VERIFICATION REPORT
PÁLHALMAI AGROSPECIÁL LTD.

VERIFICATION OF THE
PÁLHALMA BIOGAS PROJECT

REPORT NO. HUNGARY-VER/03/2012/V2

REVISION NO. 02

BUREAU VERITAS CERTIFICATION

Date of first issue: 24/03/2011	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 5th verification of emission reduction of yr. 2011 (1st January 2011 – 31st December 2011) 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 project is using own methodology, partially based on AMS-III.D., Version 13.

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 39 357 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/03/2012/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) Tamás Németh Expert (Team Member)		
Work reviewed by: Zhenning Wang		
Work approved by: Olivier Ducrot		
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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
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
MoV	Means of Verification
MP	Monitoring Plan
NGO	Non Governmental Organisation
PA	Pálhalma Agrospeciál
PDD	Project Design Document
QMS	Quality Management System
UNFCCC	United Nations Framework Convention on Climate Change

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.

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:

Zsolt Bácskai
Bureau Veritas Certification Team Leader, Climate Change Lead Verifier

György Laczkó
Bureau Veritas Certification Climate Change Verifier, Finance

Tamás Németh
Bureau Veritas Certification Climate Change Expert

This verification report was reviewed by:

Zhenning Wang

Short Summary of Team experience :

NAME	GRADUATION	EXPERIENCE
Zhenning Wang	MSc Degree in Environmental Technology and Bachelor Degree in Environmental Engineering 3 years experience in climate change auditing and 2 years working experience in project management in various industrial sectors	Climate change auditing Before joining BV in 2010, he gained 4 years of technical experiences in the CDM industry in P.R China. He has handled various kinds of CDM projects including renewable energy, animal manure management, cement production and WHR etc. He obtained the certificate of CDM Verifier in Nov 2010. He obtained the certificate of CDM Verifier and Lead Auditor for EMS ISO 14001.
Zsolt Bácskai	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 Leading of over 15 Initial, Annual Verifications and Determinations at 7 JI projects
György Laczkó	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

Tamás Németh	Agro engineer, Environmental Engineer, Environmental Lawyer	over 10 years experience in environmental auditing

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 verification 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 12/03/2012 Bureau Veritas Certification performed on-site interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of 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.
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 (CL), requesting the project participants to provide additional information for the AIE Verification Team to assess compliance with the monitoring plan;

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

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

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

3 VERIFICATION CONCLUSIONS

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

The findings from the desk review of the original monitoring documents and the findings from interviews during the follow up visit are described in the Verification Protocol in APPENDIX 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 5 Corrective Action Requests 2 Clarification Requests and 2 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 2010 emission reductions the following FARs were raised:

FAR#1:
"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."

The issue was replied during the previous verification process as follows:
"Documentation practice during device installations will be amended."

The conclusion of verifier was:
"This will be checked on next verification."

Situation found during verification of 2011 emission reductions:
In 2011 there were again some problems with the measuring equipment, but these were duly documented. The practice of due documentation of such cases should be continued.

FAR#2:
"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."

The issue was replied during the previous verification process as follows:

"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."

The conclusion of verifier was:
"This will be checked on next verification."

Situation found during verification of 2011 emission reductions:
The maintenance and its documentation is now running on a more transparent and planned way, including diary. Some maintenance contracts were newly signed

FAR#3:
"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."

The issue was replied during the previous verification process as follows:
"MP modified accordingly."

The conclusion of verifier was:
"The results of these actions will be checked on next verification."

Situation found during verification of 2011 emission reductions:

The electricity meter reading were duly done, and related electricity consumption was counted with as project emission.

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 2011 with variable performance, facing different difficulties. There were returning problems with the methane analyser and after several months struggling the measuring equipment was replaced. As the first method applied to bridge the gaps with no reliable methane concentration data was not conservative, another method was implemented (see CAR3).
In August there was also a serious incident when one of the gas engines blew off (nobody hurt). From this period the smaller gas engine has produced the electricity. As an overall result the flare was running more than planned (>200 hrs/yr). There will be a key technical improvement in the bioreactors, where special caution is needed, this is why FAR1 was raised .

