VERIFICATION REPORT
EKORESURSAI,UAB

VERIFICATION OF THE

LAPES LANDFILL GAS UTILIZATION AND ENERGY GENERATION

MONITORING PERIOD:
23 DECEMBER 2011 TO 31 DECEMBER 2012

REPORT NO. LITHUANIA-VER/0094/2013
REVISION NO.02

BUREAU VERITAS CERTIFICATION

Report No: LITHUANIA-ver/0094/2013

VERIFICATION REPORT

Date of first issue: 25/03/2013	Organizational unit: Bureau Veritas Certification Holding SAS
Client: EKORESURSAI, UAB	Client ref.: Gerardas Zukauskas, Director

Summary:
Bureau Veritas Certification has made the 4th periodic verification of the JI Track II Project "Lapes Landfill Gas Utilization and Energy Generation", JI Registration Reference Number 0049, project of Ekoresursai, UAB, located at Lapes Subdistrict, Kaunas District Municipality, Lithuania applying the project specific methodology on the basis of UNFCCC criteria for the JI as well as the 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 the defined verification period, and consisted of the following three phases: i) a desk review of the project design, 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 Action Requests, Forward Action Requests (CR, CAR and FAR), presented in Appendix A.

In summary, Bureau Veritas Certification confirms that the project is implemented as planned and described in approved project design documents. The 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 is total 7,444 tons of CO2eq for the monitoring period 23/12/2011-31/12/2012.

Our opinion relates to the project's GHG emissions and resulting GHG emission reductions reported and to the approved project baseline and monitoring, and its associated documents.

Report No.: LITHUANIA-VER/0094/2013	Subject Group: JI	
Project title: Lapes Landfill Gas Utilization and Energy Generation		
Work carried out by: Tomas Paulaitis: Lead Verifier		
Work reviewed by: Witold Dzugan: Internal technical reviewer Kęstutis Navickas: Technical specialist		
Work approved by: Witold Dzugan		
Date of this revision: 29/03/2013	Rev. No.: 02	Number of pages: 23

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1 INTRODUCTION

Ekoresursai, UAB has commissioned Bureau Veritas Certification to verify the emission reductions of its JI project “Lapes Landfill Gas Utilization and Energy Generation” (hereafter called “the project”) at Lapes Subdistrict, Kaunas District Municipality, Lithuania. This report summarizes the findings of the verification of the project, performed on the basis of UNFCCC criteria, as well as the criteria given to provide for consistent project operations, monitoring and reporting.
The order includes the 4th periodic verification of the project for the period 23/12/2011-31/12/2012.

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 a defined verification period.

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

UNFCCC criteria refer to Article 6 of the Kyoto Protocol, the JI rules and modalities and the subsequent decisions by the JI Supervisory Committee, as well as the host country criteria.

1.2 Scope

The verification scope is defined as an independent and objective review of the project design document, the project’s baseline study, monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations.

The verification is not meant to provide any consulting towards the Client. However, stated requests for clarifications 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:

Tomas Paulaitis
Bureau Veritas Certification Team Leader, Climate Change Verifier

This verification report was reviewed by:

Witold Dzugan
Bureau Veritas Certification Internal reviewer

Kęstutis Navickas
Bureau Veritas Certification Technical specialist

2 METHODOLOGY

The overall verification, from Contract Review to Verification Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

In order to ensure transparency, a verification protocol was customized for the project, according to 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, the criteria (requirements), means of verification and 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 A to this report.

2.1 Review of Documents

The Monitoring Report (MR) first version dated 04/02/2013 (monitoring period 23/12/2011-31/12/2012) submitted by Ekoresursai, UAB and additional background documents related to the project design and baseline, i.e. country Law, Project Design Document (PDD), Project Determination Report, previous verification report, 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 project as described in the final PDD version 9 dated 10/11/2009 and the Monitoring Report version 2 dated 25/03/2013.

2.2 Follow-up Interviews

On 20/02/2013 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 were interviewed (see 5 References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
Ekoresursai, UAB	Organizational structure, responsibilities and authorities Project implementation and technology Training of personnel Quality management procedures Metering equipment control Monitoring record keeping system Environmental requirements Monitoring plan Monitoring report

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 need to be clarified for Bureau Veritas Certification positive conclusion on the GHG emission reduction calculation.

