VERIFICATION REPORT
PÁLHALMAI AGROSPECIÁL LTD.

VERIFICATION OF THE
PÁLHALMA BIOGAS PROJECT

REPORT NO. HUNGARY-VER/02/2011/V2

REVISION NO. 02

BUREAU VERITAS CERTIFICATION

Report No: HUNGARY-VER/02/2011/V2

VERIFICATION REPORT

Date of first issue: 22/03/2011	Organizational unit: Bureau Veritas Certification Holding SAS
Client: PÁLHALMAI AGROSPECIÁL LTD.	Client ref.: Mr. Hetyei Gábor Chief Executive

Summary:
Bureau Veritas Certification has made the verification of emission reduction of yr 2010 (1st January 2010 – 31st December 2010) of the Pálhalma Biogas Project (JI Registration Reference Number HU1000010), of PÁLHALMAI AGROSPECIÁL LTD. located in village Pálhalma, Hungary, on the basis of UNFCCC criteria for the JI and Track 1 requirements laid down by host country, 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 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 4.

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 ready to generate GHG emission reductions. The GHG emission reduction is calculated accurately and without material errors, omissions, or misstatements, and the ERUs issued totalize 44 467.6 tons of CO_2eq for the monitoring period.
Our opinion relates to the project's GHG emissions and resulting GHG emission reductions reported and related to the approved project baseline and monitoring, and its associated documents.

Report No.: HUNGARY-VER/02/2011/V2	Subject Group: JI	
Pálhalma Biogas Project: Pálhalma Biogas Project		
Work carried out by: Zsolt Bácskai Lead Verifier (Team Leader) György Laczkó Verifier (Team Member)		
Work reviewed by: Ashok Mammen		
Work approved by: Olivier Ducrot		
Date of this revision: 25/03/2011	Rev. No.: 02	Number of pages: 39

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Abbreviations

ACM	Approved consolidated baseline methodology
AIE	Accredited Independent Entity
BAT	Best Available Technology
BVC	Bureau Veritas Certification
BS	Baseline Study
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CH4	Methane
CR	Clarification Request
CO2	Carbon Dioxide
DFP	Designated Focal Point; in Hungary it is the Climate Policy Unit (formerly Climate Change and Energy Department) of the relevant Ministry (earlier Ministry of Environment and Water, now Ministry of National Development)
DVM	Joint Implementation Determination and Verification Manual
ERU	Emission Reduction Unit
ERPA	Emission Reduction Purchase Agreement
EU ETS	European Union Emission Trading Scheme
FAR	Forward Action Request
GHG	Green House Gas(es)
I	Interview
IE	Independent Entity
IETA	International Emissions Trading Association
IPCC	Intergovernmental Panel on Climate Change
IPPC	Integrated Pollution Prevention Control
ITR	Internal Technical Review *(last control step within BVC)*
JI	Joint Implementation
LOA	Letter of Approval
LFG	landfill gas
MoV	Means of Verification
NGO	Non Governmental Organisation
PA	Pálhalma Agrospeciál
PDD	Project Design Document
QMS	Quality Management System
UNFCCC	United Nations Framework Convention for Climate Change
WB	World Bank

1 INTRODUCTION

PÁLHALMAI AGROSPECIÁL LTD. has commissioned Bureau Veritas Certification to verify the emissions reductions of its JI project Pálhalma Biogas Project (hereafter called "the project") at Hungary, Pálhalma.

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.

Although the Hungarian JI regulation requires the verifier to review data and methods applied at the calculation of additionality, we have to emphasize that the additionality criteria were checked at the stage of project planning and registration, in 2004, by an independent verifier, and on the basis of that verification the project was accepted and registered by the Hungarian DFP as approved JI project. To make a detailed review of additionality 7 years later could lead to any conclusions, including the statement that the project could not be verified as additional in 2011. We believe that whatever conclusions could be drawn from such exercise, this should not make any effect on the emission reduction results in 2010. Due to this reason we accept the conclusion of previous determination conducted in 2004, and consider the project additional. The statements made in the financial chapter of Hungarian annual emission reduction report are in line with the

legally binding documents that were produced by the Management of PA and the legal liability stays with them on the content of this chapter.

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 project monitoring towards reductions in the GHG emissions.

1.3 Verification Team

The verification team consists of the following personnel:

NAME	ROLE IN TEAM	GRADUATION	EXPERIENCE
Ashok Mammen	Internal Reviewer, final verification of the report	PhD (Oils & Lubricants), Masters (Analytical chemistry). Over 20 years of experience in petrochemical sector.	Dr. Mammen is a lead auditor and tutor for environment, safety and quality management systems and a lead verifier and lead tutor for GHG projects. He has been involved in the validation and verification processes of more than 100 CDM, JI and other GHG projects.
Zsolt Bácskai	Lead Verifier	Biological Engineer with environmental specialisation, MSc in Pollution and Environmental Control Over 15 years experience in environmental auditing.	Environmental Consultancy, Auditing of Quality, Environmental and other management systems JI Verification
György Laczkó	Verifier	Mechanical Engineer specialized for chemical and food industry Industrial Economist Engineer 10 years experience in auditing.	Auditing of variety of Management systems. As being Top Manager of large international company and by graduation wide experience on Economics. Trained JI Verifier, participation in earlier projects

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 01.1 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 determination protocol is enclosed in APPENDIX 4 to this report.

2.1 Review of Documents

The Monitoring Report (MR) submitted by PÁLHALMAI AGROSPECIÁL LTD. 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 referenced on p.16. ref# /1/ and project as described in the determined PDD.

2.2 Follow-up Interviews

On 10/03/2011 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 PÁLHALMAI AGROSPECIÁL LTD. were interviewed (see appendix 3: Attendance sheets of on-site visits (in Hungarian)). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organisation	Interview topics
PÁLHALMAI AGROSPECIÁL LTD.	➢ The visits were planned as part of Verification Plan, required by Hungarian law, see in Appendix 2 (in Hungarian). The participants of the site visit are also documented on a separate sheet as required by Track 1 regulations, see Appendix 3.
DFP (Climate Politics Department of the Ministry)	➢ (email and subsequent telephone consultation) asking for confirmation of the applicability of originally approved emission factor calculation method in this early project, see Ref. /22/
CONSULTANT	➢ The consultant (“Interzona Climate Change Advisory”) was present during the site visit, and several email/telephone/personal contacts were made during the whole verification process, to clarify details, asking for more information etc.