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

Regarding methane elimination part of the project, the concept drafted in the original PDD and in draft Baseline Study and Monitoring Plan was overcomplicated, not transparent and less verifiable (including daily manual logging of number of livestock and volume of litter at all related farms and using animal-specific methane production data from literature). This approach was changed during the practical implementation of the project, changed to ex-post measurements of utilised methane, and a more practicable new MP was developed (in Hungarian), quoted in the 1st periodic Verification Report (/11/) as Monitoring Plan v2.0.
This modification was verified by another AIE in two subsequent periodic verification, and accepted by DFP. This ‘practicable’ MP was further improved during subsequent verifications, by the end of this annual verification the version 2.06 was elaborated.
Concerning the generated electricity other emission reduction element of the project, the measurement, collection and processing of operational data which are needed for the calculation of was performed in accordance with the original monitoring plan.
The 3rd (and less significant) element of the emission reduction comes from the substituted artificial fertilizers. Here again the (Hungarian) MP 2.0 drafted a far more straightforward and practicable, traceable method, which was approved by former AIE and DFP in 2008. Although the 2.0 did not specify how PA will generate the fertiliser delivery data for the calculation, later it was specified in more detail (using weight bridges for each deliveries). This practice was more simplified, where some concerns were raised regarding the method (see CAR3). After PA’s actions the issue was closed.

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 /26/).

Internal data sources used for calculating emission reductions are in most cases clearly identified, reliable and transparent.
However, the data source identified in MP (2.05) for the fertiliser volume calculation is not in line with the practice, see CAR3.
During verification further project emission source was identified (newly established backup power connection). See CAR4.
Regarding methane concentration of biogas the above mentioned problems with the gas analyser required intervention and conservative approach was requested to bridge the periods with missing data (see CAR2).
At the fertiliser part of the project, a calculation error was identified for the N content of fertiliser after October. See CAR5.

These concerns were duly clarified and the applied interventions ensured that the calculations are conservative.

After corrections/clarifications made to CL2 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 first draft of MP was issued when PDD was determined (/5/). The project owner developed a detailed practicable (Hungarian) MP before the start of this Kyoto period, and the plan was approved by the AIE and DFP (see earlier comments). This MP was subject to modifications in each year, in line with the relevant CLs/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 2011 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.

One of the key measuring equipment, the Fresenius methane analyser had serious operational problems, starting from February, which ended up with the replacement of the equipment with a new type (Stiebel, “Enviro 100” , first installation on 26th May, but still several follow-up adjustments and settings/corrections were needed, fully operational from 25th July). In the meantime only random measurement data are available, including a portable CH4 analyser, but the frequency of reliable data were much lower than it was proposed. Also after the installation of the new equipment there were some problems which again resulted in periods with scattered and less reliable data. There were obvious evidences that there were no significant changes in the methane production, since the specific fuel consumption of gas engines (produced kWh/used biogas m3) was stable – except August when the gas engine blew off and the smaller spare one had to startup. In order to make sure a conservative methane concentration value will be used in the critical periods, CAR2 was raised.
Additional CL1 and CL2 was raised to make sure the measuring equipment is properly fitted into the documentation system and to make sure the uncertainty calculations refer to proper data.

The implementation of data collection procedures is in accordance with the MP /6/, including the quality control and quality assurance procedures. The problems with CH4 analyser raised the question whether the emergency plan for substituting these devices was sufficient enough. See CAR1 –and for future considerations –subsequently raised FAR2..