If the Verification Team 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 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 A.

3 VERIFICATION CONCLUSIONS

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

The findings from the desk review of the original monitoring documents and the findings from interviews during the follow up visit are described in the Verification Protocol in Appendix A.

The Clarification, Corrective and Forward Action Requests are stated, where applicable, in the following sections and are further documented in the Verification Protocol in Appendix A. The verification of the Project resulted in 0 Corrective Action Requests, 1 Clarification Requests, and 0 Forward Action Requests.

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

3.1 Remaining issues and FARs from previous verifications

Remaining issue from the previous verification is request to describe changes in relation with implementation of the activities related with Lapes landfill biogas utilization from II-III fields (verification team conclusion for CAR1). This request is addressed in the Monitoring report section 3 and has been assessed in the Verification report section 3.3 below.

3.2 Project approval by Parties involved (90-91)

Written project approval has been issued by the Swedish DFP (Swedish Energy Agency) of that Party when submitting the first verification report to the secretariat for publication in accordance with paragraph 38 of the JI guidelines, at the latest (LoA is issued on 09/08/2010).

The abovementioned written approval is unconditional.

3.3 Project implementation (92-93)

The project implementation has been checked according to the information provided in the PDD already during the 1st verification. The plant started to extract and flare landfill gas in June 2008 and was ready to generate emission reductions before the start of the 1st monitoring period (1 July 2008). Production and monitoring of the electric and heat power using landfill gas was started on 22 August 2008. It has been stated already that the project has been implemented in accordance with the PDD.

All the equipment has been installed as specified in the PDD, including:
- wells;
- measuring, pumping and regulation (MPR) station;

- flare;
- landfill gas pipeline;
- gas mixing equipment;
- cogeneration plant including electricity and heat interconnections.

Monitoring tests on the noise from electricity generation were carried out on 25/09/2008, the noise level near the surrounding living area (44 dBA) was found below the limited level defined on hygienic norm HN 33:2007 (55 dBA).

Additional biogas extraction system in Lapes landfill fields II-III, booster station and additional CHP plants with capacities of 1,6MWe and 1,57 MWth has started to operate on 23/12/2011. Revision is described in the document provided by Ekoresursai, UAB "Track II Project "Lapes Landfill Gas Utilization and Energy Generation", JI Registration Reference Number 0049, project of Ekoresursai, UAB project and monitoring plan change"
This revision to project design was assessed by audit team as per PROCEDURES REGARDING CHANGES DURING PROJECT IMPLEMENTATION (Version 01):

Table 2

Requirement	Conslusions
The physical location of the project has not changed	The project comprises the Lapes landfill located in the municipality of Kaunas (PPD section A.4.1.4, Determination report, Annex 1, page 4), thus additional biogas extraction system in Lapes landfill fields II-III is not considered as project change, moreover, continues expansion of biogas extraction system is common practice for landfill gas utilisation projects in order to compensate production decrease in older wells. However, need for additional CHP plants with capacities of 1,6MWe and 1,57 MWth was not explained in the Monitoring report, thus CL1 is issued: CL1: Please clarify why new CHP plants with capacities of 1,6MWe and 1,57 MWth have been installed in addition to existing CHP plants. CL1 was resolved efficiently (refer to Table4).
If the emission sources have	Emission sources are not changed.

changed, they are reflected in an updated monitoring plan	
Baseline scenario has not changed	Baseline scenario is not changed.
The changes are consistent with the JI specific approach or the clean development mechanism (CDM) methodology upon which the determination was prepared for the project.	Changes are found consistent with methodology ACM0001, "Consolidated baseline methodology for landfill gas project activities", version 2.

