Industrie Service

Choose certainty.
Add value.

Verification Report

Periodic Verification of the Registered JI track 1 Project

Utilization of Sunflower Seeds Husk for Steam and Power Production at the Oil Extraction Plant OJSC «Kirovogradoliya»

ITL project ID: UA1000255

Monitoring period #2: 01-01-2011 to 31-12-2011

Report No. 600501029

25 June 2012

TÜV SÜD Industrie Service GmbH
Carbon Management Service

TÜV SÜD Industrie Service GmbH
Carbon Management Service
Westendstrasse 199 - 80686 Munich - GERMANY

Version 06 _ 08/02/2011

Industrie Service

Report No.	**Date of first issue**	**Version No.:**	**Revision date**
600501029	30-05-2012	04	25-06-2012
Subject:	Second Periodic Verification		
Executing Operational Unit:			
TÜV SÜD Industrie Service GmbH, Carbon Management Service Westendstrasse 199 - 80686 Munich, Federal Republic of Germany			
Project Participant (client):			
Public Joint Stock Company “Kirovogradoliya”, 30 Urozhaynaya str. 25013, Kirovograd, Ukraine			
Registration number / Project Title		UA1000255 / Utilization of Sunflower Seeds Husk for Steam and Power Production at the Oil Extraction Plant OJSC «Kirovogradoliya»	
Monitoring period:		01-01-2011 to 31-12-2011	
First Monitoring Report (version/date)		Version 1.0 / 15-03-2012	
Final Monitoring Report (version/date)		Version 3.0 / 12-06-2012	

Industrie Service

Summary:
The certification body "Climate and Energy" of TÜV SÜD Industrie Service GmbH has been ordered by Public Joint Stock Company "Kirovogradoliya" to carry out the second periodic verification of the registered JI Track-1 project "Utilization of Sunflower Seeds Husk for Steam and Power Production at the Oil Extraction Plant OJSC "Kirovogradoliya".
The verification is based on requirements of the UN Framework Convention on Climate Change (UNFCCC) and the host country specific requirements. In this context, the specific guidance from the Designated Focal Point (host country) in his responsibility for the approval of JI track 1 projects, relevant provisions set by the Marrakech Accords, the Kyoto Protocol and the JI-SC (Supervisory Committee) for JI Track-2 projects have been taken into consideration. The verification of this JI project has been performed by document review, interviews by e-mail and inspection on-site.
The verifier confirms that the project is implemented as planned and described in determined project design document. Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately. The monitoring system is in place and the project does generate GHG emission reductions. The verifier confirms also that the monitoring plan of the project activity is in accordance with the applied methodology. The management of Public Joint Stock Company "Kirovogradoliya" in cooperation with project consultant "Biomass-Carbon", LLC is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions on the basis set out within the final approved and registered PDD ver. 2 dated 12 February 2008 and the revised Monitoring Plan submitted as a part of the Monitoring Report version 3.0 of 12/06/2012.
The verifier can confirm that the GHG emission reduction for the whole monitoring period is calculated without material misstatements. Our opinion relates to the project's GHG emissions and resulting GHG emissions reductions reported and related to the valid project baseline and monitoring, and further associated documents. The emission reductions calculated for this period are in a reasonable range to the values indicated in the registered PDD.

Based on the information received and evaluated we confirm the following statement:
Reporting period: from 01-01-2011 to 31-12-2011

Verified emission in the above reporting period:

Baseline emissions:	43,777	t CO_2 equivalents
Project emissions:	5,944	t CO_2 equivalents
Leakage emissions:	0	t CO_2 equivalents
Emission reductions:	37,833	t CO_2 equivalents

Assessment Team Leader: Anna Peretykina **Verification Team Members:** Igor Kachan, Andrey Atyakshev **Technical expert:** Maxim Krivosheev	**Technical Reviewer:** Thomas Kleiser, Yutaka Yoshida **Certification Body responsible:** Thomas Kleiser

Industrie Service

Abbreviations

AIE	Accredited Independent Entity
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CMP	Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol
CO_2e	Carbon dioxide equivalent
CL	Clarification Request
DFP	Designated Focal Point
DVM	Determination and Verification Manual
EF	Emission Factor
EIA / EA	Environmental Impact Assessment / Environmental Assessment
ER	Emission Reduction
ERUs	Emission Reduction Unit(s)
FAR	Forward Action Request
GHG	Greenhouse Gas(s)
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
IRL	Information Reference List
JI	Joint Implementation
JISC	JI Supervisory Committee
KP	Kyoto Protocol
LoA	Letter of Approval
MP	Monitoring Plan
MR	Monitoring Report
N/A	Not applicable
PDD	Project Design Document
PP	Project Participant
TÜV SÜD	TÜV SÜD Industrie Service GmbH
UNFCCC	United Nations Framework Convention on Climate Change

Industrie Service

Main Documents (referred to in this report)

Methodology (name / version)	JI specific Consolidated methodology for electricity and heat generation from biomass residues" (hereafter ACM0006,	
Scope	1 - Energy industries (renewable - / non-renewable sources)	
Technical Area	1.1	
Registered PDD:	Version 2, date 12-01-2008	
Revised Monitoring Plan:	Annex 2 of the MR version 3.0, date 12-06-2012 Date of approval: with the present verification	
	Version	Date
Published Monitoring Report	01	15-03-2012
Revised Monitoring Report	3.0	12-06-2012
Project documentation links: UNFCCC: http://ji.unfccc.int/JIITLProject/DB/721YYVG1S3PMXJ8LT4BLAN5796NQEU/details Ukrainian Registry Carbon Units: http://www.carbonunitsregistry.gov.ua/en/publication/content/904.htm Netinform:http://www.netinform.de/KE/Wegweiser/Guide22.aspx?ID=8232&Ebene1_ID=50&Ebene2_ID=3141&mode=5		

Table of Contents **Page**

1 INTRODUCTION

1.1 Objective

.PJSC “Kirovogradoliya” has commissioned an independent verification by TÜV SÜD Industrie Service GmbH (TÜV SÜD) of its registered JI track-1 project: “Utilization of Sunflower Seeds Husk for Steam and Power Production at the Oil Extraction Plant OJSC “Kirovogradoliya”.

Verification is the periodic independent review and ex-post determination by the Accredited Independent Entity (AIE) of the monitored reductions in GHG emissions during the defined verification period.

Periodic Verification:

The objective of the periodic verification is to verify that actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan for the respective period. Furthermore, the periodic verification evaluates the GHG emission reduction data and expresses a conclusion with a high, but not absolute, level of assurance about whether the reported GHG emission reduction data is free of material misstatements and verifies that the reported GHG emission data is sufficiently supported by evidence, i.e. monitoring records.

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

The objective of the verification work is to ensure that the project activity is assessed against all applicable JI Track-1 requirements in the host country as specified by the Designated Focal Point (DFP) for JI project implementation in Ukraine. The JI requirements as reference include also the JI modalities and procedures and subsequent decisions by the COP/MOP and documents released by the JI-SC and available on the UNFCCC JI website http://ji.unfccc.int/index.html.

The objective of the verification work is to ensure that the project activity complies with the requirements as specified in the appendix B of the JI guidelines on the aforementioned UNFCCC JI website http://unfccc.int/resource/docs/2005/cmp1/eng/08a02.pdf#page=2. These guidelines are considered valid for JI track-2 as also for JI track-1. According to this assessment TÜV SÜD shall:

- Ensure that the project activity has been implemented and operated as per the registered PDD and that all physical features (technology, project equipment, monitoring and metering equipment) of the project are in place;
- Ensure that the published MR and other supporting documents provided are complete and verifiable and in accordance with applicable JI Track-1 requirements in the host country;
- Ensure that the actual monitoring systems and procedures comply with the monitoring systems and procedures described in the monitoring plan and the applicable approved methodology;
- Evaluate the data recorded and stored as per the methodology of approved PDD.
- Evaluate the GHG emission reduction data and express a conclusion about whether the reported GHG emission reduction data is verifiable and sufficiently supported by evidence, i.e. monitoring records.

1.2 Scope

Verification scope is defined as an independent and objective review and ex-post determination by the AIE of the monitored reductions in GHG emissions. The verification is based on the submitted Monitoring Report and the registered Project Design Documents and revised Monitoring Plan.

These documents are reviewed against the requirements of the Kyoto Protocol, the JI Procedures and related rules and guidance. Based on the requirements in the DVM, TÜV SÜD has applied a rule-based approach for the verification of the project. The principles of accuracy, completeness, relevance, reliability and credibility were combined with a conservative approach to establish a traceable and transparent verification opinion.

The verification considers both quantitative and qualitative information on emission reductions. The verification is not meant to provide any consultancy towards the client. However, stated requests for clarifications and/or corrective actions as well as so-called forward action requests may provide input for improvement of the monitoring activities.