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 (CR), requesting the project participants to provide additional information for the AIE 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.

To guarantee the transparency of the verification process, the concerns raised are documented in more detail in the verification protocol in APPENDIX 4.

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 4.

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 4. The verification of the Project resulted in 2 Corrective Action Requests, 3 Clarification Requests, and 3 Forward Action Requests.

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

3.1 Remaining issues, FARs from previous verification

During the verification of 2009 emission reductions the following FARs were raised:

FAR#1:
The MP, 5.2 details the internal control process and issues to control. There is no mention how these controls should be documented (corrective actions?). The internal control that was performed before the verification explored several issues. It is recommended to do such controls not just at the end of the cycle, but also during the year, in order to identify issues at earlier stage."

Situation found during verification of 2010 emission reductions:

In September 2010 and in February 2011 internal control processes have been documented through the internal audit records. The audit records followed the internal audit checklist of the monitoring plan.
Issue considered as resolved

FAR#2:
„During the public hearing process of the project development the General Manager of PA promised that the annual reports will be made available for the public. There are no evidences of doing so."

Situation found during verification of 2010 emission reductions:

Annual reports have been made available at PA's home page at www.agrospec.hu, which was checked during the verification process.
Issue considered as resolved

FAR#3:
„During the site visit a massive amount of lubricants for the gas engines were seen placed on palettes, on open ground surface, without secondary containment, exposed to rainfall. Although this does not have direct effects on GHG emission, the JI projects should also follow the relevant environmental legislation. PA should make sure hazardous materials are stored safely, even if it is temporary storage."

Situation found during verification of 2010 emission reductions:
A proper, closed and rain-proof storage chamber has been built in 2010. Lubricants are now stored safely. The facility was seen during the site visit.
Issue considered as resolved

FAR#4:
„There are no clear evidences, what type of maintenance activities were done on the key devices, the records generated by sub-contractors from this activity are not detailed. More detailed evidences would allow to put higher level of confidence from the verifier side, but it is also important for PA, such records could form the basis for any claims in case of malfunctioning devices (ASM-III.D: "12. Regular maintenance should ensure optimal operation of flares...", 15. Flow meters, sampling devices and gas analysers shall be subject to regular maintenance...)"

Situation found during verification of 2010 emission reductions:

A newly (as of 1 January 2010) started maintenance book serves the purpose of traceability. External contractors are now also required to provide written details of their service activities. As a conclusion the documentation of maintenances done by sub-contractors improved a lot. However, the last evidence of flare maintenance is from 18.11.2010. PA should make sure that such key sub-contractors perform in accordance with the technical specifications and contractual agreements (see new FAR2).
Issue considered as resolved

FAR#5:
„The future internal data controls should cover also those issues which resulted in the raise of CAR3. The future internal data controls should cover also those issues which resulted in the raise of CAR3."
Situation found during verification of 2010 emission reductions:
The internal audit checklist now cover the issues in question.

Issue considered as resolved

FAR#6:
„ Although there are IT rules on backup saving of operational data, these are not referenced and/or detailed in the Monitoring Plan."

Situation found during verification of 2010 emission reductions:
The required details have been included in MP v2.05, date: 26 March 2010.
Issue considered as resolved

FAR#7:
„ During the internal data control the daily time series of methane concentration data at the 2 lines should be compared (e.g. on the graph of the system), and in case of >5%point difference the volume flow data should be also compared. Either weighted concentration data should be applied for this period or the error caused in the annual ERUs should be calculated." "MP (5.2 chapter and Annex "D") should be modified accordingly, and the proposed actions should be duly done and documented. The effectiveness of the process will be checked at each periodic verification."

Situation found during verification of 2010 emission reductions:

PA carried out comparison for the yearly dataset. They found that CH4 concentration values do not differ more than 4%point any given months with an average difference of 2%point. The issue is now on the checklist of internal audit, being part of MP.

Issue considered as resolved.

3.2 Project approval by Parties involved (90-91)

This is an early project. The Ministry of Environment and Water of host Hungary issued the LoA on 31st August, 2004 (Ref /8/). The project was developed according to the Guidance of Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management, the developer was KWI Management, Consultants & Auditors GmbH., the programme management was provided by Kommunalkredit Public Consulting GmbH,, who also signed the ERPA with PA.

3.3 Project implementation (92-93)

The project has been implemented mostly in accordance with the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website. The approved project originally proposed also the utilisation of heat of biogas plant in a laundry, but this process is not implemented in the reviewed period and thus there are no emission reductions for this part in the Monitoring Report, and this was confirmed by earlier annual verifications..

The project was running in 2010 with variable performance, including low performance period in Jan-February. There were 2 days in 2010 when both the engine and the flare was out of operation for a few hours (problems with electronics). The biogas emitted on the emergency overflow system of fermenters were not measured during these short period (emission point is at the fermenters, right before flow meter), and as such there is no risk of ERU claims for this methane. CR1 was raised to clarify what volume of methane was released to the atmosphere, whether is has any influence on ERUs and what corrective measures were taken to prevent the re-occurrence of such situation in the future.

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

The measurement, collection and processing of operational data which are needed for the calculation of generated electricity was performed mostly in accordance with the monitoring plan, except during periods there were

problems with the biogas volume measuring equipment. These periods were bridged with calculations based on existing electricity production + last year performance. After raising CR2 the method was fine tuned, beyond existing electricity production also the actual methane content data were taken into account to ensure more precise results.

The gridmix factor applied by PDD in 2004 differs from the one published by the DFP in 2008, but for the request of BVC DFP confirmed again that such early projects can use the originally proposed gridmix calculations. This statement confirmed that this approach is applicable for the full Kyoto period till 2012. (Ref /22/).

Internal data sources used for calculating emission reductions were found clearly identified, reliable and transparent, such as electricity readings and sold net electric energy, methane concentration of biogas, volume of burnt biogas, delivery of fertiliser to the fields. However, the transparency could be increased if the location of the measuring equipment were directly sown on the flowchart (CR3).

In some cases there were doubts whether the applied approach is accurate and conservative enough, see details in CR2 and CAR2.

These concerns were duly clarified and the provided explanations convinced the verifier that the issues in question has negligible effect on final ERUs.

After corrections/clarifications made to CR2 and CAR2, we can verify that the calculation of emission reductions is based on conservative assumptions and the most plausible scenarios in a transparent manner.