The Bureau Veritas Certification hereby confirms that the nature of the changes implemented does not alter original determination opinion for the project, and thus it is confirmed that the conditions defined by paragraph 33 of the JI guidelines are still met for the project, in particular:
a) Changes of the project design do not influence approval of the project by the Parties involved;
b) The project results, as confirmed by monitoring and verification, in a reduction of anthropogenic emissions by that is additional to any that would otherwise occur;
c) The project has an appropriate baseline and monitoring plan in accordance with the relevant criteria, and the changes in the project design do not include change of the baseline scenario;
d) Changes of the project design do not influence environmental impacts of the project activity.

The project has operated without significant shutdowns and failures during the all monitoring period, and flare system was not used.

Horizontal data review end energy balance analysis was carried out by audit team in order to cross check provided monitoring data and calculations results. Analysis results are provided in table 3 below.

Table 3

	07/2008-12/2009	2010	2011	2012
Electricity produced, MWh	7389	4730	6308	10231
Heat produced, MWh	6610	4351,2	4743	5291
Energy from natural gas, MWh	3851	3430	1631	0
Energy from LFG, MWh	20068	11924	21487	32674
Energy efficiency,total, %	58,5	59,1	47,8	47,5
Energy efficiency, electricity, %	30,9	30,8	27,3	31,3
Nominal energy efficiency, electricity, %	35	35	35	35-42,5

There was noted that energy efficiency was significantly lower to compare with the 2008-2010 period. Lower efficiency is reasonable because high natural gas price has forced project owner to reduce consumption of natural gas in 2011 and to cancel its use on 01/03/2012. Gas mixture with lower CH4 amount has negative impact to the energy efficiency. Therefore, despite the installation of new generators with higher nominal efficiency, efficiency of the electricity production (31,3 %) was the highest in 2012 but has not reached nominal values.

The project generated a total of 7,219 tCO2 of emission reductions during the year 2012 compare to estimated 5,168 tCO2 in the PDD. Explanation that increased emission reduction in period compare to planed is impact of renovation and upgrading of gas extraction system with new adjustable valwes and rotameters which let us to ajust gas extraction volumes very precisely and collect generated biogas in landfill more efficient, is found reasonable. It should be noted that during the crediting period total estimated emission reduction was not achieved (94,467 tCOe instead of estimated 152,358 tCO2), mainly due to lower LFG production then expected in 2008-2011.

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

The monitoring occurred in accordance with the monitoring plan included in the PDD version 9 regarding which the determination has been deemed final and is so listed on the UNFCCC JI website:
http://ji.unfccc.int/UserManagement/FileStorage/28AXHPSNLQ615ZRO7FU9YBDIMEG30T

There were reviewed monitoring activities or use of default values on:

Methane fraction in LFG, vol. %*;
Amount of LFG to CHP plant, nm^3 *;
Amount of LFG flared, nm^3 *;
Flare temperature, ^0C *;
Electric power produced, MWh;
Electric power consumed, MWh;
Heat generated, MWh;
Natural gas consumed, nm^3;
Natural gas calorific value, $kcal/nm^3$;
Emission factor for heat generation, tCO2/MWh;
Emission factor for electricity generation, tCO2/MWh;
Emission factor for natural gas.

*is not applied for monitoring since 01/01/2012.

Data sources used for calculating emission reductions are clearly identified, reliable and transparent.

Default emission factors values (Emission factor for heat generation, Emission factor for natural gas, Emission factor for electric power generation) are selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice in the final PDD. There is no requirement to review these emission factors during the crediting period.

The calculation of emission reductions is based in a transparent manner.

3.5 Revision of monitoring plan (99-100)

Emission reduction calculation methodology remains without any changes, however new monitoring scheme is applied since 23/12/2011, it is described in the document provided by Ekoresursai, UAB “Track II Project “Lapes Landfill Gas Utilization and Energy Generation”, JI Registration Reference Number 0049, project of Ekoresursai, UAB project and monitoring plan change”

Monitoring scheme was assessed during site visit, including function of the monitoring equipment and its calibration status, and was found installed properly to ensure reliable emission reduction monitoring. Thus revised monitoring plan reflects project design changes and improves applicability of information collected.

3.6 Data management (101)

The implementation of these procedures and initial data documents (financial invoices on electricity supplied and consumed, natural gas consumed, heat supplied, SCADA data on LFG extracted and flared) were verified. The input of these initial data to the Excel spreadsheet was verified, no mistakes or missing data were found.