1.3 GHG Project Description

Project activity:	"Utilization of Sunflower Seeds Husk for Steam and Power Production at the Oil Extraction Plant OJSC "Kirovogradoliya".
UNFCCC registration number:	ITL project ID UA1000255
Project Participants:	Public Joint Stock Company "Kirovogradoliya" (Ukraine)
	INERCO TRADE S.A. (Switzerland)
Location of the project:	Kirovograd city of the Kirovograd Region of Ukraine
Date of registration:	01-04-2011 (Order No.48 of National Environmental Investment Agency of Ukraine)
Starting date of the crediting period:	01-04-2011 (PDD ver. 2 dated 12-02-2008)

The main objective of the project is the reconstruction of energy supply system at Public Joint Stock Company "Kirovogradoliya". The project envisages the construction of the combined heat and power plant fuelled by solid biomass - sunflower seeds husk. New CHP plant consists of three steam boilers and steam turbine. This allows to utilize the sunflower seeds husk and at the same time to cover the heat and power demand of the enterprise. The sunflower seeds husk is used as the main fuel, natural gas is used as the reserve fuel. The project results in considerable decreasing of fossil fuels using and purchasing of electric power from the grid as well as avoidance of disposal of the sunflower seeds husk to landfill.

2 METHODOLOGY

2.1 Verification Process

The verification process is based on the approach depicted in JI guidelines and, in particular, refer to the Guidance on Criteria for baseline setting and monitoring, chapter C. – Guidance on monitoring. Accordingly relevant requirements as set by the JI-SC for JI track-2 are applied for JI Track-1 as long as there are no further host country requirements existing (and indicated in the national regulations and procedures) specifically for JI track-1 projects. Following the good monitoring practices and its reporting the approved Joint Implementation Determination and Verification Manual (DVM) was also taken into consideration.

Standard auditing techniques have been adopted. The means of verification for the fulfilment of the requirements and reporting are as per the DVM. Thus, compliance with JI relevant guidance is ensured.

The work starts with a contract review and the appointment of the TÜV SÜD assessment team covering the technical scope(s) and area(s) as well as relevant host country experience for evaluating of this JI project activity. The principles of consistency and transparency, impartiality, independency and safeguarding against conflicts of interest and confidentiality were considered by the TÜV SÜD Certification Body (CB) and the management of the department before accepting the verification contract.

Once the monitoring report is published on TÜV SÜD publication platform on the Internet “netinform” (as it is the matter of JI Track-1 project), the TÜV SÜD assessment team has carried out a desk review, on-site inspection, follow-up actions, resolution of issues identified and prepared a verification report. The verification report and other supporting documents then undergo an internal quality control by the TÜV SÜD Certification Body before its submission to the DFP (host country) for the final approval.

In order to ensure transparency, assumptions are clearly and explicitly stated, audit evidences and further background material are clearly referenced in Annex 2 of this report. Project and methodology-specific checklists and a customised protocol have been developed for the project. The protocol shows criteria (requirements) in a transparent manner, the discussion of each criterion by the assessment team and results of the subsequent verification.

The verification protocol (Annex 1) 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 proved and the conclusion provided by the verifying team.

The findings are the essential part of this verification report, which are summarized in Annex 1 of the verification protocol.

2.2 Verification Team

According to the technical scopes and experiences in the sectoral or national business environment TÜV SÜD has composed a project team in accordance with the appointment rules of the TÜV SÜD certification body “climate and energy”. The composition of an assessment team has to be approved by the Certification Body (CB) ensuring that the required skills are covered by the team. The TÜV SÜD CB operates four qualification levels for team members that are assigned by formal appointment rules:

- Assessment Team Leader (ATL);
- Verifier (V);
- Verifier Trainee (T);

- Technical Experts (TE).

It is required that the sectoral scope and technical area - both are linked to the methodology - has to be covered by the assessment team. The verification team was consisting of the following members:

Name	Qualification	Coverage of scope	Coverage of technical area	Host country experience
Anna Peretykina	ATL, V	☐	☐	☑
Igor Kachan	V	☐	☐	☑
Andrey Atyakshev	V	☐	☐	☑
Maxim Krivosheev	TE	☑	☑	☑

Anna Peretykina (M.Sc., M.Eng.) has an academic background in environmental sciences and engineering. In her position she is responsible for validation and verification of CDM/JI projects as well as for the project coordination within the Scope Management for Industrial Gases worldwide. Being a GHG auditor (Determiner/Validator/Verifier) based in the TÜV SÜD Hamburg office, she has received an extensive experience in the CDM/JI process and participated in diverse project assessments. In this project she functioned as an assessment team leader and was in charge for the general project management.

Igor Kachan is employee of TÜV SÜD Ukraine. He has Ph.D. in chemistry and he was appointed as GHG auditor (Determiner/Verifier) of the Carbon Management Service Department of TÜD SÜD Industry Service GmbH. He worked as a lecturer (for 5 years) and research engineer/scientist (for 5 years). He had successfully completed IRCA registered Lead Auditor Training Courses: Environmental Management Systems and Quality Management Systems. He was involved in the determination/verification of more than thirty JI projects pertaining to various sectoral scopes: 1, 2, 3, 4, 5, 8, 9, 13 and 14.

Andrey Atyakshev is a mechanical engineer in the field of metal forming and expert for metallurgical works and engineering plants, mechanical and chemical testing for metal production. Being GHG determiner/verifier for CDM and JI projects, he has already been involved in several of CDM and JI activities with a special focus on industrial projects.

Maxim Krivosheev is the technical experts of TÜV SÜD Ukraine (scope 1, technical area 1.1). He is a thermal power engineer. He has Master's degree in Heat and Power Engineering. He is Member of Russian/Ukraine Association of Engineers for Heating, Ventilation, Air-Conditioning, Heat Supply and Building Thermal Physics. Key skills and experience: heat-and-power engineering, HVAC engineering, thermal physics, building engineering systems surveys, witnessing commissioning, construction supervision, power generation plants designing (including cogeneration power stations).

Technical reviewers:

- **Thomas Kleiser, Yutaka Yoshida**

2.3 Review of Documents

The monitoring report submitted by the Client and additional background documents related to the project performance have been reviewed.

The published Monitoring Report was assessed based on the registered PDD, the applied methodology and monitoring plan. These documents are listed in the presented section “Main Documents (referred to in this report)”, page 4. The main purpose of the assessment conducted was to verify the completeness and correctness of the data and the information presented in the monitoring report.

Monitoring Plan

Even though the Monitoring Plan has already been revised for the first monitoring period, several adjustments were necessary also in the second monitoring period. Thus a revised MP (included as the separate Annex to the MR) has been submitted to the audit team for review at this verification. The main issues of this MP revision are described in detail in chapter 3.3 of this report. The revisions of the Monitoring Plan were assessed with special awareness. Thus it is confirmed that they enhance the level of accuracy and completeness of the monitoring plan.

Monitoring Report

The compliance check of the monitoring report with respect to the revised monitoring plan and the applied JI specific approach was carried out. Particular attention was paid to the frequency of measurements, the quality of metering equipment including calibration requirements, and the quality assurance and quality control procedures. In addition, the evaluation of data management and the quality assurance and quality control system was carried out in the context of their influence on the generation and reporting of emission reductions.

A complete list of all documents reviewed is available in annex 2 of this report.

2.4 On-site Assessment and follow-up Interviews

On 24-03-2012 TÜV SÜD performed a physical site inspection and on-site interviews with project stakeholders to:

- confirm the implementation and operation of the project,
- review the data flow for generating, aggregating and reporting the monitoring parameters,
- confirm the correct implementation of procedures for operations and data collection,
- cross-check the information provided in the MR documentation with other sources,
- check the monitoring equipment against the requirements of the PDD and the approved methodology, including calibrations, maintenance, etc.,
- review the calculations and assumptions used to obtain the GHG data and ER,
- indentify if the quality control and quality assurance procedures are in place to prevent or correct errors or omissions in the reported parameters.

A list of the persons interviewed during this verification activity is included in annex 2.

2.5 Quality of Evidence to Determine Emission Reductions

Among several evidence items submitted, the following relevant and reliable evidence material have been used by the audit team during the verification process:

- Internally approved methodologies of key indicators monitoring IRL #23, 26-28, 30
- Consolidated logs from internal accounting system IRL #1-8, 13, 17, 33
- Software tool with the aggregated original data IRL #25, 45-48
- Calibration certificates, operating instructions and maintenance list IRL#51, 52, 57-66, 78-81

Sufficient evidence covering the full verification period in the required frequency is available to validate the figures stated in the final MR. The source of the evidence is discussed in the Annex 2 of this report. Specific cross-checks have been done in cases that further sources were available. The monitoring report's figures were checked by the audit team against the raw data. The data collection system meets the requirements of the monitoring plan as per PDD and according to the revised Monitoring Plan.