3.5 Revision of monitoring plan (99-100)

The MP was drafted when PDD was determined (/5/). The project owner developed the detailed (Hungarian) MP before the start of this Kyoto period, and the plan was approved by the AIE. This MP was subject to modifications in each year, in line with the relevant CRs/CARs/FARs. Annex “D” of MP (titled “version control”) contains detailed list of changes in Hungarian. The issues are traceable from previous Verification Reports, including comments of the verification team on the approval of changes. This happened also during the verification of 2010 emission reductions. Latest version of MP is referenced under /6/.

3.6 Data management (101)

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

During the site inspection the status of measuring equipment influencing ERUs was as follows:

Weight-bridge (MS-VEZ-TEN): re-calibration was carried out on 30th September 2010, and certificate was issued by the authorised organisation that the device can be considered as calibrated also in the previous 3 month period (since the expiry of earlier certificate). The validity of calibration is 2 years. Any potential errors of this measurement have very little influence on ERUs.
Gas flow sensors: Höntzsch VA FLOW SENSOR VA 40, S/N 1601E: it was calibrated in an accredited lab on 22nd June, 2010, and it replaced than the previous sensor S/N 1602E, which was calibrated in 27.11.2008.
The uncertainty data shown on the above calibration record should be also used for the uncertainty assessment (CAR4)
Gas Analyser (Fresenius AirTOX, S/N 6105): The equipment was calibrated ever quarter by specialised sub-contractor. (26.03, 09.06, 21.09, 16.12).
The uncertainty data shown on all of the above calibration records should be used for the uncertainty assessment (CAR4)
Signet 2714 (combined pH – ORP Electrode, with built-in "Balco" temperature sensor): it is installed in scrubbing tower used for H2S removal. As the flow meter is right after this unit, the temperature data registered by this device are used for the calculation of methane density. This instrument is used to control different conditions of the bioreactor, including temperature, where the required sensitivity is ± 0,5 ℃. Although it is not subjec t to special calibration, the error it can cause does not have big influence on final ERUs.
The uncertainty of thermometer should be estimated on the bases of technical info provided by the supplier and it should be used for the uncertainty assessment (CAR4)
Gas pressure meter (Nöding P121 Pressure transmitter): it is measuring the overpressure of biogas after the scrubbing tower & flow meter, placed before the pump that is supplying the gas engine (and flare) with sufficient fuel. This again has only technical role in controlling the gas supply of engine, but gives a good indication of the range of gas pressure at flow meter, which is very slightly above athmospheric pressure. The device is not subject to calibration, but in this pressure range it has very limited influence the ERUs.
These latter 2 devices (t, p meters) are not shown on MP flowchart ("1. ábra), on ER report Figure 1 and are not listed in Table 4 of MP (CAR3)
Electricity meters (Landis ZMD410): properties of power supplier (E-ON), who is obliged to operate it under calibrated status by law. In addition, for the request of PA the equipment supplier (METSYS) provided a Statement that this type of measuring equipment have the required license to be used in Hungary.

The implementation of data collection procedures is in accordance with the MP /6/, including the quality control and quality assurance procedures. The quality control and internal audit process was enhanced as a result of last year's FAR1, FAR5, FAR6, FAR7.
Most key parameters that are used for reporting are generated by automatic measuring equipment, integrated into the control system of the biogas plant. The data are collected and stored in a closed system, supported by several level backups and archiving system. Electricity production data are available

both from bills and the closed biogas plant system, the two data are in strong correlation. Other data that have less influence on ERUs (mass and N content of substrate taken to the fields) are stored in a well managed traditional filing system. The JI related processes are integrated into the Integrated Management System (Quality Management System and Environmental Management System) of PA.

The evidence and records used for the monitoring are maintained in a traceable manner. Most key parameters that are used for reporting are generated by automatic measuring equipment, integrated into the control system of the biogas plant. The data are collected and stored in a closed system, supported by several level backups and archiving system. Electricity production data are available both from bills and the closed biogas plant system, the two data are in strong correlation. Other data that have less influence on ERUs (mass and N content of substrate taken to the fields) are stored in a well managed traditional filing system. The JI related processes are integrated into the Integrated Management System (Quality Management System and Environmental Management System) of PA.

The data collection and management system for the project in accordance with the monitoring plan /6/.

3.7 Verification regarding programmes of activities (102-110)

NOT APPLICABLE

4 VERIFICATION OPINION

Bureau Veritas Certification has performed the periodic verification of the Pálhalma Biogas Project Project in Hungary. 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 PÁLHALMAI AGROSPECIÁL LTD. is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions of the project on the basis set out in the final PDD (Ref. /3/) The development and maintenance of records and reporting procedures in accordance with the Monitoring 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 "final draft version for technical review" (March 22nd, 2011, Ref. /1/) 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 with slight but verified amendments described in 3.3. Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately. The monitoring system is in place and the project is generating GHG emission reductions.

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

Reporting period: From 01/01/2010 to 31/12/2010
Emission Reductions (yr 2010) : 44 467.6 t CO_2 equivalents.

5 REFERENCES

Category 1 Documents:
Documents provided by Type the PÁLHALMAI AGROSPECIÁL LTD. that relate directly to the GHG components of the project.

/1/ Year 2010 Emission Reduction Report for the Biogas Joint Implementation Project of Pálhalmai Agrospeciál Kft.;final draft version 22 March 2011 (ER_report_Agrospec_JI_EN_2010_findraft_for_TR.pdf), final version after ITR dd. 24th March 2011 (ER_report_Agrospec_JI_EN_2010_fin.pdf)

/2/ Hungarian report titled "Kibocsátás-csökkentési Jelentés A Pálhalmai Agrospeciál Kft. Biogáz Üzem Együttes Végrehajtás Projektjének 2010. évi teljesítményéről, végleges változat", 24th March 2011.