Excel spreadsheet formulas was reviewed and found in accordance with Monitoring plan.

The function of the monitoring equipment, including its calibration status, is found in order, see Annex A for more details.

The implementation of data collection procedures is in accordance with the monitoring plan.

3.7 Verification regarding programmes of activities (102-110)

Not applicable.

4 VERIFICATION OPINION

Bureau Veritas Certification has performed the 4th monitoring period verification of the Lapes Landfill Gas Utilization and Energy Generation, which applies the project specific methodology mainly based on ACM0001. The verification was performed on the basis of UNFCCC criteria and the 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) a desk review of the project design, baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and issuance of the final verification report and opinion.

The management of Ekoresursai, UAB is responsible for the preparation of the GHG emission data and the reported GHG emission reductions of the project on the basis set out within the project Monitoring Plan indicated in the final PDD version 9 dated 10/11/2009 and revised Monitoring scheme indicated in the "Track II Project "Lapes Landfill Gas Utilization and Energy Generation", JI Registration Reference Number 0049, project of Ekoresursai, UAB project and monitoring plan change", dated 25/03/2013. The development and maintenance of records and reporting procedures in accordance with that plan, including the calculation and determination of GHG emission reductions from the project, is the responsibility of the management of the project.

Bureau Veritas Certification verified the Project Monitoring Report version 2 dated 25/03/2013 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. The 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 emission 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 23/12/2011 to 31/12/2012

Baseline emissions	:	7,652 t CO2 equivalents
Project emissions	:	208 t CO2 equivalents
Emission Reductions (Year 2011)	:	225 t CO2 equivalents
Emission Reductions (Year 2012)	:	7,219 t CO2 equivalents
Emission Reductions, total	:	7,444 t CO2 equivalents

5 REFERENCES

Category 1 Documents:
Documents provided by EKORESURSAI, UAB that relate directly to the GHG components of the project.

/1/ PDD "Lapes Landfill Gas Utilization and Energy Generation", version 9, dated 10/11/2009
/2/ 2nd verification report, issued by Bureau Veritas Certification, No. LITHUANIA-VER/0018/2011, dated on 04/03/2011
/3/ 3rd verification report, issued by Bureau Veritas Certification, LITHUANIA-VER/0047/2012, dated 16/04/2013
/4/ Monitoring Report, dated 04/02/2013 (initial version 1)
/5/ Monitoring Report, dated 25/03/2013 (final version 2)
/6/ Excel calculation tool for monitoring period 23/12/2011-31/12/2012
/7/ Track II Project "Lapes Landfill Gas Utilization and Energy Generation", JI Registration Reference Number 0049, project of Ekoresursai, UAB project and monitoring plan change, dated 25/03/2013
/8/ Letter of Approval from the Investor party, issued by Swedish Energy Agency on 09/08/2010
/9/ Letter of Approval from the Host party, issued by Lithuanian Ministry of Environment on 14/12/2006
/10/ Construction completion certificate No SUA-2773-(15.34), dated 23/12/2011 issued for "Lapes landfill biogas from II-III field utilization for energy generation".

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

/1/ Monitoring management and quality assurance system procedures
/2/ Monitoring management and quality assurance system training records
/3/ Daily LFG plant check records, shown on-site

/4/ Generated electric power selling invoices
/5/ Generated heat power selling invoices
/6/ Consumed electric power purchase invoices
/7/ Natural gas purchase invoices
/8/ Metering equipment calibration records and maintenance records
/9/ Noise monitoring test report No 0601352-1, dated 25/09/2008

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

/1/ Mr. Gerardas Žukauskas,director, EKORESURSAI UAB
/2/ Mr. Vaidotas Kairiūkštis, engineer, EKORESURSAI UAB
/3/ Ms. Živilė Markūnaitė, office administrator, EKORESURSAI UAB