2.6 Resolution of Clarification and Corrective and Forward Action Requests

The objective of this phase of the verification process is to resolve any outstanding issues which require clarification for TÜV SÜD's positive conclusion of the achieved GHG emission reduction. The findings raised as Forward Action Requests (FARs) (if any) indicated in previous reports (validation/verification) were discussed during this phase and, issues raised in the FARs were resolved, during communications between the PP and TÜV SÜD.

Concerns raised in the desk review, the on-site audit assessments and the follow up interviews and the responses provided for the raised concerns are documented in Annex 1 (verification protocol) to guarantee the transparency of the verification process.

A Corrective Action Request is raised where TÜV SÜD identifies:

- non-conformities in monitoring and/or reporting with the monitoring plan and/or methodology;
- that the evidence provided is not sufficient to prove conformity;
- mistakes in assumptions, data or calculations that impair the ER;
- FARs stated during validation that are not solved until the on-site visit.

A Clarification Request is raised where TÜV SÜD does not have enough information or the information is not clear in order to confirm a statement or data.

A Forward Action Request is raised where TÜV SÜD identifies that monitoring and/or reporting require special attention or adjustments for the next verification period.

Information or clarifications provided as a response to a CAR, CL or FAR could also lead to a new request.

2.7 Internal Quality Control

As a final step of verification, the final documentation including the verification report and annexes have to undergo an internal quality control by the Certification Body (CB) “climate and energy”, i.e. each report has to be finally approved either by the Head of the CB or the Deputy (a technical reviewer can be used). In case one of these two persons is part of the assessment team, the approval can only be given by the person who is not a part of the assessment team.

After the documents have been approved satisfactorily, then verification report will be submitted to the DFP (host country) for the final approval and with the request for issuance along with the other relevant documents.

3 VERIFICATION RESULTS

In the following sections, the results of the verification are stated. The verification results relate to the project performance as documented and described in the final PDD and Monitoring Report dated 12-06-2012, version 3.0 and revised Monitoring Plan (included in the final MR dated 12-06-2012, version 3.0). The verification findings for each verification subject are presented below.

3.1 FARs from Validation / Previous Verification

No FAR has been presented, neither in the determination report nor in the previous verification report.

3.2 Project Implementation in accordance with the registered Project Design Document

The verification team confirms, through the visual inspection that all physical features of the proposed JI project activity including data collecting systems and storage have been implemented in accordance with the registered PDD. The project activity is completely operational and the same has been confirmed on-site. No additional equipment has been commissioned either before or during the monitoring period.

During the considered monitoring period the name of project participant from the Host Country has been changed from OJSC “Kirovogradoliya” to PJSC “Kirovogradoliya” that was proved by the documented evidence submitted to the verification team (IRL#56).

By comparing the actual ER claimed in this monitoring period with the estimate in the registered PDD the actual result is lower than what is stated in the PDD. The difference of emission reductions calculated in PDD and achieved during the present monitoring period is occurred due to several reasons explained and confirmed by the PPs:

- The commissioning date of the project equipment postponed in comparison with those envisaged in the PDD. This affected the total quantity of husk avoided from landfilling. The exact quantitative analysis is provided in the chapter 1.1 of the final MR version 3.0. Due to this some amount of ER has been lost which is in compliance with the specific methodology of methane emissions avoidance calculation (it involves cumulative accounting of emissions);
- The first revision of monitoring plan during the first verification for the period 27/04/2009-31/12/2010 involved the revision of formulas for heat and electricity generation monitoring. The actual production practice and data monitoring shows that the amount of heat and electricity generated during the present monitoring period decreased in comparison with the values estimated in the PDD.

All the reasons are explained in the final MR. None of these reasons affects the additionality, scale or applicability of the project; hence TÜV SÜD can accept and confirm the clarification provided by the PPs.

3.3 Compliance of the Monitoring Plan with the Monitoring Methodology

Although the Monitoring Plan has already been revised for the first monitoring period, a number of adjustments were proposed by the PPs in the second monitoring period. Thus a revised MP has been submitted to the audit team for review within the present verification. The actual revisions of the monitoring plan compared to the revised monitoring plan (included in the Monitoring Report for the first monitoring period) publicly available at UNFCCC web-site:

http://ji.unfccc.int/JIITLProject/DB/721YYVG1S3PMXJ8LT4BLAN5796NQEU/details

considered in this revised MP during the second monitoring period are:

- Data unit of value or $FF_{project\ site,i,y}$ were changed to nm^3 as the actually existing monitoring practice envisages continuously measurement of parameter on the gas metering point.
- The source of data for the parameter "Total quantity of sunflower seeds husk, which is sold to outside consumers" was changed. The automobile scales are to be used for monitoring. The flow scheme of data is presented and responsible person is indicated.
- The methodology of Q_y determination on the basis of primary direct measured heat flows Q_5-Q_{18} was incorporated in monitoring plan. The reason for this revision is the installation of the heat meters for Q_5-Q_{18} direct measurements during the second monitoring period. Thus the respective monitored variables were added into the Table D.1.1.3 of the MP as well as the heat balance methodological calculation formula has been added in calculation procedure (section D.1.1.3 of the MP).
- Directly measurement of the parameter "total quantity of oil produced at the enterprise" by the Oil meter "Optimass" with monthly aggregation is envisaged in the MP. This method is more reliable and accurate in comparison with the estimation according to balance reports (original MP).
- The units for natural gas net calorific value were changed to "kcal/nm^3" which fully corresponds to the primary source of data – certificates of natural gas quality. The responsibility for data acquisition was stated in the MP.
- The units for net calorific value of wet sunflower seeds husk value were changed to "MJ/kg" which fully corresponds to the primary source of data – certificates provided by external authorized laboratory. The responsibility and procedure for data sampling was stated in the MP. The algorithm for calculation of the parameter has been described in the MP to ensure transparency and accuracy.
- Only one unified emission factor for natural gas ($EF_{CO2,NG}$) was expected to be monitored for calculations of emissions from natural gas burning. The old MP contained two different symbols for one parameter. This was eliminated in the current changes to the MP.
- The units for EG_y parameter were changed to kWh" which fully corresponds to the real practice of data monitoring at the enterprise.
- The values of the constants used for the GHG emission from husk decomposition were included in the monitoring plan to ensure transparency and compliance with the determined PDD.
- The parameters W_x (Quantity of sunflower seeds husk avoided from landfilling) and W (Moisture of sunflower seeds husk is used in calculation model) were excluded from the MP. W_x completely duplicate the parameter "Husk used by boilers" $BF_{k,v}$. W was only needed for W_x calculation.

- The management structure and key responsibilities for the project operation and data acquisition are described in separate Section D.3 of the corrected MP. The Table D.3.1 “Key responsibilities for monitoring data collection at the enterprise” and the Figure D.3.1 “Data flow scheme of all monitored parameters” have been added to reflect the actual responsibilities distribution observed by the verification team onsite and established by the approved internal order.
- The monitoring equipment scheme in the MP was adjusted to be in compliance with the actual technical scheme of measurements established at the enterprise and observed by the verification team during onsite visit.
- The formula used for GHG emission reduction calculation was changed to $ER_y = BE_y - PE_y - L_y$ to comply with ERUs calculation model. The essence of formula is the same as in the determined PDD. The emissions related to baseline have only been combined in baseline emissions BE_y to make final GHG emission reduction calculation formula more conventional, standard and consistent.

In accordance with paragraph 99 of the DVM the project participants provided the appropriate justification for the proposed revisions in the Annex 3 of the MR version 3.0. Based on the assessment of the PP’s justifications, onsite interviews and respective evidences, the verification which can confirm that revised MP improves the accuracy and 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.

The revisions of the Monitoring Plan were assessed with special awareness. Thus it is confirmed that they enhance the level of accuracy and completeness of the monitoring plan as required by the DVM. The revised Monitoring Plan is submitted by PPs to DFP for final approval together with the Monitoring Report of this monitoring period.

3.4 Compliance of the Monitoring with the Monitoring Plan

The monitoring has been carried out in accordance with the monitoring plan contained in the revised monitoring plan. All parameters were monitored and determined as per the revised Monitoring Plan.

A comprehensive list of each parameter required by the revised monitoring plan is provided in Annex 2 to the MR version 3.0. All parameters are described in the final MR in details including source of data, verification of data, possible crosschecks, calibration of instruments etc. All findings related to the monitoring methodology and monitored parameters’ quality are discussed in the Annex 1 of the present verification report.

3.5 Assessment of Data and Calculation of Greenhouse Gas Emission Reductions

All data has been available and all the parameters have been monitored in accordance with the revised monitoring plan. The reported data have been cross-checked against other sources available as explained in the Annex 1.

The verification team confirms that the methods and formulae used to obtain the baseline, project and leakage emissions are appropriate. The same has been done in accordance with the methods and formulae described in the registered monitoring plan, revised monitoring plan and applicable methodology included in the determined PDD.