/3/ PDD: Pálhamai Agrospeciál Kft: Project Design Document Pálhalma Biogas Project, 30 June 2004

/4/ Baseline Study Draft June 2004;

/5/ Draft Monitoring Plan, June 2004, KWI Consultants & Engineers;

/6/ Monitoring Plan (issued in Hungarian, titled: NYOMONKÖVETÉSI TERV ÉS RENDSZER LEÍRÁS); version at beginning of verification v.2.05, 26th March 2010, after verification process v 2.06, 24 March 2011, "Agrospec_biogaz_Monitoring_terv_v206_20110324.pdf")

/7/ calculation spreadsheet supporting 2010 ER report (original version: "PA_csokkentesi_szamitasok_2010_v101.xls", modified after clearance of all issues including ITR: "PA_csokkentesi_szamitasok_2010_fin.xls")

/8/ Letter of Approval, issued by the Ministry of Environment and Water, 31st August, 2004

/9/ ERPA between Kommunalkredit Public Consulting GmbH and PA, 27 October 2004

/10/ TÜV SÜD Industrie Service : Determination Report No: 487255 issued on 13 August 2004

/11/ 1st VERIFICATION REPORT on PÁLHALMA BIOGAS PROJECT, DNV 2009-9164, Verification Period: 1 July 2007 – 30 September 2008

/12/ 2nd VERIFICATION REPORT on PÁLHALMA BIOGAS PROJECT, DNV 2009-9165, Verification Period: 1 October 2008 - 31 December 2008

/13/ Verification Report of Pálhalma Biogas Project, Hungary, Bureau Veritas Certification, 30/03/2010, HUNGARY-002/2010, Verification Period: 1 January 2009 - 31 December 2009

/14/ Integrated Management System procedures ("MINŐSÉG- ÉS KÖRNYEZETKÖZPONTÚ IRÁNYÍTÁSI ELJÁRÁSOK"), v5.1, 2010/03/04

/15/ Work Instruction 33 on JI annual emission reduction determination at PA, v1, 2010-02-24

/16/ Internal Audit reports from 2010.09.16 and 2011.02.18

/17/ Financial Statement from Top Management of PA Ltd., on on 2010 financial

performance of the Biogas Unit of PA (dd. 16th March 2011)

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

/18/ 323/2007 (XII.11.) Gov. Decree on the implementation of Act LX of 2007 on the implementation framework on the UN Framework Convention on Climate Change and the Kyoto Protocol

/19/ 1/2009 (II.10.) KvVM Decree about the rules of the verification process

/20/ Validation and Verification Manual, Version 3.3, March 2004, Copyright 2004 IETA/PCF

/21/ Joint Implementation Determination And Verification Manual, V 01

/22/ E-mail from DFP with confirmation to use the originally approved emission factor calculation methodology stated in PDD dated 02/02/2011

Persons interviewed:
List persons interviewed during the verification or persons that contributed with other information that are not included in the documents listed above.
The lists of participants interviewed during the site visits are documented on a separate sheet as required by Track 1 regulations, see signed copies in Appendix 3.
No other persons were interviewed.

APPENDIX 1: VERIFIERS' DECLARATION (HUNGARIAN-ENGLISH)

Hitelesítői Nyilatkozat / Verifiers' Declaration

Alulírott Bureau Veritas Certification Holding SAS képviselője, és a „ PÁLHALMA BIOGAS PROJECT" JI projekten dolgozó hitelesítő szakértői valamennyien kijelentjük, hogy a hitelesítési tevékenység során az elvárható szakmai gondossággal és alapossággal jártunk el, és a kibocsátási jelentésben foglaltakat a hitelesítési jelentésben foglaltak szerint az abban rögzített feltételekkel együtt aláírásunkkal hitelesítjük.

Megerősítjük továbbá, hogy a hitelesítési tevékenység során a vonatkozó jogszabályok szerinti összeférhetetlenségi esetek nem álltak fenn, a hitelesítési tevékenységet független személyként folytattuk le.

Undersigned representatives and verifiers/experts of Bureau Veritas Certification Holding SAS declare that we performed the verification activity of „ PÁLHALMA BIOGAS PROJECT" Project with due care and thoroughness, and with our signature we verify the content of the Emission Reduction Report, with the comments and conditions as stated in this Verification Report

We confirm also that there are no illicit connections, situations of conflicts of interest between us and the reporting Client, we performed the verification activity as independent third party.

2011-03-25

Ashok Mammen
Internal Reviewer
Bureau Veritas Certification Holding SAS

Bácskai Zsolt
vezető hitelesítő/lead verifier
Bureau Veritas Magyarország Kft.

Laczkó György
hitelesítő / verifier
Bureau Veritas Magyarország Kft.

APPENDIX 2: VERIFICATION PLAN (HUNGARIAN)

1. A hitelesítés hatóköre:
a projekthatárok megegyeznek az eredeti PDD-ben leírtakkal, de az egyik ÜHG kibocsátás-csökkentési forrás, a hő hasznosítása a mosodában egyelőre nem valósult meg, így azzal a területtel kapcsolatban egyelőre nem merül fel hitelesítési feladat

2. Projekt tevékenységeinek és hatásforrásainak azonosítása:
A biogázüzem beruházás hasznosítja a mezőgazdasági és egyéb helyi tevékenység következtében rendelkezésre álló alapanyagokat: az állattartásból származó trágyából, konyhai, élelmiszeripari mezőgazdasági hulladékból biogázt erjeszt, a biogázzal gázmotort hajt meg, vagyis hőt és áramot termel, a fennmaradó erjedési maradékkal pedig a szántóföldeket trágyázza, ezzel műtrágya-felhasználást vált ki.
Az alábbi hatásforrásokból áll össze a jelenlegi állapotában a projekt (a 3. forrás, a hőhasznosítás nélkül):
1. Forrás: A szalmás istállótrágyán, hígtrágyán, éttermi és ATEV hulladékon, istállómosó vízen keresztül távozó CH_4 kibocsátás csökkentése (közvetlen megtakarítás)
2. Forrás: A megújuló villamos energia termelés jelentette országos kibocsátás-csökkentés (közvetett megtakarítás)
4. Forrás: A szerves trágyázásból eredő műtrágya megtakarítás jelentette kibocsátás-csökkentés

3. Hitelesítési kockázatelemzés (ld. angolul külön, Verification Report, Appendix 4.)

4. Hitelesítési folyamatterv

A hitelesítési csoport tagjai

Név	Szerepe a hitelesítési csoportban	Jelen projektnél lényeges szakterület
Bácskai Zsolt	vezető hitelesítő	Biomassza, biogáz, analitika
Laczkó György	hitelesítő, pénzügyi szakértő	gépészet, közgazdaságtan, pénzügy
Ashok Mammen	Belső független felülvizsgálat (Independent Technical Review)	JI hitelesítés, biomassza-tüzelés

