in the MR.

Response: The reference sources of EFel-gen and BEF-el are indicated in the MR version 3 dated December 2012.

OK

Clarification Request No. 2 (CL 2):

At page 21 MR, the reference for enthalpie calculation approach, and underlying parameters taken (pressure and temperature, saturated steam?) shall be indicated.

Response: The reference sources for enthalpie calculation approach, and underlying parameters taken are indicated in the MR version 3 dated December 2012.

OK

Corrective Action Request No. 1 (CAR 1):

(linked to FAR 1 old) / Boiler 3 is now equipped with NG firing devices plus a volume meter for cold water inflow. In the MR Biovet shall explain this new setup, including the determination and adoption of steam production in boiler3; Also, Biovet shall adopt the new volume meter (cold water) in the list of monitoring parameters.

Response: In table 7 in the list of monitoring parameters, the electromagnetic flow meter for cold water measurement for Boiler 3 is listed in the MR version 3 dated December 2012. Also in section 2.4 the corresponding setup is described.

OK

New Forward Action Request No. 1 (FAR 1 new):

Boiler 4 was observed as disconnected and out of order. Biovet confirmed that this will stay this way. The status of Boiler 4 shall be checked at the next verification

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Annex B: Reference List

Reference No.	Document or Type of Information
1	REPUBLIC OF BULGARIA, MINISTRY OF ENVIRONMENT AND WATER, EXECUTIVE ENVIRONMENT AGENCY: NATIONAL INVENTORY REPORT 2011 for Greenhouse Gas Emissions, Submission under the UNFCCC and the Kyoto Protocol, dated April, 2011
2	NEK-EAD file: Baseline CEF Report "BASELINE STUDY OF JOINT IMPLEMENTATION PROJECTS IN THE BULGARIAN ENERGY SECTOR, CARBON EMISSION FACTOR" (2005)
3	NEK-EAD: Baseline Carbon Emission Factor of Bulgarian Electricity and Heat Power System Co-gen file: Carbon Emission Factor 18.11.2005.xls
4	Joint Implementation Supervisory Committee "GUIDELINES FOR USERS OF THE JOINT IMPLEMENTATION PROJECT DESIGN DOCUMENT FORM" (Version 04)
5	Joint Implementation Supervisory Committee "GLOSSARY OF JOINT IMPLEMENTATION TERMS" (Version 02)
6	Joint Implementation Supervisory Committee "JOINT IMPLEMENTATION DETERMINATION AND VERIFICATION MANUAL" (Version 01)
7	Joint Implementation Supervisory Committee "GUIDANCE ON CRITERIA FOR BASELINE SETTING AND MONITORING" (Version 02)
8	Joint Implementation Supervisory Committee, Twenty-second meeting: Proposed agenda-Annotations, Annex 2 „Draft Procedures Regarding Chances During Project Implementation”
9	PDD of JI PROJECT "NEW COGENERATION STATION AT THE BIOVET FACTORY, ERU04/33", April 2004
10	KPMG Sustainability BV: Determination Report "Co-generation Gas Power Station Biovet", dated 1 March 2005
11	SGS Climate Change Programme: Verification Report "Biovet JSC Co-Generation Gas Power Station Biovet Peshtera, Bulgaria" (Monitoring Period: 01/01/2008 – 31/12/2008, Third period)
12	Biovet EAD Peshtera: Order confirmation for verification services, dated 04/03/2010
13	On Site Assessment Attendance Records
14	On-site assessment plan for JI-determination/verification process JI-Project „Co-Generation Gas Power Station Biovet“ ERUPT 4 (ERU04/33), Assessment Date May 17th 2010 to May 20th 2010
15	Document Checklist for JI-Project „Co-Generation Gas Power Station Biovet“ERUPT 4 (ERU04/33)
16	Republic of Bulgaria, Ministry of Environment and Water: FOURTH NATIONAL COMMUNICATION ON CLIMATE CHANGE, UNITED

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	NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, SOFIA – 2006
17	FIFTH NATIONAL COMMUNICATION ON CLIMATE CHANGE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE SOFIA, 2010, Republic of Bulgaria, Ministry of Environment and Water By assignment to the Energy Institute JSC
18	Interministerial working group for elaboration of National Allocation Plan for participation of Bulgaria in the EU ETS in compliance with the regulations of Directive 2003/87/EC: NATIONAL ALLOCATION PLAN FOR PARTICIPATION OF BULGARIA IN THE EUROPEAN COMMUNITY SCHEME FOR GREENHOUSE GAS EMISSION ALLOWANCE TRADING, For the period 2008 – 2012, <i>Sofia, 2007</i>
19	MOEW Bulgaria: Bulgarian JI Guidelines for JI Track 2 (2006, September)
20	MOEW Bulgaria: Bulgarian JI Guidelines for JI Track 1 :“INSTRUCTION FOR APPROVAL OF PROJECTS GENERATING EMISSION REDUCTION UNITS UNDER THE “JOINT IMPLEMENTATION” MECHANISM (2010, June)
21	MOEW Bulgaria „APPROVED JI PROJECTS IN BULGARIA“
22	Memorandum of Understanding on co-operation between the Kingdom of the Netherlands and the Republic of Bulgaria in reducing emissions of greenhouse gases under article 6 of the Kyoto Protocol
23	CDM-methodological tool “Tool to determine the baseline efficiency of thermal or electric energy generation systems”(Version 01)
24	Ministry of Economic Affairs of The Netherlands, May 2004: Operational Guidelines for Project Design Documents of Joint Implementation Projects (<i>Volume 1: General guidelines, Version 2.3</i>)
25	Validation and Verification Manual, IETA/PCF http://www.vvmanual.info
26	Biovet EAD Peshtera: Order confirmation for verification services, dated 10/10/2012
27	Biovet EAD Peshtera: Monitoring Report 2012 for JI PROJECT NEW COGENERATION STATION AT THE BIOVET FACTORY, ERU04/33, revision 3, dated December 2012
28	Annexes to Monitoring Report 2012 , revision 3, dated December 2012
29	Excel Sheets Monitoring Biovet 2012, revision 3, dated December 2012
30	Biovet EAD Peshtera: Monitoring Report 2010 for JI PROJECT NEW COGENERATION STATION AT THE BIOVET FACTORY, ERU04/33, revision 02, dated March 2012
31	Excel Sheets Monitoring Biovet 2011, revision 02, dated March 2012
32	Biovet EAD Peshtera: Monthly and annual information 2011 for electricity production of Biovet
33	Biovet EAD Peshtera: Monthly and annual information 2011 for production and transport of heat energy of the cogeneration plant of Biovet
34	Biovet EAD Peshtera, Metrology department: Annual Calibration Plan 2011,

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	dated 16/12/2010
35	Biovet EAD Peshtera, Metrology department: Several Calibration Protocols
36	Biovet EAD Peshtera, Cogeneration plant: Excerpt from Logbook
37	Biovet EAD Peshtera: Monthly back-up boiler production data