The verification team confirms that the monitoring report includes all parameters and the monitored data at the intervals required by the PDD and revised monitoring plan.

The verifier confirms that all the emission factors and default values (ex-ante values from PDD) have been correctly justified. All the emission factors and default values are explicitly mentioned in the monitoring report

4 SUMMARY OF FINDINGS

The verification team can confirm that the published MR and related documents are complete and verifiable in accordance with the revised Monitoring Plan and determined PDD. All the findings raised by the verification team together with the means of verification, resulting changes in the MR or related documents, responses by the PPs and the conclusion of the assessment team are identified in Annex 1 to the present report.
The means of verification and resulting changes in the MR or related documents are identified in the following table:

CAR 1: The actual monitoring scheme does not correspond to the scheme included in the MR version 1.0, in particular: - electrical power metering does not correspond to the scheme included in the MR ver. 1.0 - the symbol of flow meter (FE) of heat meter unit No5 is absent in the scheme - the pressure measuring sensor is shown instead of flow meter for the heat meter unit No17. It was observed onsite that installed at Kirovogradoliya turbine is the turbine with counter pressure. However, as per MR that the turbine type is condensing one. This inconsistency shall be corrected.
CAR 1, means of verification
The verifier team has checked the revised MR version 2.0 with special focus on updates in regard to the inconsistencies mentioned in the Request above. The monitoring scheme has been updated according to the real monitoring practice observed by the assessment team during the on-site inspection. The turbine's name is corrected in the MR accordingly.
CAR 1, changes in the MR or related documents
Cf. revised MR version 2.0.

CAR 2: There are two contradictory statements in the section 1.1 of the MR version 1.0: - All equipment installed during the project activity on the enterprise has been put into operation according to PDD version 2 (12 February 2008) - Project starting date according to the PDD of the JI project was December 2007. However, due to the logistical and financial problems at the company the official project start was delayed till the 27th of April, 2009. There is no information regarding the status of project realization and measures implemented in the framework of the project (including special cases, maintenance time) during the 2nd monitoring period. Corresponding correction are to be made in the revised MR.
CAR 2, means of verification
The verifier team has reviewed the revised MR version 2.0 with special focus on updates done in regard to those contradictory statements mentioned above. The information regarding the status of project realization and measures implemented in the framework of the project during the monitoring period (stated in the Table 1.1 of MR version 2.0) is in compliance with the Certificate about nonworking days of the enterprise and Acceptance certificate received onsite.
CAR 2, changes in the MR or related documents
Cf. revised MR version 2.0: mentioned inconformities were removed and appropriate expressions have been corrected. Information on measures and key events at the enterprise

during monitoring period have been added in separate Table 1.1 of the MR.

CAR 3: The PP from the Host country was changed. It is requested to provide a corresponding explanation and documentary evidence regarding change of the company name. The MR version 01 contains both names Public Joint Stock Company "Kirovogradoliya" and Open Joint Stock Company "Kirovogradoliya". This must be adjusted in accordance with the actual situation observed on-site. Moreover, the PP from the Appendix 1 countries is not indicated in the MR. Thus, MR shall be corrected accordingly
CAR 3, means of verification
The verifier team has reviewed the revised MR version 2.0 with and the document, which confirms the renaming of OJSC into PJSC. The old name OJSC "Kirovogradoliya" is only mentioned in determined MP and the documents tittles approved during the previous monitoring period. The full name of the PP from the Appendix 1 countries, i.e. INERCO TRADE S.A. is indicated in the revised final MR, which is in line with LoA issued by the DFP of Switzerland, link: http://ji.unfccc.int/JIITLProject/DB/721YYVG1S3PMXJ8LT4BLAN5796NQEU/details
CAR 3, changes in the MR or related documents
Cf. revised MR version 2.0: The name of PP is presented correctly - both names OJSC "Kirovogradoliya" and PJSC "Kirovogradoliya" are present in the revised MR to prevent changes in registered JI project unique name and approved internal methodologies when old PP name has been valid. The Appendix 1 Party and all other Parties involved in JI project activity is stated in Section 2 of the revised MR.

CAR 4: It is stated in the MR version 1.0 that the specialists of OJSC "Kirovogradoliya" will prepare all necessary reports for GHG emission reduction calculation and verification performance and the specialists of "Biomass-Carbon", LLC will review prepared reports. It is necessary to clarify who is the appointed project manager from Kirovogradoliya responsible for preparation reports as per determined PDD.
CAR 4, means of verification
The verifier team has reviewed the revised MR version 2.0 with special focus on the reporting of the key responsibilities for data collection, preparation, storage, keeping, archiving etc at the plant as well as PP response to this Request. The management structure was incorporated in the Revised MP (see Figure D.3.1 of the ANNEX 2 to the MR version 2.0). Data flow scheme (distribution of responsibilities) is also confirmed by the internal order approved at the enterprise, which was available for review dung the on-site mission. The proposed revision is in line with *Determination and verification manual version 01* as the proposed revision improves the accuracy and applicability of information collected compared to the previous revision of the MP (determined by Bureau Veritas Certification Holding SAS in the framework of verification for the period 27/04/2009 – 31/12/2010, available on the web-site http://ji.unfccc.int/JIITLProject/DB/721YYVG1S3PMXJ8LT4BLAN5796NQEU/details).
CAR 4, changes in the MR or related documents
Cf. revised MR version 2.0, in particular Figure D.3.1 of the ANNEX 2 to MR: corresponding information is provided there in a clear and transparent manner now.

CAR 5: The Excel calculation model, as well as MR, contains invalid values of the coefficients of CO_2 emission for the Ukrainian grid (used for baseline and project emission calculation). MR

and ERUs calculation shall be corrected accordingly. The evidence regarding the class of electricity consumption is to be provided to the assessment team.
CAR 5, means of verification
The verifier team has reviewed the revised MR version 2.0 and provided SEIA Order #75 with special focus on the applied values of coefficients of CO_2 emission for the Ukrainian grid. The assessment team could confirm that the correct values were considered in the ERUs calculations. The revisions of the MP are appropriately justified by the PPs and described in the ANNEX 3 to the MR version 2.0 “Changes to the monitoring plan”.
CAR 5, changes in the MR or related documents
Cf. revised MR version 2.0, and Excel calculation model version 2.0 as well as updates to the Annex 3 (MR). PP has clarified: for baseline *production* grid EF is used and for project – *consumption* grid EF is used, thus, making a difference between two grid EFs. The electricity consumption class, which is determined according to the NERC Order # 1052 dated 13/08/98 (http://www.cogeneration.com.ua/ru/analytics/legislative-regulation/nkre/N-1052__13-08-98/) (official electronic form is also provided to verification team). According to the p. 3.2 of the mentioned Order the project owner is considered as 1st class electricity consumption enterprise (determined on the basis of voltage value of 35 kV at the electricity selling “entrance points” (buses) of enterprise). The grid emission factor for the 1st class of electricity consumption has been chosen.

CAR 6: The applied values of the following parameters: - Fraction of the methane captured at the landfill and flared, combusted or used in another manner - Decay rate for the sunflower seeds husk - Methane correction factor - Sunflower seeds husk fraction of degradable organic carbon (by weight) - Model correction factor - Fraction of methane in the landfill gas - Fraction of degradable organic carbon that can decompose - Quantity of sunflower seeds husk avoided to landfilling during year x. are missing in the MR version 1.0 as well in the Excel calculation model. Thus, the reporting does not comply with the determined changes to the MP. This shall be clarified and MR shall be corrected in order to comply with the MP.
CAR 6, means of verification
The verifier team has reviewed the revised MR version 2.0 and an Excel calculation model version 2.0 with special focus on the values for all mentioned parameters mention in the Request. GHG emissions calculation model was provided to the verification team for review in a separate excel file “HUSK-annual”. All the applied values were checked against the determined PDD and determined MP and considered as valid.
CAR 6, changes in the MR or related documents
Cf. revised MR version 2.0, and Excel calculation model version 2.0: in particular, appropriate constant values have been added to the MR in Section D.1.1.4. Additionally all constant values used in landfill model have been reflected in ER spreadsheets of Excel file.

CAR 7: The information regarding the information data flow from the raw data to monthly totals

(including reading and recording frequency) for all measured parameter is not provided in the MR version 1.0. The cross-references to the monitoring scheme (monitoring points, including serial number, manufacturer model #) shall be presented to ensure transparency
CAR 7, means of verification
The verifier team has reviewed the revised MR version 2.0 with special focus on the reporting of data flow from the raw data to monthly totals for the monitored parameters. Requested information was added to the MR and incorporated in the Revised Monitoring plan (see Figure D.3.1 of the ANNEX 2 to the MR version 2.0). Refer to section 3.3 of the current verification report for details of the determination opinion of the assessment team regarding the revisions of the MP. The cross-references to the monitoring scheme (monitoring points, including serial number, manufacturer model #) were correctly included in the MR version 2.0. The serial number, manufacturer model number, type, accuracy rate and information regarding equipment calibration were corrected in accordance with equipment passports and calibration certificates, which were provided to the verification team.
CAR 7, changes in the MR or related documents
Cf. revised MR version 2.0, Annex 2: in particular, Section D.3 of MP “Data flow scheme”. The cross references to the monitoring scheme for all measured parameters is provided in Table 5.1. Factory numbers and parameters of measurement instruments are presented in Table 5.1. Other specific parameters, which have not been included in text of monitoring report, are available at passports of equipment.