A hitelesítési tevékenységek

lépései, célja	helye	időigénye (szakértői nap)
dokumentum-átvizsgálás (a PDD, a korábbi hitelesítői jelentések, az aktuális monitoring terv és változásai, éves jelentés, excel kalkuláció és változásai a kritikus pontok azonosítása és részletes mintavételi terv készítése a szemléhez), szükség esetén egyeztetések a Szállító szakértőjével	BV iroda	2
részletes helyszíni szemle (a kidolgozott terv szerint), átvizsgálva legalább az alábbiakat: • a monitoring terv tényleges megvalósulásának átvizsgálása • a teljesség vizsgálata, vagyis valamennyi kibocsátási forrás, nyelő, berendezés és forrásanyag szerepel-e az éves jelentésben • Az éves jelentésben szereplő adatok pontosságát és hitelességét, a számítások és felvetések megalapozottságát; • a mérőberendezések és műszerek működését; • az projekt belső adatgyűjtési és -kezelési rendszerének megfelelőségét (tesztekkel és az adatkezelési eljárások áttanulmányozásával). • a mérőműszerek metrológiai állapotát; • az előírt mintavételek és laboratóriumi vizsgálatok elvégzésének megfelelőségét, a labor akkreditáltsági állapotát; • a korábbi hitelesítések során javasolt fejlesztések végrehajtását, és hogy van-e lehetőség a rendszer továbbfejlesztésére A folyamat kulcsszereplőinek (többek között energetikus, labor személyzet, tüzelőanyag beszerző, műszerfelelős) személyes meghallgatása mellett az adatok ellenőrzését, tesztelését is elvégezzük	létesít-mény	2
Az eredmények összegzése, az esetleg hiányzó információk pótlása (szükség esetén akár a helyszín újbóli meglátogatásával a feltárt hiányosságok pótlásának visszaellenőrzése érdekében), a jelentés és a hitelesítői záradék elkészítése	BV iroda	5

- A Bureau Veritas megpróbálja a fenti terv követését. de folyamat előrehaladtával szükség lehet a módosításokra.
- Kérjük, ha bármilyen megjegyzésük van a tervvel kapcsolatban jelezzék azt a Bureau Veritas irodának. Megjegyzés hiányában feltételezzük, hogy elfogadják a fenti tervet.

Név	Aláírás	Dátum
Bácskai Zsolt		2011-03-07

Szemle időpontja: 2011-03-10

Időpont	**Folyamat/szervezeti egység**
8.00	Nyitó értekezlet: a monitoring rendszer és a létesítmény esetleges változásainak megbeszélése, terv megbeszélése, egyeztetések
8.30	A helyszín részletes bejárása, benne a monitoring tervben és/vagy az éves jelentésben szereplő, belső eredetű adatok forrásainak tételes átvizsgálásával a technológia sorrendjében, a helyszínen végigkövetve, a bizonylatok, feljegyzések mintázásával.
	Ezen belül: mérések, mérési adatok feldolgozása, ott használt mérőeszközök állapotának ellenőrzése, kalibrálás/hitelesítés
	az adatkezelési eljárások áttanulmányozása, elemzése, az projekt belső adatgyűjtési és -kezelési rendszere megfelelőségének felmérése, az adatok biztonsága, integritása, beleértve az alkalmazott informatikai infrastruktúrát és az informatikai szabályzatot
	közben alkalmas időpontban ebédszünet helyben
15.00	Záró értekezlet: rövid összefoglaló, jegyzőkönyv

MEGJEGYZÉSEK

- **Az egyeztetéseknek megfelelően a pénzügyi beszámolóval kapcsolatos feladatunkat annak elkészülte és előzetes áttekintése után, egy külön egyeztetett időpontban fogjuk elvégezni.**
- A szemle során megvizsgáljuk, hogy a tárgyévben a nyomon követési rendszer tényleges alkalmazása megfelelt-e a vonatkozó jogszabályokban előírtaknak, és alkalmas volt-e a projekttevékenység nyomon követésére, illetve vezethetett-e alkalmazása során tévedésre. Többek között az alábbi kulcs szempontokat vizsgáljuk:
  a) hogy valamennyi kibocsátási forrás, nyelő, berendezés és forrásanyag szerepel-e az éves jelentésben;
  b) a mérőberendezések és műszerek működését;
  c) a mérőműszerek metrológiai állapotát (hitelesítés, kalibrálás, ezek gyakorisága);
  d) az előírt mintavételek és laboratóriumi vizsgálatok elvégzésének megfelelőségét, valamint hogy a vizsgálatokat végző laboratórium rendelkezik-e az adott analitikai vizsgálatra vonatkozó akkreditációval;
  e) a korábbi hitelesítések során javasolt fejlesztések végrehajtását, és hogy van-e lehetőség a rendszer továbbfejlesztésére;
  f) az adatok megfelelnek-e Nemzeti Nyilvántartási Rendszerben alkalmazott emissziós tényezőknek és számítási módszereknek, amennyiben azonban a Nemzeti Nyilvántartási Rendszerben az adott tevékenységre vonatkozóan nincsenek emissziós tényezők a kibocsátás-csökkentés meghatározására, akkor a Tervdokumentumban meghatározott módon történhet a kibocsátás-csökkentés meghatározása;
- Az adatellenőrzési módszerek magukban foglalják a konkrét bizonylatok, feljegyzések egybevetését a számításokban felhasznált adatokkal, a számítások során használt esetleges manuális adat-átvitelnél a pontosság ellenőrzését. A mintavétel mélységét aszerint méretezzük, hogy az adatnak milyen hatása van a végső kibocsátás-csökkentési eredményre.
- Hasznos volna, ha a felülvizsgálat időtartamára a hitelesítő(k) számára egy elkülönített helyiséget tudnának biztosítani. Amennyiben a rendszer csak a számítógépes hálózaton érhető el, kérjük, hogy (lehetőleg a hitelesítői helyiségben) minden hitelesítő számára legyen hozzáférhető egy számítógép, amelyen a rendszer-dokumentumokhoz hozzá tudunk férni.
- Kérjük, - amennyiben más kérés nincs - minden hitelesítő mellé biztosítsanak kísérőt folyamat teljes idejére. Kérjük, hogy minden szükséges munkavédelmi tudnivalót közöljenek a hitelesítőkkel biztonságuk érdekében.
- A Bureau Veritas megpróbálja a fenti terv követését. de folyamat előrehaladtával szükség lehet a módosításokra.
- Kérjük, ha bármilyen megjegyzésük van a tervvel kapcsolatban jelezzék azt a Bureau Veritas irodának. Megjegyzés hiányában feltételezzük, hogy elfogadják a fenti tervet.