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 traditional filing system and are subject to regular reporting to Soil Protection Inspectorate. 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 traditional filing system and are subject to regular reporting to Soil Protection Inspectorate. 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 5th periodic verification of the Pálhalma Biogas Project in Hungary. . The project is using own methodology, partially based on AMS-III.D., Version 13. 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 (modified and approved at the first verification in 2008, and further fine tunings carried out during each verification cycle, see Ref /6/), 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 01/01/2011 to 31/12/2011
Emission Reductions (yr 2011) : 39 357 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 2011 Emission Reduction Report for the Biogas Joint Implementation Project of Pálhalmai Agrospeciál Kft.; final version 26 March 2011 (2_ER_report_Agrospec_JI_EN_2011_fin.pdf)

/2/ Hungarian report titled "Kibocsátás-csökkentési Jelentés A Pálhalmai Agrospeciál Kft. Biogáz Üzem Együttes Végrehajtás Projektjének 2011. évi teljesítményéről, végleges változat", 26th 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 2.06, 24 March 2011, after verification process v 2.07 (valid from 01.04.2012), Agrospec_biogaz_Monitoring_terv_v207_fin.pdf")

/7/ calculation spreadsheet supporting 2011 ER report (first version : "Agrospec_csokkentesi_szamitasok_2011_draft2.xls", modified after clearance of all issues including ITR: 1_Agrospec_csokkentesi_szamitasok_2011_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/Verification Report of Pálhalma Biogas Project, Hungary, Bureau Veritas Certification, 31/03/2011, VER/02/2011/V2, Verification Period: 1 January 2010 - 31 December 2010

/15/Integrated Management System procedures ("MINŐSÉG- ÉS KÖRNYEZETKÖZPONTÚ IRÁNYÍTÁSI ELJÁRÁSOK"), v5.1, 2010/03/04

/16/Work Instruction 33 on JI annual emission reduction determination at PA, v1, 2010-02-24

/17/Internal Audit reports (Belso_audit_ellenorzesi_jegyzokonyv_20111026.pdf, Belső audit ellenőrzési jegyzőkönyv 20120201.pdf)

/18/Financial Statement from Top Management of PA Ltd., on on 2011 financial performance of the Biogas Unit of PA (received as hardcopy, doc id: 76/19-20/2012)

/19/Original invoices showing the sold electricity to MAVIR (January-December 2011)

/20/Accredited lab results of liquid fertiliser analyses (19/04/2011, 06/10/2011)

/21/Statements, calibration and maintenance records from CH4 measuring equipment supplier

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

/22/ 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

/23/ 1/2009 (II.10.) KvVM Decree about the rules of the verification process

/24/ Validation and Verification Manual, Version 3.3, March 2004, Copyright 2004 IETA/PCF

/25/ Joint Implementation Determination And Verification Manual, V 01

/26/ 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.

2012-03-29

Zhenning Wang
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.

Németh Tamás
szakértő
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
Németh Tamás	hitelesítési szakértő	agrármérnök, hulladékgazdálkodás
Zhenning Wang	Belső független felülvizsgálat (Independent Technical Review)	JI hitelesítés,

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		2012-03-07

Szemle időpontja: 2012-03-12

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
16.00	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 2012-03-07

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	
Németh Tamás	Bureau Veritas Magyarország Kft.	szakértő	
Zsedrovics Lea	Pálhalmai Agrospeciál Kft.	üzemvezető	
Hódi István	Pálhalmai Agrospeciál Kft.	műszakvezető	
Czeilinger József	Pálhalmai Agrospeciál Kft.	elektrikus	
Gubacsi Gergely	Interzóna Klímavédelmi Tanácsadás	tanácsadó	
FARSANG ÁKOS	INTERZÓNA -K	tanácsadó	