CAR 8: The gas flow meter is to be used as per the MP (MR version 1.0). However, the set of sensors (pressure, temperature and flow) is actually used for this purpose. The clarification is requested. Moreover, tables 3.1 and 5.1 must be adjusted accordingly to reflect the measurement range and uncertainty level for each sensor. The calibration certificates are to be submitted to the verification team for review.
CAR 8, means of verification
The verifier team has reviewed the revised MR version 2.0 as well as evidences about natural gas accounting point calibration. All equipment used for natural gas volume monitoring was indicated in the Table 5.1. The issue is closed based on due amendments made in the MR and documentary evidenced provided to the auditors.
CAR 8, changes in the MR or related documents
Cf. revised MR version 2.0: in particular, Table 3.1 which has been united with Table 5.1 now, all necessary information on measurement range and accuracy is indicated, too.

CAR 9: The statement in the MR version 1.0: “Storage period of the data in electronic form is limited with three months, in paper form - unlimited.” is not applicable to the monitoring of the gas consumption and shall be adjusted to reflect the actual situation (section 3.3 of the MR version 1.0).
CAR 9, means of verification
The verifier team has reviewed the revised MR version 2.0 as well as approved Oder about monitored data storage: The item “3.3. Aggregation and processing of measured values” was updated to be in line with the MP and the actual situation observed during the on-site visit.
CAR 9, changes in the MR or related documents

Cf. revised MR version 2.0: All monitoring parameters are to be kept for 2 years after the last transfer of ERUs for the JI project. The appropriate adjustments have been introduced into the revised MR.

CAR 10: The parameter "Total quantity of sunflower seeds, which is sold to outside consumers" is monitored by using the automobile scales. The statement in the section D.1.5. of the MP (MR version 1.0) is not in compliance with the actual situation. Correction/clarification is requested.
CAR 10, means of verification
The verifier team has reviewed the revised MR version 2.0: in particular, table 5.1 was updated to contain the automobile scales as well as information regarding its calibration. The data stated in the MR were evidenced by passports, calibration certificate and raw data sample in form of bills. The changes regarding parameter "Total quantity of sunflower seeds husk, which is sold to outside consumers" monitoring were made in the MP. The respective justification was provided in the ANNEX 3 to the MR version 2.0 "Changes to the monitoring plan". Refer to section 3.3 of the current verification report for details of the determination opinion of the assessment team regarding the revisions of the MP.
CAR 10, changes in the MR or related documents
Cf. revised MR version 2.0: The appropriate corrections have been made in revised MR. The automobile scales has been added in the list of monitoring equipment.

CAR 11: The information regarding the raw data recording and transfer for the parameter "total quantity of sunflower seeds, which is sold to outside consumers" is not provided in the MR version 1.0.
CAR 11, means of verification
The verifier team has reviewed the revised MR version 2.0: The information regarding the data flow for the parameter "total quantity of sunflower seeds, which is sold to outside consumers" was added to the revised MR and incorporated in the Revised MP (see Figure D.3.1 of the ANNEX 2 to the MR version 2.0). Refer to section 3.3 of the current verification report for details of the determination opinion of the assessment team regarding the revisions of the MP.
CAR 11, changes in the MR or related documents
Cf. revised MR version 2.0: in particular, refer to the end of Section D.1.1.2 of MP - the description of recording and transfer of raw data is added there; and Section D.3 - the information of data flow is included in the data flow scheme.

CAR 12: The data for the parameter "total quantity of sunflower seeds, which is sold to outside consumers" within the monitoring period is to be provided to the verification team and included to the MR.
CAR 12, means of verification
The verifier team has reviewed the revised MR version 3.0 vs. the raw data sample in form of bills of registered transport vehicles. Inconsistency between the MR, ERUs calculation model

and raw data was eliminated in the final revised version of ERUs calculation file and MR. The issue was closed in the repeated (2nd loop) request for correction.
CAR 12, changes in the MR or related documents
Cf. revised MR version 3.0, and revised ERUs calculation version 3.0: respective values are corrected according to the value provided in raw data sample transport bill for November 2011.

CAR 13: The current version of the calculation tool Excel calculation model does not contain the date for the parameter "Total quantity of sunflower seeds, which is sold to outside consumers". The calculation model must be corrected. The data are to be included.
CAR 13, means of verification
The verifier team has reviewed the revised MR version 3.0 and ERUs calculations version 3.0. also by comparing the values reported in the bills of registered transport vehicles (in particular, from November 2011): Excel calculation model was corrected to be in line with the MP. Inconsistency between the MR, ERUs calculation model and raw data was eliminated. The issue was closed in the repeated (2nd loop) request for correction.
CAR 13, changes in the MR or related documents
Cf. revised MR version 3.0, and revised ERUs calculation model version 3.0: The requested data and other necessary intermediate data have been added to the calculation tool. Data for November 2011 has been corrected in Excel calculation and MR in accordance with the value available in "bill of registered transport vehicles" for this month.

CAR 14: The statement in the MR version 1.0: "Storage period of the data in electronic form is limited with three months, in paper form - unlimited." is not applicable to the monitoring of the parameter "net electricity, produced by project CHP" and shall be adjusted to reflect the actual situation (section 3.3 of the MR version 1.0).
CAR 14, means of verification
The verifier team has reviewed the revised MR version 2.0, as well as the the approved Oder about monitored data storage: the item "3.3. Aggregation and processing of measured values" was updated to be in line with the MP and the actual situation observed during the site visit.
CAR 14, changes in the MR or related documents
Cf. revised MR version 2.0: The appropriate adjustments have been introduced into MR; in particular, all monitoring parameters are to be kept for 2 years after the ending of crediting period.

CAR 15: MP contains the formula 5 used for NCV_{BR} calculation. However, actually the monitored parameter is the net calorific value of wet biomass. This is inconsistent with the MP. MR and calculation model are to be adjusted accordingly.
CAR 15, means of verification
The verifier team has reviewed the revised MR version 2.0 including the following changes to the MP as proposed for determination by the PPs: net calorific value of wet sunflower seeds husk (NCVwet), which was indicated as monitored parameter. The average annual value between two annually measured values is determined. Refer to section 3.3 of the current verification report for details of the determination opinion of the assessment team regarding the revisions of the MP.

CAR 15, changes in the MR or related documents
Cf. revised MR version 2.0: the appropriate adjustments has been introduced in MR, see Table 1.1.1. there and Excel calculation

CAR 16: The principle and methodology/standard for the net calorific value of sunflower seeds husk sampling are missing in the MR. It is necessary to adjust the documentation accordingly.
CAR 16, means of verification
The verifier team has reviewed the revised MR version 2.0 including the following changes to the MP as proposed for determination by the PPs: the principle of sampling for the parameter "net calorific value of sunflower seeds" husk was included in the MP (Annex 2 of MR), which reflects the actual situation observed on-site. The respective justification was added in the Annex 3 to the MR version 2.0 and was found appropriate by the verifying AIE. Refer to section 3.3 of the current verification report for details of the determination opinion of the assessment team regarding the revisions of the MP.
CAR 16, changes in the MR or related documents
Cf. revised MR version 2.0 (Annex 3), Table D.1.1.1: The husk sampling for NCV determination is done by the personnel of certified laboratory of the PP making an analysis according to the own internal procedures.

CAR 17: The parameter "Net calorific value of sunflower seeds husk" is calculated as average of two values in the Excel calculation model. This is inconsistent with this the changed and determined MP. Correction/clarification is requested.
CAR 17, means of verification
The verifier team has reviewed the revised MR version 2.0 including the following changes to the MP as proposed for determination by the PPs: NCV is sampling and determination twice per year as well as average annual value using for the GHG emission reduction calculation is envisaged by the updated MP. (Annex 2 of the MR), which reflects the actual situation observed on-site. The respective justification was added included in the Annex 3 to the MR version 2.0. Refer to section 3.3 of the current verification report for details of the determination opinion of the assessment team regarding the revisions of the MP.
CAR 17, changes in the MR or related documents
Cf. revised MR version 2.0 (Annex 3) and adjusted ERUs calculation model version 2.0: Monitoring plan envisage the NCV determination twice per year by the certified laboratory. Then average annual value is determined for the GHG emission reduction calculation throughout the monitoring period.