Köszönjük közreműködésüket
Bácskai Zsolt 2011-03-07

APPENDIX 3: ATTENDANCE SHEET OF ON-SITE VISIT (IN HUNGARIAN)

Helyszíni vizsgálat jegyzőkönyv

Alulírottak igazoljuk hogy a mai napon a Bureau Veritas Magyarország Kft. munkatársa(i) a lent megnevezett létesítményben járt(ak), hogy az Együttes Megvalósítás projekt keretében a kibocsátás-csökkentési jelentéssel kapcsolatos helyszíni vizsgálatot végrehajtsák:

Létesítmény neve: Pálhalmai Agrospeciál Kft. .....

Címe: Pálhalma, 2407 Dunaújváros-Pálhalma (központ), Újgalambos (biogáz üzem)

Résztvevők:

Név	Szervezet	Beosztás	Aláírás
Bácskai Zsolt	Bureau Veritas Magyarország Kft.	vezető hitelesítő	
Laczkó György	Bureau Veritas Magyarország Kft.	hitelesítő	
Zsedrovics Lea	Pálhalmai Agrospeciál Kft.	üzemvezető	
Hódi István	Pálhalmai Agrospeciál Kft.	műszakvezető	
Czeilinger József	Pálhalmai Agrospeciál Kft.	elektrikus	
Gubacsi Gergely	Interzóna Klímavédelmi Tanácsadás	tanácsadó	

Pálhalma, 2011-03-10

APPENDIX 4: VERIFICATION TOOLS

Table 1 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?	N/A. This is an early project. The Ministry of Environment and Water of host Hungary issued the LoA on 31st August, 2004 (Ref /8/). The project was developed according to the Guidance of Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management, the developer was KWI Management, Consultants & Auditors GmbH., the programme management was provided by Kommunalkredit Public Consulting GmbH,, who also signed the ERPA with PA. .	OK	OK
91	Are all the written project approvals by Parties involved unconditional?	N/A, see above	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?	The approved project originally proposed also the utilisation of heat of biogas plant in a laundry, but this process is not implemented in the reviewed period and thus there are no emission reductions for this part in the Monitoring Report, and this was confirmed by earlier annual verifications..	OK	OK
93	What is the status of operation of the project during the monitoring period?	The project was running in 2010 with variable performance, including low performance period in Jan-February. There were 2 days in 2010 when both the engine and the flare was out of operation for a few hours (problems with electronics). The biogas emitted on the emergency overflow system of fermenters were not measured during these short period (emission point is at the fermenters, right before flow meter), and as such there is no risk of ERU claims for this methane. CR1 was raised to clarify what	NOK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		volume of methane was released to the atmosphere, whether is has any influence on ERUs and what corrective measures were taken to prevent the re-occurrence of such situation in the future.		
Compliance with monitoring plan				
94	Did the monitoring occur in accordance with the monitoring plan included in the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website?	The measurement, collection and processing of operational data which are needed for the calculation of generated electricity was performed mostly in accordance with the monitoring plan, except during periods there were problems with the biogas volume measuring equipment. These periods were bridged with calculations based on existing electricity production + last year performance. After raising CR2 the method was fine tuned, beyond existing electricity production also the actual methane content data were taken into account to ensure more precise results.	NOK	OK
95 (a)	For calculating the emission reductions , 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?	Fuel emission factors were taken from acknowledged sources..	OK	OK
95 (b)	Are data sources used for calculating emission reductions clearly identified, reliable and transparent?	The present flowchart in MP is not clear where exactly the measuring points are positioned. It should be clarified. (CR3) The calculation of Substituted (prevented) fertilizer usage considers also such fertiliser (MAP) which is used for it's P content and as a result cannot be substituted by the N-content of substrate coming from biogas plant.	NOK	OK
95 (c)	Are emission factors, including default emission factors, if used for calculating the emission reductions, selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice?	The gridmix factor applied by PDD in 2004 differs from the one published by the DFP in 2008, but for the request of BVC DFP confirmed again that such early projects can use the originally proposed gridmix calculations. This statement confirmed that this approach is applicable for the full Kyoto period till 2012. (Ref /22/).	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
95 (d)	Is the calculation of emission reductions based on conservative assumptions and the most plausible scenarios in a transparent manner?	There were doubts whether the applied approach is accurate and conservative enough, see details in CR2 and CAR2.	NOK	OK
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?	N/A		
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?	N/A		
97 (b)	If the determination was conducted on the basis of an overall monitoring plan, have the project participants submitted a common monitoring report?	N/A		
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 already deemed final in the past?	N/A		
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?	The MP was drafted when PDD was determined (/5/). The project owner developed the detailed (Hungarian) MP before the start of this Kyoto period, and the plan was approved by the AIE. This MP was subject to modifications in each year, in line with the relevant CRs/CARs/FARs. Annex "D" of MP (titled "version control") contains detailed list of changes in Hungarian. The issues are traceable from previous Verification Reports, including comments	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		of the verification team on the approval of changes. This happened also during the verification of 2010 emission reductions. Latest version of MP is referenced under /6/.		
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?	Yes, this was the basis purpose of all request for modification.	OK	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?	The implementation of data collection procedures is in accordance with the MP /6/, including the quality control and quality assurance procedures. The quality control and internal audit process was enhanced as a result of last year's FAR1, FAR5, FAR6, FAR7.	OK	OK
101 (b)	Is the function of the monitoring equipment, including its calibration status, is in order?	During the site inspection the status of measuring equipment influencing ERUs was as follows: Weight-bridge (MS-VEZ-TEN): re-calibration was carried out on 30th September 2010, and certificate was issued by the authorised organisation that the device can be considered as calibrated also in the previous 3 month period (since the expiry of earlier certificate). The validity of calibration is 2 years. Any potential errors of this measurement have very little influence on ERUs. Gas flow sensors: Höntzsch VA FLOW SENSOR VA 40, S/N 1601E: it was calibrated in an accredited lab on 22nd June, 2010, and it replaced than the previous sensor S/N 1602E, which was calibrated in 27.11.2008. *The uncertainty data shown on the above calibration record should be also used for the uncertainty assessment (CAR4)* Gas Analyser (Fresenius AirTOX, S/N 6105): The equipment was calibrated ever quarter by specialised sub-contractor. (26.03, 09.06, 21.09, 16.12).	NOK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		*The uncertainty data shown on **all of** the above calibration records should be used for the uncertainty assessment (CAR4)* Signet 2714 (combined pH – ORP Electrode, with built-in "Balco" temperature sensor): it is installed in scrubbing tower used for H_2S removal. As the flow meter is right after this unit, the temperature data registered by this device are used for the calculation of methane density. This instrument is used to control different conditions of the bioreactor, including temperature, where the required sensitivity is ± 0,5 °C. Although it is not subject to special calibration, the error it can cause does not have big influence on final ERUs. *The uncertainty of thermometer should be estimated on the bases of technical info provided by the supplier and it should be used for the uncertainty assessment (CAR4)* Gas pressure meter (Nöding P121 Pressure transmitter): it is measuring the overpressure of biogas after the scrubbing tower & flow meter, placed before the pump that is supplying the gas engine (and flare) with sufficient fuel. This again has only technical role in controlling the gas supply of engine, but gives a good indication of the range of gas pressure at flow meter, which is very slightly above athmospheric pressure. The device is not subject to calibration, but in this pressure range it has very limited influence the ERUs. *These latter 2 devices (t, p meters) are not shown on MP flowchart ("1. ábra), on ER report Figure 1 and are not listed in Table 4 of MP (CAR3)* Electricity meters (Landis ZMD410): properties of power supplier (E-ON), who is obliged to operate it under calibrated status by law. In addition, for the request of PA the equipment supplier (METSYS) provided a Statement that this type of measuring equipment have the required license to be used in Hungary. As mentied earlier, there were problems with the gas flow meter		