Pálhalma, 2012-03-12

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 2011 with variable performance, facing different difficulties. There were returning problems with the methane analyser and after several months struggling the measuring equipment was replaced. As the first method applied to bridge the gaps with no reliable methane concentration data was not conservative, another method was implemented (see CAR3). In August there was also a serious incident when one of the gas engines blew off (nobody hurt). From this period the smaller gas	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		engine has produced the electricity. As an overall result the flare was running more than planned (>200 hrs/yr). There will be a key technical improvement in the bioreactors, where special caution is needed, this is why FAR1 was raised .		
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?	Regarding methane elimination part of the project, the concept drafted in the original PDD and in draft Baseline Study and Monitoring Plan was overcomplicated, not transparent and less verifiable (including daily manual logging of number of livestock and volume of litter at all related farms and using animal-specific methane production data from literature). This approach was changed during the practical implementation of the project, changed to ex-post measurements of utilised methane, and a more practicable new MP was developed (in Hungarian), quoted in the 1st periodic Verification Report (/11/) as Monitoring Plan v2.0. This modification was verified by another AIE in two subsequent periodic verification, and accepted by DFP. This 'practicable' MP was further improved during subsequent verifications, by the end of this annual verification the version 2.06 was elaborated. Concerning the *generated electricity* other emission reduction element of the project, the measurement, collection and processing of operational data which are needed for the calculation of was performed in accordance with the original monitoring plan. The 3rd (and less significant) element of the emission reduction comes from the substituted artificial fertilizers. Here again the (Hungarian) MP 2.0 drafted a far more straightforward and practicable, traceable method, which was approved by former AIE and DFP in 2008. Although the 2.0 did not specify how PA will generate the fertiliser delivery data for the calculation, later it was specified in more detail (using weight bridges for each deliveries). This practice was more simplified, where some concerns were	NOK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		raised regarding the method (see CAR3). After PA's actions the issue was closed.		
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?	Internal data sources used for calculating emission reductions are in most cases clearly identified, reliable and transparent. However, the data source identified in MP (2.05) for the fertiliser volume calculation is not in line with the practice, see CAR3. During verification further project emission source was identified (newly established backup power connection). See CAR4.	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 /26/).	OK	OK
95 (d)	Is the calculation of emission reductions based on conservative assumptions and the most plausible scenarios in a transparent manner?	Regarding methane concentration of biogas the above mentioned problems with the gas analyser required intervention and conservative approach was requested to bridge the periods with missing data (see CAR2). At the fertiliser part of the project, a calculation error was identified for the N content of fertiliser after October. See CAR5.	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	N/A		

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	exceeded, is the maximum emission reduction level estimated in the PDD for the JI SSC project or the bundle for the monitoring period determined?			
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 first draft of MP was issued when PDD was determined (/5/). The project owner developed a detailed practicable (Hungarian) MP before the start of this Kyoto period, and the plan was approved by the AIE and DFP (see earlier comments). This MP was subject to modifications in each year, in line with the relevant CLs/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 2011 emission reductions. Latest version of MP is referenced under /6/.. The updated Hungarian MP is submitted to DFP as Annex to annual ER Report.	OK	OK
99 (b)	Does the proposed revision improve the accuracy and/or applicability of information collected	The basic purpose of all requests for modification was to improve the accuracy and/or applicability of information collected without	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	compared to the original Monitoring Plan without changing conformity with the relevant rules and regulations for the establishment of monitoring plans?	changing conformity with the relevant rules and regulations for the establishment of monitoring plans.		
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 problems with CH4 analyser raised the question whether the emergency plan for substituting these devices was sufficient enough. See CAR1 –and for future considerations – subsequently raised FAR2..	NOK	OK
101 (b)	Is the function of the monitoring equipment, including its calibration status, is in order?	One of the key measuring equipment, the Fresenius methane analyser had serious operational problems, starting from February, which ended up with the replacement of the equipment with a new type (Stiebel, "Enviro 100" , first installation on 26th May, but still several follow-up adjustments and settings/corrections were needed, fully operational from 25th July). In the meantime only random measurement data are available, including a portable CH4 analyser, but the frequency of reliable data were much lower than it was proposed. Also after the installation of the new equipment there were some problems which again resulted in periods with scattered and less reliable data. There were obvious evidences that there were no significant changes in the methane production, since the specific fuel consumption of gas engines (produced kWh/used biogas m3) was stable – except August when the gas engine blew off and the smaller spare one had to startup. In order to make sure a conservative methane concentration value will be used in the critical periods, CAR2 was raised. Additional CL1 and CL2 was raised to make sure the measuring equipment is properly fitted into the documentation system and to make sure the uncertainty calculations refer to proper data.	NOK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
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 traditional filing system and are subject to regular reporting to Soil Protection Inspectorate. 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 verified?	no specific JPA is included in the project other than the conversion 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	N/A		