CAR 18: The responsibility for the data acquisition for the parameter "Net calorific value of natural gas" is not stated in the MR version 1.0.
CAR 18, means of verification
The verifier team has reviewed the revised MR version 2.0 as well as the internal order approved at the enterprise with special focus on the justifictaion of responsibility for the data acquisition for the respective parameter (here: "Net calorific value of natural gas"). The corresponding changes to the MP were incorporated in the MR version 2.0.

Refer to section 3.3 of the current verification report for details of the determination opinion of the assessment team regarding the revisions of the MP.
CAR 18, changes in the MR or related documents
Cf. revised MR version 2.0, Table D.1.1.1: the name of the responsible person for the acquisition of natural gas quality certificates is specified.

CAR 19: The cross check and calculation of the parameter "total quantity of sunflower seeds husk, generated at the enterprise" based on the raw data were performed on-site on a random basis. The deviation 1.5% between the reported and calculated data was detected. The values for the present parameter within the reporting period shall be internally cross-checked and recalculated. The respective evidences are to be submitted to the assessment team. During on-site audit that the wrong value of the transfer coefficient was used for transformation of the measured steam quantity into heat. The calculations of the ERUs are to be corrected taking onto account the approved at the enterprise. Moreover, the following statement in the section "3.4 Monitoring scheme" of the MR version 1.0 in not in line with the actual situation observed onsite by the assessment team: "For the quantitative evaluation of steam and condensate flows, measuring of their temperature, pressure and consumption ***is planned*** in order to obtain integrated values of heat from the heat meter. Accounting of electricity consumption for own needs and electricity sold to the grid with the green tariff or consumed from the grid ***is expected*** to be done by separate electrical meters working on accumulating principle." The respective amendments are to be made in the MR.
CAR 19, means of verification
The verifier team has reviewed the revised MR version 2.0 and the raw data sampling / raw data for three random days provided by PP to ensure transparency. The rest daily values within the monitoring period were checked and validated by the deputy director of production. This is confirmed by the official certificate from the enterprise. The section "3.4 Monitoring scheme" of the MR version 2.0 was amendments to eliminate unconformity revealed during on-site mission.
CAR 19, changes in the MR or related documents
Cf. revised MR version 2.0, and Calculation file version 2.0. The parameter was recalculated according to standard enterprise procedures, which is confirmed by the official answer from responsible monitoring officer at the enterprise. The transfer coefficient for production heat Qy has been revised and corrected accordingly. The unconformity in the text/wording of the MR, section "3.4 Monitoring scheme", has been eliminated as requested.

CAR 20: The issuing date and revision number of the ERU calculation tool shall be presented in the MR and Excel calculation model to ensure transparency. The baseline and project emissions are wrongly named "baseline/project emission reductions" throughout the text of the MR version 1.0 and excel calculation model.
CAR 20, means of verification
The verifier team has reviewed the revised MR version 2.0: requested information was found is included, spreadsheets were renamed accordingly.
CAR 20, changes in the MR or related documents
Cf. revised MR version 2.0, and Calculation file version 2.0 for respective updates.

CAR 21: The algorithm for “Dry biomass consumption Wx”, “Wet biomass consumption BFk,y”, “Methane emissions avoidance from biomass landfilling” in the Excel model does not correspond to those the MP. The Excel calculation model shall be corrected in order to be in full compliance with the MP (including symbols and abbreviations).
CAR 21, means of verification
The verifier team has reviewed the revised Excel calculation model version 2.0, which is in compliance with the MP now. The detailed calculation of the GHG emissions from the source “Methane emissions avoidance from biomass landfilling” was submitted in the form of separate excel file “HUSK annual” and referenced in the MR itself. The calculations were found in line with the MP.
CAR 21, changes in the MR or related documents
Cf. revised Calculation file version 2.0 for respective updates; it’s fully in compliance with MP and MR now.

CAR 22: The inconsistencies between the monthly data in the MR version 01 and Excel calculation model for the following parameters are to be eliminated: Moisture (W), % Wet biomass consumption BFk,y, t Dry biomass consumption Wx, t.
CAR 22, means of verification
The verifier team has reviewed the revised MR version 2.0: the parameter “Dry biomass consumption” was excluded from the monitoring as per the changes to the MP (s. Annex 2 to the revised MR), justified by PP as follows: dry biomass consumption is obtained on the basis of recalculation on dry mass using wet biomass consumption and moisture and thus, can be excluded from the list of parameters due to absence of reasonability of its separate determination. Refer to section 3.3 of the current verification report for details of the determination opinion of the assessment team regarding this revision to the MP. In addition, the verifier team has reviewed the revised MR version 2.0 and corresponding Excel calculation model, version 2.0 vs. primary data for the parameter “Wet biomass consumption” submitted by the PP (here: raw monthly data for moisture and wet biomass consumption has been provided in separate electronic spreadsheets # 8 and # 18): the inconsistency between the monthly data in the MR and Calculation model was found eliminated.
CAR 22, changes in the MR or related documents
Cf. revised Calculation file version 2.0, and revised MR version 2.0 (s. Annex 2 there).

CAR 23: There is no summary of the main events (operation and stops of the main the equipment and instruments) during the 2nd monitoring period in the MR version 1.0.The MR shall be adjusted accordingly.
CAR 23, means of verification
The verifier team has reviewed the revised MR version 2.0 with special focus on the details of reporting of the main events during the monitoring period (s. Table 1.1 of MR) and found the summary of events in compliance with the Certificate about nonworking days of the enterprise

and Acceptance certificate received on-site.
CAR 23, changes in the MR or related documents
Cf. revised MR version 2.0, in particular Section 1.1 Table 1.1. for the summary regarding operation of main equipment included in project boundaries; the instruments and meters calibration and check-up summary with the indication of dates in format DD.MM.YYYY is presented in Table 5.1.

CAR 24: The MR version 1.0 states that "establishment of baseline scenario and monitoring plan is done in compliance with the approved Baseline and Monitoring Methodology ACM0006, version 11.1.02, approved by the Executive Board of CDM at the 17th of December 2010" (chapter 1.2, 3.1). However, it is clearly indicated in the chapter 3.5 that ERUs were calculated in accordance with the changes to the monitoring plan determined by Bureau Veritas Holding SAS within the previous verification (Verification Report No. UKRAINE-VER/0066/2009 "Utilization of sunflower seeds husk for steam and power production at the oil extraction plant OJSC "Kirovogradoliya" dated 20/04/2011). The cross-reference to Annex 2 "changes to the monitoring plan" is provided in the section 3.5 of the MR. At the same time Annex 2 contains only Monitoring plan. Corresponding revisions to the MR are requested.
CAR 24, means of verification
The verifier team has reviewed the revised MR version 2.0: the inconsistencies were found eliminated. Correct reference to the approved consolidated baseline methodology ACM0006 version 6 was added, which is in line with the MP now.
CAR 24, changes in the MR or related documents
Cf. revised MR version 2.0, for corrections in Sections 1.2, 3.1, 3.5 and Annex 2 to assure conformity of monitoring procedure. The statement about changes to the MP within the previous verification was added to the section "1.2 Methodology used for project activity".

CAR 25: There is no comparative analysis of the ERUs achieved during the monitoring period with the ones stated in the determined PDD indicating the reason of noncompliance. MR shall be adjusted accordingly.
CAR 25, means of verification
The verifier team has reviewed the revised MR version 2.0: the amendments were made in the section "1.1 Brief project description". The comparative analysis clearly justifies the difference of emission reductions estimated in the PDD and calculated according to real data from enterprise within the monitoring period.
CAR 25, changes in the MR or related documents
Cf. revised MR version 2.0, Section 1.1. for comparative analysis as requested.

CL 1: It is necessary to provide the commissioning acts for steam sunflower seeds husk fired boilers and steam turbine. In addition, it is necessary to provide the details of technical specification of equipment, including capacity, manufacturer, commissioning date, serial numbers. Moreover, the following statement in the MR version 1.0 shall be clarified: "CHPP capacity is 1.7 $MW_{el.}$ + 26.7 MW_{th}". (p.2, chapter 1.1).

It is stated in the MR version 1.0 that "...project participants in compliance with ... latest "materiality" concept decided to use JI specific approach". It is necessary to clarify the meaning of the "materiality concept" and how this concept is applicable to the project monitoring.
CL 1, means of verification
The verifier team has reviewed the revised MR version 2.0, assess the PP's clarification as a response to this Request and checked the submitted commissioning acts. This issue was closed then.
CL 1, changes in the MR or related documents
Cf. revised MR version 2.0: the missleading statement has been revealed and eliminated. In particular, The Materiality concept does not establish rules regarding choosing procedure of whether JI project should be developed in frames of JI specific approach, approved CDM methodology approach or approach based on methodologies combination. In the materiality concept it states that "...4. In preparing the verification of a project's reductions of anthropogenic emissions by sources or enhancements of anthropogenic removals by sinks, the AIE shall assess whether the MR prepared by the PP and all its supporting data and other information provide sufficient support for the verification." The mentioning of materiality concept in monitoring report is done with purpose to indicate that this concept may be applied to current monitoring if necessary. To eliminate confusion in the interpretation the "materiality concept" wording has been deleted in the sentence mentioned by verification team in its Request.