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		(1602E above). Although the emergency plan referenced to the replacement of this meter with another one (which is used for information measurement), the other flow meter was not calibrated, and the arrangement of calibration was difficult (the device is built-in into the pipe system). *The documentation of replacement of measuring equipment was not traceable in the operator's log (FAR1)* Now there are 2 calibrated flow meters, one of which could be used as replacement in case of similar future incidents. PA also plans the replacement of CH4 analyser to a better quality equipment, which was recommended by the new sub-contractor for maintenance. The previous maintenance sub-contractor was not responsive and flexible enough to support PA. There were also problems with the (over)pressure meter of biogas, in the period in question a conservative underestimate of pressure was applied.		
101 (c)	Are the evidence and records used for the monitoring maintained in a traceable manner?	Most key parameters that are used for reporting are generated by automatic measuring equipment, integrated into the control system of the biogas plant. The data are collected and stored in a closed system, supported by several level backups and archiving system. Electricity production data are available both from bills and the closed biogas plant system, the two data are in strong correlation. Other data that have less influence on ERUs (mass and N content of substrate taken to the fields) are stored in a well managed traditional filing system. The JI related processes are integrated into the Integrated Management System (Quality Management System and Environmental Management System) of PA.	OK	OK
101 (d)	Is the data collection and management system for the project in accordance with the monitoring plan?	Yes.the data collection and management system for the project in accordance with the monitoring plan /6/. See also comments at 99 (a).	OK	OK
Verification regarding programs of activities (additional elements for assessment)				
102	Is any JPA that has not been added to the JI PoA not	no specific JPA is included in the project other than the conversion		

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	verified?	of coal firing to biomass.		
103	Is the verification based on the monitoring reports of all JPAs to be verified?	N/A		
103	Does the verification ensure the accuracy and conservativeness of the emission reductions or enhancements of removals generated by each JPA?	N/A		
104	Does the monitoring period not overlap with previous monitoring periods?	N/A		
105	If the AIE learns of an erroneously included JPA, has the AIE informed the JISC of its findings in writing?	N/A		
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 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	N/A		

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	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?	N/A		
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?	N/A		
109	Is the sampling plan available for submission to the secretariat for the JISC.s ex ante assessment? (Optional)	N/A		
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?	N/A		

Table 2: Verification risks

Identification of potential reporting risk	Verifier Control steps applied	Conclusions
1. Inaccurate measurements of key parameters	Inspection of calibration and maintenance records for key equipment Observation of conditions of each critical measuring equipment	Measuring equipment is calibrated. All key measurements are automated and data collected in a closed loop.
2. Disfunction of installed equipment	Observation of conditions of each critical measuring equipment Review of data logs for extreme results.	The disfunction must be noticed by operating staff, these are recorded in the biogas plant operation log. Despite of this, due to different difficulties there was a period when a key measuring equipment (gas flow meter) was producing false data. The neces-sary corrective actions were taken and now the spare flow meter is also calibrated in order to prevent re-occurance of the problem. The background for the operations is supported by a sound IT system, all data are logged and retrievable. The monthly data processing protocol includes consistency checks by area managers which help
3. Maloperation by operational personnel	key staff interviews revision of related procedures, work instructions	professional staff, aware of their jobs and duties clear, detaled procedures
4. Downtimes/replacement of measuring equipment	The emergency plan includes the replacement of most key measuring equipment. Dispite of this there were some problems with the replacement of the gas flow meter (see above). The situation during the verification visit seemed settled, now a calibrated spare flow meter is available. The planned replacement of the gas analyser was postponed, but now this was in an advanced status.	developing system
5. Error/data loss due to IT problems	Revision of procedures relating to data safety Review of IT practice	Robust IT system, with several safety measures and protocols
6. Error, inconsistencies in applied data sources , calculations, formulae	Off-site check of all equation and algorithms used in different workbook sheets. All applied standards, factors are from external approved sources.	After closing all issues raised, the risks are minimized
7. Inaccuracies during data transfer	Review of data processing method.	All data transfer steps are checked for consistency and accuracy,

	Random sampling of data	the system seems reliable.