APPENDIX A: LAPES LANDFILL GAS UTILIZATION AND ENERGY GENERATION 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?	A written project approval (Letter of Approval) from the Investor party was provided, issued by Swedish Energy Agency on 09/08/2010. A written project approval (Letter of Approval) from the Host party was provided, issued by Lithuanian Ministry of Environment on 14/12/2006. These Letters of Approval have been submitted for IAE already during the determination process and were found acceptable.	O.K.	O.K.
91	Are all the written project approvals by Parties involved unconditional?	Yes, all the written project approvals by Parties involved are unconditional.	O.K.	O.K.
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 project was finally determined in November 2010: http://ji.unfccc.int/UserManagement/FileStorage/1350OYZI987RHD4USXMKJT2EAB6CGF The project implementation has been checked according to the information provided in the PDD already during the 1st verification.	O.K.	O.K.
93	What is the status of operation of the project during the monitoring period?	Additional biogas extraction system in Lapes landfill fields II-III, booster station and additional CHP plants with capacities of 1,6MWe and 1,57 MWth has started to operate on 23/12/2011. This revision to project design was assessed by audit team as per PROCEDURES REGARDING CHANGES DURING PROJECT IMPLEMENTATION (Version 01). As results of this review CL1 was issued:	CL1	O.K.

<table>
<tr><th>DVM Paragraph</th><th>Check Item</th><th>Initial finding</th><th>Draft Conclusion</th><th>Final Conclusion</th></tr>
<tr><td></td><td></td><td>CL1: Please clarify why new CHP plants with capacities of 1,6MWe and 1,57 MWth was installed in addition to existing CHP plants.</td><td></td><td></td></tr>
<tr><td colspan="5">Compliance with monitoring plan</td></tr>
<tr><td>94</td><td>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?</td><td>The Excel based calculation tool is developed for monitoring. This calculation tool and data sources used for monitoring were analyzed and compared with the requirements of the monitoring plan. The results of this analysis are described in the table below:

<table>
<tr><td>Requirement</td><td>Results</td></tr>
<tr><td>Continuous direct measurements</td><td></td></tr>
<tr><td>Methane fraction in LFG, vol. %;</td><td>O.K.</td></tr>
<tr><td>Total amount of LFG captured, nm3</td><td>O.K.*</td></tr>
<tr><td>Amount of LFG to CHP plant, nm3</td><td>O.K.*</td></tr>
<tr><td>Amount of LFG flared, nm3</td><td>O.K.*</td></tr>
<tr><td>Flare temperature, ^{0}C</td><td>O.K.</td></tr>
<tr><td>Periodic direct measurements</td><td></td></tr>
<tr><td>Electric power produced, MWh</td><td>O.K.</td></tr>
<tr><td>Electric power consumed, MWh</td><td>O.K.</td></tr>
<tr><td>Heat generated, MWh</td><td>O.K.</td></tr>
<tr><td>Natural gas consumed, nm3</td><td>O.K.</td></tr>
<tr><td>Natural gas calorific value, kcal/nm3</td><td>O.K.</td></tr>
</table>

* Density ratio 0,00068 tCH4/m^{3}CH4 is used for calculations instead of 0,0007168 tCH4/m^{3}CH4 which is defined in the PDD, because the landfill gas meter uses 293.15 K (20 ^{0}C) temperature value to calculate the gas amount in m3 under normal conditions. This issue was clarified during the first verification (CL6).</td><td>O.K.</td><td>O.K.</td></tr>
<tr><td>95 (a)</td><td>For calculating the emission reductions or enhancements of net removals, were key factors, e.g. those listed in 23 (b) (i)-(vii) above, influencing the baseline emissions or net removals and the activity level of the project and the emissions or</td><td>Not applicable.</td><td>O.K.</td><td>O.K.</td></tr>
</table>