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	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 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	N/A		

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	secretariat for the JISC.s ex ante assessment? (Optional)			
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. Not all project emissions are accounted for	Review of PDD, MP, BS + site inspection, review of energy/fuel transfers, related evidences, spreadsheets	CAR4 was raised to include a minor new project emission source.
2. Inaccurate measurements of key parameters	Inspection of calibration and maintenance records for key equipment Observation of conditions of each critical measuring equipment	As some CH4 concentration data were lacking confidence during extensive periods, conservative underestimation was applied See details at CAR2. In general, measuring equipment is calibrated. All key measurements are automated and data collected in a closed loop. To make the system more transparent and to clarify some details, CL2,
3. Disfunction of installed equipment	Observation of conditions of each critical measuring equipment Review of data logs for extreme results. Review of maintenance records.	The disfunction must be noticed by operating staff, these are recorded in the biogas plant operation log. Due to different difficulties there were periods when a key measuring equipment (CH4 analyser) was producing false data. The necessary corrective actions were taken and finally the critical equipment was replaced, a spare one is under purchasing which will be also calibrated in order to prevent re-occurrence of the problem (see CAR1, CAR2 on this issue). 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 also help to identify trends that may lead to non-conformity.
4. Maloperation by operational personnel	key staff interviews revision of related procedures, work instructions	professional staff, aware of their jobs and duties clear, detailed procedures
5. Downtimes/replacement of measuring equipment	The emergency plan includes the replacement of most key measuring equipment. Despite of this there were some problems with the replacement of the gas analyser (see above). The situation during the verification visit seemed settled, the critical equipment was replaced, a spare one is under purchasing which will be also calibrated in order to prevent re-occurrence of the	After settling CAR1 and CAR2 the system is more robust, we do not expect such incident any more.

	problem.	
6. 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
7. 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.	CAR5 was raised to eliminate an erroneous calculation.
8. Inaccuracies during data transfer	Review of data processing method. Random sampling of data	All data transfer steps are checked for consistency and accuracy, including backtracking performance data to PLC system. The system was found to be 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	After some correction of some inaccuracies not 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	All required info precisely given	OK	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 precisely 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 2011 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 REF fin_stat \r \h /18/. 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
CL1	The calibration records of CH4 analyser contain reference to the uncertainty of the measured values, this should be used for the taken into account during uncertainty assessment.	101 (b)	Uncertainty assessment has been modified accordingly.	Amendments reviewed, OK, issue closed.
CL2	The portable CH4 meter should be also mentioned on the list of measuring equipment in the Monitoring Plan and in the calculation spreadsheet. As the combined CH4-CO2-O2 meter was replaced by a simple CH4 meter, the Monitoring Plan should be amended also with this information.	101 (b)	As the new portable meter's measurement results cannot be taken into consideration according to the ITR, we do not include this device in the mentioned device list. Instead, we purchase a calibrated substitute methane analyser of the same type as currently installed, and that will be included in the MP. The MP (version is v2.07) is modified according to the changes in the CH4 metering layout and the measurement device.	Argument is accepted, Amendments reviewed, OK, issue closed.
CAR1	The emergency plan described in Monitoring Plan proved to be insufficient to handle the regular breakdown of the CH4 analyser (according to the plan a sub-contractor should have been provided replacement in 24/7 service). The emergency plan should be revised and PA should make sure neither this nor any other key parameter should be left without *real, effective* backup solution.	101 (a)	Substitution according to the previous emergency plan could not be carried out, because it was not only the device that went out of order, but the entire system had to be revised in order to avoid future breakdowns. In MP v2.07 the emergency plan has been revised. The new device substitution refers to the new CH4 analyser (the procurement of which is in progress).	The additional purchase of new device + modified layout give now much higher safety. The MP was modified. OK, issue closed. See also FAR1 For future considerations.