CL 2: The contract on electricity supply shall be submitted to the verification team.
CL 2, means of verification
The verifier team has reviewed the provided audit evidence, to confirm the legal status of the opeartions (s. Chapter "Apprioval/Licences" as per Verifictaion Protocol check-list).
CL 2, changes in the MR or related documents
N/A, no changes in the MR, etc

CL 3: The documentary evidences of the conducted trainings of key personal involved in JI project maintenance and data monitoring (within the reporting period) is requested.
CL 3, means of verification
The verifier team has reviewed the provided audit evidence, here: the official document from enterprise regarding training of personnel involved in JI project maintenance.
CL 3, changes in the MR or related documents
N/A, no changes in the MR, etc

CL 4: It was observed onsite that the following parameters $EC_{PJ, y}$, $BF_{k,y, wet\ inlet}$, W, Q_y were calculated in accordance with the internally approved methodologies: - "Methodology for the assessment of the electricity consumption for the CHPP own needs for the monitoring on the Joint Implementation project within the Kyoto protocol scope "Sunflower seeds husk utilization for steam and electricity production at the OJSC "Kirovogradoliya", approved 4 January 2009" within the reporting period. - "Methodology of sunflower seeds husk quantity calculation, which is supplied on the storage site (for further combustion in boilers) for the monitoring on the Joint Implementation project within the Kyoto protocol scope "Sunflower seeds husk utilization for steam and electricity

production at the OJSC "Kirovogradoliya" approved at 4th of January 2009." - "Methodology of husk moisture content determination, approved 4th of January 2009" - "Methodology for the assessment of the heat consumption for the production needs for the monitoring on the Joint Implementation project within the Kyoto protocol scope "Sunflower seeds husk utilization for steam and electricity production at the OJSC "Kirovogradoliya", approved 4 January 2009" It is necessary to clarify whether this is in compliance with the registered MP and provide respective evidences.
CL 4, means of verification
The verifier team has reviewed the revised MR version 2.0 and assessed the PP's clarification referencing to the methodologies used in calculation of intermediate parameters according to real business practice and approved at the enterprise. The compliance of the methodologies with the determined changes (determination performed during the previous verification - Verification Report No. UKRAINE-VER/0066/2009 "Utilization of sunflower seeds husk for steam and power production at the oil extraction plant OJSC "Kirovogradoliya" dated 20/04/2011) was checked and confirmed by the verification team.
CL 4, changes in the MR or related documents
Cf. revised MR version 2.0, section 1.2 for confirmation of compliance with the registered (verified) MP after the 1st verification done by Bureau Veritas Holding SAS within the previous verification.

CL 5: It was observed on-site that the parameter "total quantity of oil produced by the enterprise for appropriate period" is not measured directly, but calculated based on other monitored parameters. However, in accordance with the registered MP it shall be measured. Correction/clarification is requested.
CL 5, means of verification
The verifier team has reviewed the revised MR version 2.0, in particular the reported changes to the MP (Annex 2 to the MR), which were made to eliminate non-conformity. Refer to section 3.3 of the current verification report for details of the determination opinion of the assessment team regarding this revision to the MP. The passport of the equipment used for the parameter monitoring was checked and found in consistency with the calibration information, as included in the Table 5.1 of revised MR.
CL 5, changes in the MR or related documents
Cf. revised MR version 2.0, tables 5.1 and D.1.1.1 for all necessary corrections as requested.

CL 6: The parameter $EF_{CO2,BL,heat,i}$ repeats the parameter $EF_{CO2,FF,NG}$. It is necessary to clarify which one is used for ERUs calculation.
CL 6, means of verification
The parameter "$EFCO_{2,BL,heat,i}$" was excluded from the monitoring as per the changes to the MP (Annex 2 to the MR version 2.0). Refer to section 3.3 of the current verification report for details of the determination opinion of the assessment team regarding this revision to the MP.
CL 6, changes in the MR or related documents

Cf. revised MR version 2.0: MP has been adjusted so that only one parameter with one marking $EF_{CO2,BL,heat,i}$.is used and renamed as $EF_{CO2\ NG}$ to ensure consistency of baseline and project scenario emissions.

CL 7: It was observed on-site that the parameter "Quantity of sunflower seeds husk avoided to landfilling during year x" is not estimated as per the registered MP directly but calculated based on other monitored parameters. Correction/clarification is requested.
CL 7, means of verification
The parameter "Quantity of sunflower seeds husk avoided to landfilling during year x" was excluded from the monitoring as per the changes to the MP (Annex 2 to the MR version 2.0) and the internally approved at the enterprise methodology. Refer to section 3.3 of the current verification report for details of the determination opinion of the assessment team regarding this revision to the MP.
CL 7, changes in the MR or related documents
Cf. revised MR version 2.0: mentioned parameter Wx "Quantity of sunflower seeds husk avoided to landfilling during year x" has been excluded out from calculation due to absence of reasonability of its separate determination. As clarified by the PP: It is equal to BFk,y. This parameter is determined instrumentally by direct measurements. The "Amount of wet sunflower seeds husk prevented from disposal in the landfill in the year x (t of wet matter)" used in landfill model is full equivalent of value "Quantity of sunflower seeds husk combusted in the new CHP plant during the year y" (t of wet matter).

CL 8: It was revealed on-site that pressure and temperature of the natural gas are to be measured to monitor gas consumption. There is a need to clarification on the reason of exclusion of those parameters from the MP.
CL 8, means of verification
The verifier team has reviewed the revised MR version 2.0: each sensor of the natural gas accounting point was found indicated in the revised MR. The issue is closed based on the clarifications provided by the PPs as follows: in the latest version of PDD T and P of natural gas has to be monitored in order to determine density of natural gas and then mass flow (kg/month) by known volume flow (m3/month). However on the real practice the certificates on natural gas quality contain the figure of natural gas NCV per volume units (MJ/m3 or kcal/m3). This value is enough to calculate energy content in volume unit, so the mass flow measurements become unnecessary. Enterprise has direct measurements of natural gas volume flow (in nm3) and NCV of natural gas obtained from gas supplier certificates per volume unit of natural gas (in MJ/m3) so energy content could be easily calculated without additional measurements.
CL 8, changes in the MR or related documents
Cf. revised MR version 2.0: each sensor of the natural gas accounting point is indicated.

CL 9: The audit team observed that the parameter "Quantity of natural gas consumed by reserve gas fired burners at the operating husk fired boiler # 4 in the case of unforeseen or unexpected" is aggregated monthly. Moreover, excel calculation model contains the monthly values. At the same time the MP envisages monitoring of the parameter yearly, which is inconsistent with the actual situation. Correction/clarification is requested.

CL 9, means of verification
The verifier team has reviewed the revised MR version 2.0: the MP was found changed to reflect the actual situation observed during the on-site mission. Refer to section 3.3 of the current verification report for details of the determination opinion of the assessment team regarding this revision to the MP.
CL 9, changes in the MR or related documents
Cf. revised MR version 2.0: the inconsistency has been eliminated throughout MR and MP.

CL 10: The audit team observed that the parameter "Quantity of net electricity, produced by project CHP" is aggregated monthly. Moreover, excel calculation model contains the monthly values. At the same time the MP envisages monitoring of the parameter yearly, which is inconsistent with the actual situation. Correction/clarification is requested.
CL 10, means of verification
The verifier team has reviewed the revised MR version 2.0: the MP was found changed to reflect the actual situation observed during the on-site mission. Refer to section 3.3 of the current verification report for details of the determination opinion of the assessment team regarding this revision to the MP.
CL 10, changes in the MR or related documents
Cf. revised MR version 2.0: the inconsistency has been eliminated throughout MR and MP.

CL 11: The data unit in the certificates from gas provider is kcal/m^3. This is not in compliance with the revised MP. At the same time the Excel calculation model includes the algorithm for values conversion. Correction/clarification is requested.
CL 11, means of verification
The verifier team has reviewed the revised MR version 2.0: the MP was found changed to reflect the actual situation observed during the on-site mission. Refer to section 3.3 of the current verification report for details of the determination opinion of the assessment team regarding this revision to the MP.
CL 11, changes in the MR or related documents
Cf. revised MR version 2.0, table D.1.1.1.: Data measurement units have been appropriately corrected from GJ/nm^3 to kcal/nm^3.