<table>
<tr><th>DVM Paragraph</th><th>Check Item</th><th>Initial finding</th><th>Draft Conclusion</th><th>Final Conclusion</th></tr>
<tr><td></td><td>removals as well as risks associated with the project taken into account, as appropriate?</td><td></td><td></td><td></td></tr>
<tr><td>95 (b)</td><td>Are data sources used for calculating emission reductions or enhancements of net removals clearly identified, reliable and transparent?</td><td>See section 94 above.</td><td>O.K.</td><td>O.K.</td></tr>
<tr><td>95 (c)</td><td>Are emission factors, including default emission factors, if used for calculating the emission reductions or enhancements of net removals, selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice?</td><td>All emission factors used are default values and are already defined in the PDD. The calculation tool was reviewed in order to check if these emission factors are used as defined in the PDD. The results of this analysis are described in the table below:
<table><tr><td colspan="3">Default emission factors</td></tr><tr><td></td><td>Value used</td><td>Results</td></tr><tr><td>Emission factor for heat generation</td><td>0,223 tCO2/MWh</td><td>O.K.</td></tr><tr><td>Emission factor for natural gas</td><td>56,1 tCO2/MWh</td><td>O.K.</td></tr><tr><td>Emission factor for electric power generation</td><td>0,611 tCO2/MWh</td><td>O.K.</td></tr></table></td><td>O.K.</td><td>O.K.</td></tr>
<tr><td>95 (d)</td><td>Is the calculation of emission reductions or enhancements of net removals based on conservative assumptions and the most plausible scenarios in a transparent manner?</td><td>Not applicable.</td><td>O.K.</td><td>O.K.</td></tr>
<tr><td colspan="5">Applicable to JI SSC projects only</td></tr>
<tr><td>96</td><td>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?</td><td>Not applicable.</td><td>O.K.</td><td>O.K.</td></tr>
<tr><td colspan="5">Applicable to bundled JI SSC projects only</td></tr>
<tr><td>97 (a)</td><td>Has the composition of the bundle not changed from that is stated in F-JI-SSCBUNDLE?</td><td>Not applicable.</td><td>O.K.</td><td>O.K.</td></tr>
</table>

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
97 (b)	If the determination was conducted on the basis of an overall monitoring plan, have the project participants submitted a common monitoring report?	Not applicable.	O.K.	O.K.
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?	Not applicable.	O.K.	O.K.
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?	Not applicable.	O.K.	O.K.
99 (b)	Does the proposed revision improve the accuracy and/or applicability of information collected compared to the original monitoring plan without changing conformity with the relevant rules and regulations for the establishment of monitoring plans?	Not applicable.	O.K.	O.K.
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 these procedures and initial data documents (financial invoices on electricity supplied and consumed, natural gas consumed, heat supplied, SCADA data on LFG extracted and flared) were verified. The input of these initial data to the Excel spreadsheet was verified, no mistakes or missing data were found. Excel spreadsheet formulas was reviewed and found in accordance with Monitoring plan.	O.K.	O.K.
101 (b)	Is the function of the monitoring equipment, including its calibration status, in order?	The results of the revised monitoring scheme and monitoring equipment calibration status are described in the table below: Measurement device, No | Validation/ | Validation/	O.K.	O.K.

DVM Paragraph	Check Item	Initial finding			Draft Conclusion	Final Conclusion
			calibration date	calibration validity date	ration status during the monitoring period (23/12/2011-31/12/2012)	
		Amount of LFG to CHP meter: (including flow meter CGR-01 G400 and calculation unit ST2L10P) No 340128 No LL19348 Note: was applicable for JI project monitoring from 23/12/2011 to 31/12/2011	2010.11.09	2012.11.09	O.K.	
		LFG composition analyser: AWITE No 443 Was applicable for project monitoring until 22/12/2011	2011.11.30	2012.11.31	O.K.	
		New LFG composition analyser SAS 1 No 4010.90 Was applicable for project monitoring from 23/12/2011 to 31/12/2011	2011.11.30	2012.05.30	O.K.	
		Amount of LFG flared (including flow meter CGR-01 G400and calculation unit CMK-02) No 340128 No 09807 Note: LFG was not flared during the monitoring period.	2010.04.14	2012.04.14	O.K.	
		Amount of natural gas: (including flow meter G-25 and calculation unit UNIGAZ PTZ) 20401155 11143 Note: was applicable until	2010.04.29 2010.04.29	2014.04.29 2012.04.28	O.K.	