<table>
<tr>
<td>CAR2</td>
<td>For the period of CH4 analyser problems (see CAR1) the first draft ER calculations “bridged” the missing data with average values of the surrounding period. There are doubts about conservativeness of this approach. As a precedent, the latest (04 Jan 2012) UNFCCC-approved deviation case should be adopted (see http://cdm.unfccc.int/Projects/deviations/01767, raised for a very similar case).</td>
<td>95 (d)</td>
<td>The lowest value of the monthly averages have been used as “default” value for those months with unreliable periods. As there were several months in 2011 for which no reliable monthly averages can be calculated, these months should be substituted with the respective monthly values measured in the preceding year (to reflect the seasonality.) The substitutions are carried out following the logic bellow (the table is exemplary only, actual substitutions are presented in the ER calculations CH4 corrections worksheet):
<table>
<tr><th>Year \ month</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th></tr>
<tr><td>2009</td><td></td><td></td><td></td><td></td><td></td><td></td><td>A</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>2010</td><td></td><td>A</td><td></td><td></td><td>A</td><td></td><td>P</td><td>A</td><td>A</td><td></td><td></td><td></td></tr>
<tr><td>2011</td><td>A</td><td>P</td><td>A</td><td>A</td><td>P</td><td>A</td><td>P</td><td>P</td><td>P</td><td>A</td><td>A</td><td>A</td></tr>
</table>
where "P" means problematic months, while "A" actual months to be considered.</td>
<td>Method and related spreadsheet reviewed, proved to be conservative approach.
OK, issue closed.</td>
</tr>
<tr>
<td>CAR3</td>
<td>As a simplification, the practice of monitoring of fertiliser usage was modified. As the fertiliser deliveries are done with the same tractor-moved 2 tanks, which are always filled up to maximum (to optimise on delivery costs), the fertiliser usage is monitored with counting the number of deliveries (based on GPS tracking of the vehicle), and calculating the mass of N from volume, density and N content. The method does not pose significant risk on the final ERUs, but the method should be validated (records maintained), with comparing the measured weight results with the calculated ones. The weight bridge(s) can remain in the Monitoring Plan as in case of changing the tanks the validation should be repeated.
The Monitoring Plan should be updated with the changes.</td>
<td>94, 95 (b)</td>
<td>We have introduced random control measurements of the trucks to justify the calculations (only in those months when deliveries take place). To date, the presented records showed a 10%+ deviation in the conservative direction: actual measurement showed 20+ tons for the truck, while only 18 t/truck have been assumed in the calculations.
MP v2.07 has been updated to reflect the above mentioned checks.</td>
<td>Method and related amendments in MP reviewed, proved to be conservative.
OK, issue closed.</td>
</tr>
<tr>
<td>CAR4</td>
<td>Due to maintenance requirements special external power access was established for some units of the substrate supply system which are vital for the biological system. In 2011 there were 4 days when this supply had to be used (main transformer</td>
<td>95 (b)</td>
<td>Estimation has been provided and included in both the calculation worksheet and the MP.</td>
<td>estimation method conservative, approved, MP reviewed,approved</td>
</tr>
</table>

	maintenance). PA should make a conservative estimate of the power used during this period and should count with this as self-consumption.			OK, issue closed
CAR5	The October analysis records from accredited laboratory gave the results in different unit than for March, but the N content calculations did not take this into account. The calculation should be modified in order to give results in line with the accredited analysis results.	95 (d)	Calculations have been updated accordingly.	The spreadsheet reviewed, calculation correct. OK, issue closed.
FAR1	The project owner plans a massive reconstruction of the biological units in 2012 in order to prevent regular clogging problems caused by manure with straw litter. During these works they should make sure the monitoring of parameters used for emission reduction calculations will not be negatively influenced and the integrity of data will not be hurt. It is recommended that during the project planning they review carefully all possible risks that can endanger the reliability of monitoring system.	93		
FAR2	There are returning problems with measuring equipment and there are doubts about the results of analysis (this is why conservative approach had to be applied after raising CAR1 and CAR2). We request the project owner test the accuracy of the equipment before maintenances, and tested accuracy should be used in the next periodical verification.	CAR1, CAR2		