Table 3 Legal requirements

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Track1 Compliance	UNFCCC Compliance	Conclusion
1. Are the "Required contents of the annual report on the realisation and operation of an approved joint implementation project" met as it is stated in Annex 4 to 323/2007 (XII.11.) Gov. Decree, including the followings:	1	DR		OK	OK	OK
1. General information 1.1 Subject of the project, 1.2 Place of implementation, 1.3 Information on the Project developer: name, registered office, address, phone number and electronic address, 1.4 Information on the contact person appointed by the Project developer: name, address, phone number and electronic address, 1.5 Reported period.	2	DR	All required info precisely given	OK	OK	OK
2. Baseline information 2.1 Baseline determined in the Project design document (in case of any change, detailed description and explanation of the changes)	3	DR	All required info precisely given	OK	OK	OK
3. Project emissions 3.1 Introduction of project boundaries: emission types reckoned in the emissions of the reported period, 3.2 Emissions of the project and detailed description of the calculations confirming it, 3.3 Leakage: net change in the emissions level of greenhouse gases attributable to the project beyond the project boundaries.	4	DR	3.1.1 The attached chart should be updated also in line with the corrections made after CR3	NOK	OK	OK

* Means of Verification; DR: Document

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Track1 Compliance	UNFCCC Compliance	Conclusion
4. Emissions reduction realised by the project in the reported period 4.1 Amount of net emissions reduction in the reported period (tonne CO2 eq./year) 4.2 Time schedule for implementation for the periods following the reported period	5	DR	All required info precisely given	OK	OK	OK
5. Description of the technology applied 5.1 Summary of the built-in equipment/facilities and of technical data 5.2 Detailed description of changes compared to the Project design document 5.3 Technical documentation (results of records of performance measurements)	6	DR	All required info given	OK	OK	OK
6. Financial report 6.1 Investment and operational costs in the reported period 6.2 Financial support from state, local government, European Union or other sources used during the reported period and verification that the project still complies with the requirement of financial additionality	7	DR	As the 2010 financial books were not audited yet by independent financial auditors, the financial information given is in line with the legally binding statement which was given by Top Management of PA to Bureau Veritas Certification (see Ref /17/. See comments also in Chapter 1.2 Scope.	OK	OK	OK
7. Verification Report	8	N/A	N/A	N/A	N/A	N/A
8. Results of the internal audits of the reported period	9	DR	Internal audit reports attached as Annex	OK	OK	OK
9. Other environmental impacts	10	DR	All required info given	OK	OK	OK
10. Summary (for non-experts) 10.1 Emissions baseline, project boundaries, applied technology 10.2 Emissions reduction in the reported period	11	DR	All required info given	OK	OK	OK

Table 4: Resolution of Corrective Action and Clarification Requests

#	Report clarifications and corrective action requests	Ref. to checklist question in table 1	Summary of project owner response	Verification conclusion
CAR1	The calculation of Substituted (prevented) fertilizer usage considers also such fertiliser (MAP) which is used for it's P content and as a result cannot be substituted by the N-content of substrate coming from biogas plant.	**93, 95(d)**	We removed MAP from the baseline and from the calculations.	OK, the new calculation reviewed. Issue closed.
CAR2	The mixers of the lagoon (total power of 4*19.5 kW) are connected to the electricity supply of another unit of the company, not measured as part of self-consumption. As this electricity use is within the boundary, it should be clarified, what is the range of used electricity and should be added to self-consumption if it is not negligible.	**95(d)**		OK, this quantity is not material in year 2010. Issue closed for now. For future considerations see FAR3
CAR3	The temperature and pressure measuring equipment are not shown on ER report Figure 1, on MP flowchart ("1. ábra) and they are not listed in Table 4 of MP.	**101(b)**	Table 4 and Figure 1 in MP, as well as Figure 1. in ER report were amended.	MP and ER report changes revised. OK, issue closed.
CAR4	The uncertainty assessment does not take into account all information available about the measuring equipment (calibration records of 1602E, specifications of thermometer, quarterly calibration records of gas analyser)	**101(b)**	The uncertainty calculations were fine tuned with the additional data.	Spreadsheet with modified uncertainty calculations revised. OK, Issue closed.
CR1	Data show that in December both the flare and gas engine was down the same time. It should be estimated what volume of methane was released to the atmosphere, whether is has any influence on ERUs and what corrective measures were taken to prevent the re-occurrence of such situation in the future.	**93**	Conservatively estimating (providing an upper limit) a total of 681,24 m3 = 622 Nm3 biogas, that equals to 401 Nm3 = 0,29 t methane = 6,04 t CO2 was leaked from the system. Although this leakage has not impact on the reduction amount, since it took place in the emergency system before the measurement device, it demonstrates that the gas engines and the their backup system, the torch may	OK, estimation verified, and as the operator explained this is what must happen in such cases, in order to prevent accidents. Issue closed

#	Report clarifications and corrective action requests	Ref. to checklist question in table 1	Summary of project owner response	Verification conclusion
			still cause difficulties that cannot be handled within the 2 hours timeframe (during which the temporary storage can withhold the generated biogas). The downtime was caused by an emergency shutdown that prevented all system parts from restarting within a given timeframe. The error was properly handled later and the system could restart in 4 hours.	
CR2	There were periods in 2010 when the gas flow meter was producing false data. The methane produced by the system in these periods was estimated based on data from previous year + the electricity production of gas engine. There were no sufficient evidences that this method is conservative enough.	**94, 95(d)**	We have changed the method according to a pattern when the methane concentrations of the preceding period (preceding week or month) were used instead of a yearly average. This would describe better the characteristics of the biology during the downtime of the meter.	Modified calculation and related uncertainty analysis were reviewed and verified,
CR3	The present flowchart in MP is not clear where exactly the measuring points are positioned. It should be clarified.	**95 (b)**	Flowchart has been updated to include the key measurement devices, and the textual explanation has been expanded to reflect the changes.	Modified MP was reviewed and verified, issue closed
FAR1	After the recommendation made by verifier last year, the spare gas flow meter was also sent for calibration, and then it was installed to replace the operating one (that one also needed calibration). But, the replacement was not documented anywhere Such important changes in the system should be documented.	**101 (b)**	Documentation practice during device installations will be amended.	This will be checked on next verification.
FAR2	After FAR4 from 2010, the documentation of maintenances done by sub-contractors improved a lot. However, the last evidence of flare maintenance is from 18.11.2010. PA should make sure that such key sub-contractors perform in accordance with the technical specifications and contractual agreements.	**FAR4 of previous verification**	A yearly diary with all timely maintenance tasks will be worked out. Also we will consider the options how we could improve our maintenance contracts.	This will be checked on next verification.
FAR3	The electricity consumption of mixers in lagoon may change in future due to different reasons (e.g. changes in technology, raw materials etc.) PA should amend the MP to ensure that they make a reading of the installed electricity meters every year before the reporting (e.g. at every 2nd internal audit) to make sure there are no significant changes compared to present situation.	**CAR2**	MP modified accordingly.	The results of these actions will be checked on next verification.