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		2012.03.01, then natural gas was not used Generated and consumed electric power meter EPQS 121.09.04 in Domeikava Consumed electric power meter LZ M in Lapes No 478436 No 939150 — 2007.05.18 / 2011.09.08 — 2015.05.18 / 2019.09.08 Heat meter: SKM-1M-U1 (including flow detector, calculation unit, temperature detector) No 018768 No 028091 No 943A Note: was applicable for project monitoring until 22/12/2011 — 2010.06.17 — 2012.06.17 Heat meter: ULTRAFLOW (including flow detector, calculation unit, temperature detector) No 2011/3960324 Was applicable for project monitoring since 23/12/2011 — 2011.12.17 — 2013.12.17 All measurement equipment was calibrated/validated on time. Special maintenance requirements for gas analyser are fulfilled (half year change of filtering elements, condensate level control, working temperature conditions).	O.K.	O.K.
101 (c)	Are the evidence and records used for the monitoring maintained in a traceable manner?	The evidence and records are kept according to Procedure B1_Record Keeping. The retention period is defined during the crediting period and two years after (until 31/12/2014).	O.K.	O.K.
101 (d)	Is the data collection and management system for the project in accordance with the monitoring plan?	A monitoring management and quality assurance system has been developed and implemented efficiently, including necessary forms and procedures: Form A1a_Process Data Sheet (week)	O.K.	O.K.

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		Form A1b_Process Data Sheet (month) Form A2_Daily Check Form (LFG Plant) Form A3_Daily Check Form (CHP) Form A4_ Monthly QA Check Form Form A5_Calibration Log Sheet Procedure B1_Record Keeping Procedure B2_Data Transfer Procedure B3a_Daily Check for LFG Plant Procedure B3b_Daily Check for CHP Procedure B4_Calibration Records Procedure B5_Monthly QA Check. This management system is in accordance with the requirements of the monitoring plan section D.3.		
Verification regarding programs of activities (additional elements for assessment)				
102	Is any JPA that has not been added to the JI PoA not verified?	Not applicable.	O.K.	O.K.
103	Is the verification based on the monitoring reports of all JPAs to be verified?	Not applicable.	O.K.	O.K.
103	Does the verification ensure the accuracy and conservativeness of the emission reductions or enhancements of removals generated by each JPA?	Not applicable.	O.K.	O.K.
104	Does the monitoring period not overlap with previous monitoring periods?	Not applicable.	O.K.	O.K.
105	If the AIE learns of an erroneously included JPA, has the AIE informed the JISC of its findings in writing?	Not applicable.	O.K.	O.K.
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	Not applicable.	O.K.	O.K.

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	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?	Not applicable.	O.K.	O.K.
108	Has the AIE made site inspections of at least the square root of the number of total JPAs, rounded to the upper whole number? If the AIE makes no site inspections or fewer site inspections than the square root of the number of total JPAs, rounded to the upper whole number, then does the AIE provide a reasonable explanation and justification?	Not applicable.	O.K.	O.K.
109	Is the sampling plan available for submission to the secretariat for the JISC.s ex ante assessment? (Optional)	Not applicable.	O.K.	O.K.
110	If the AIE learns of a fraudulently included JPA, a fraudulently monitored JPA or an inflated number	Not applicable.	O.K.	O.K.

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	of emission reductions claimed in a JI PoA, has the AIE informed the JISC of the fraud in writing?			

Table 4 Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1	Summary of project participant response	Verification team conclusion
CL1: Please clarify why new CHP plants with capacities of 1,6MWe and 1,57 MWth have been installed in addition to existing CHP plants.	93	Monitoring report version 2 is amended with explanation: "Additional CHPs is installed due to low efficiency of existing cogeneration plant (35% electrical efficiency TEDOM, new one MWM advanced technology CHP plants with 42.5% efficiency). Another aim of increasing of CHP plant capacity is additional heat energy requirement from district heating network consumers".	Explanation is found reasonable, increased efficiency of the installed generating capacities do not alter initial determination opinion, taking into account that estimated emission reduction was not achieved during the crediting period (94,467 tCOe instead of estimated 152,358 tCO2). Hence CL1 is closed.