FAR 1: The monitoring manual, describing the JI project management, monitoring points, monitoring frequency for each parameter (raw data and aggregated sum), procedure and responsibilities for cross-check and approval of monitoring results (internal audits) shall be developed and approved at the enterprise and provided to the assessment team during the next periodic verification.
FAR 1, means of verification
Subject of subsequant verification.
FAR 1, changes in the MR or related documents
N/A

FAR 2: All the monitored data was available during the onsite visit. However, the procedure of redundancy and/or IT solution of data protection measures are to be implemented to ensure data protection.
FAR 2, means of verification
Subject of subsequant verification.
FAR 2, changes in the MR or related documents
N/A

Industrie Service

5 VERIFICATION STATEMENT

TÜV SÜD Industrie Service GmbH has performed the 2nd periodic verification of the registered JI Track-1 project "Utilization of Sunflower Seeds Husk for Steam and Power Production at the Oil Extraction Plant OJSC "Kirovogradoliya". The verification is based on requirements of the UN Framework Convention on Climate Change (UNFCCC) and the host country specific requirements.

The management of PJSC "Kirovogradoliya" is responsible for the preparation of the GHG emissions data and the reported GHG emission reductions on the basis set out within the project's Monitoring Plan indicated in the registered PDD version 02, dated 28-04-2010 and Monitoring Plan revisions (Annex 2 of the MR version 3.0, dated on 12-06-2012) submitted together with the final Monitoring Report of the present monitoring period.

The verification team can confirm that the GHG emission reductions are calculated without material misstatement. Our opinion relates to the project's GHG emissions and resulting GHG emissions reductions reported and related to the valid and registered project baseline and monitoring, and to the associated documents reviewed within the assessment period.

The verification team confirms that the revisions of the monitoring plan of the project activity enhance the level of accuracy and completeness of the monitoring plan.

Based on the information we have seen and evaluated TÜV SÜD confirms the following statement:

Reporting period: from 01-01-2011 to 31-12-2011

Verified emissions in the above reporting period:

Baseline emissions:	43,777	t CO_2 equivalents
Project emissions:	5,944	t CO_2 equivalents
Leakage emissions:	0	t CO_2 equivalents
Emission reductions:	37,833	t CO_2 equivalents

Munich, 25/06/2012

Certification Body "climate and energy"
TÜV SÜD Industrie Service GmbH

Munich, 25/06/2012

Assessment Team Leader

Industrie Service

Annex 1

Verification Protocol

Industrie Service

Annex 1: Verification Protocol

Table of Contents

Industrie Service

1. Project Activity Implementation

1.1 Technology

Location (s)			
	PDD Description	Verified Situation	Conclusion and IRL
Description / Address:	"Kirovogradoliya" company is located in the centre Kirovograd City, Kirovograd region, Ukraine.	The company is located in Kirovograd City, Kirovograd region, Ukraine.	☑
GSP coordinates:	Not applicable	Not applicable	☑
Technical Equipment – Main Components			
	PDD Description	Verified Situation	Conclusion and IRL
Description	As per final version of the PDD the project foresees the installation of CHP. New CHP plant was expected to consist of three steam sunflower seeds husk fired boilers and steam turbine. Sunflower husk is used as the main fuel. One of the boilers was expected to contain the gas burners for using of natural gas as the reserve fuel.	The assessment team can confirm that three steam sunflower seeds husk fired boilers and steam turbine were installed and operated during onsite inspection as well as during the whole monitoring period (except the maintenance time). **Clarification Request #1**: Provide commissioning acts for steam sunflower seeds husk fired boilers and steam turbine. Provide details of technical specification of equipment, including capacity, manufacturer, commissioning date, serial number. The following statement in the MR version 1.0 shall be clarified: "CHPP capacity is 1.7 $MW_{el.}$ + 26.7 MW_{th}". (p.2, chapter 1.1). It is stated in the MR version 1.0 that "...project participants in compliance with	CL CAR IRL 9, 43-44

		... latest “materiality” concept decided to use JI specific approach”. Please clarify what is meant under "materiality concept” and how this concept is applicable to the project monitoring. **Corrective Action Request #1** The actual monitoring scheme does not correspond to the scheme included in the MR version 1.0: - electrical power metering does not correspond to the scheme included in the MR version 1.0 - the symbol of flow meter (FE) of heat meter unit No5 is absent in the scheme - the pressure measuring sensor is shown instead of flow meter for the heat meter unit No17. It was observed onsite that installed at Kirovogradoliya turbine is the turbine with counter pressure. However, it is indicated in the MR that the turbine type is condensing one. This inconsistency shall be corrected.	
Component 1: Steam sunflower seeds husk fired boiler #1 Technical Features	Company responsible for the CHP plant construction project as a whole is the Project-Survey Institute “Kirovogradagroproject”. The Institute has to select standard equipment for CHP plant. As there are no standard husk fired boilers in Ukraine, special design organisation is also involved in the project design and implementation. Company responsible for	The steam sunflower seeds husk fired boiler was installed and operated during the physical inspection well as during the whole monitoring period (except the maintenance time). Conclusion is pending a response to CL#1 above.	CL IRL 9, 43-44

	designing of husk fired boilers is Special Project-Design and Technology Bureau “Energomashproject”, Kyiv. Manufacturers of the equipment are expected to be: - husk fired boilers – OJSC “Sater” (Ukraine); - evaporator – OJSC “The Taganrog boiler works” (Krasniy Kotelschik) (Russia); - turbo-unit – PBS Velkobites (Czech); - condenser – Bronsverk Heat Transfer (Czech); - feed pumps – company “Energomash” (Ukraine).		
Component 2: Steam sunflower seeds husk fired boiler #3 Technical Features	See the general description of the project activity for Component 1 above.	The steam sunflower seeds husk fired boiler was installed and operated during the physical inspection well as during the whole monitoring period (except the maintenance time). Conclusion is pending a response to CL#1 above.	CL IRL 9, 43-44
Component 3: Steam sunflower seeds husk and natural gas fired boiler #4 Technical Features	See the general description of the project activity for Component 1 above.	The steam sunflower seeds husk and natural gas fired boiler was installed and operated during the physical inspection well as during the whole monitoring period (except the maintenance time). Conclusion is pending a response to CL#1 above.	CL IRL 9, 43-44
Component 3: Steam turbine Technical Features	See the general description of the project activity for Component 1 above.	The steam turbine was installed and operated during the physical inspection well as during the whole monitoring period (except the maintenance time).	CL IRL 9, 43-44

		Conclusion is pending a response to CL#1 above.	
Operation Status during verification			
	Verified Situation		Conclusion and IRL
Approvals / Licenses	**Clarification Request #2**: The contract on electricity supply shall be submitted to the verification team.		CL
Actual Operation Status	Start date of operation (each site if applicable): 27th of April, 2009. The date was evidenced during onsite interviews. However, the final conclusion is pending a response to CL#1 above. Under construction ☐ In operation ☒ Out of operation ☐ Reason and date (if out of operation): not applicable		CL
	Corrective Action Request #2 There are two contradictory statements in the section 1.1 of the MR version 1.0: - All equipment installed during the project activity on the enterprise has been put into operation according to PDD version 2 (12 February 2008) - Project starting date according to the PDD of the JI project was December 2007. However, due to the logistical and financial problems at the company the official project start was delayed till the 27th of April, 2009. There is no information regarding the status of project realization and measures implemented in the framework of the project (including special cases, maintenance time) during the 2nd monitoring period in the MR version 01. Corresponding correction are to be made in the MR.		CAR
Remarks to Special Operational Status During the Verification Period	Phased implementation: The project was fully implemented before the 1st of January 2011 – the start of the present monitoring period. This was confirmed during onsite interweaves and physical inspection manufacturing area.		CAR IRL 9, 43-44

	Special cases: Conclusion is pending a response to CAR#2 above.	

1.2 Organization

Project Participant (s)		
	Verified Situation	Conclusion and IRL
Entity / Responsible person:	PDD: Open Joint-Stock Company ‘Kirovogradoliya’, Mr. Vladimir Umrikhin, Chief of the board at the OJSC ‘Kirovogradoliya’ The Sponsor Party was not defined in the PDD. MR: Public Joint Stock Company “Kirovogradoliya” **Corrective Action Request #3** The PP form the Host country was changed. Provide explanation and documentary evidence regarding change of the company name. The MR version 01 contains both names Public Joint Stock Company “Kirovogradoliya” and Open Joint Stock Company “Kirovogradoliya”. This must be adjusted in accordance with the actual situation observed onsite. The Project participant from the Appendix 1 countries is not indicated in the MR. MR shall be corrected accordingly.	CAR
JI Project management:	PDD: Calculations of emission reduction will be prepared by specialists of Kirovograd Edible Oil Plant at the end of every reporting year. The project manager of Kirovograd Edible Oil Plant will prepare reports, as needed for audit and verification purposes. Specialists of “Scientific Engineering Centre “Biomass” will check the prepared reports. The internal Order about the appointment of responsible persons for information capture in the framework of JI project was presented to the assessment team for review. It establishes the responsibilities for raw data aggregation and monthly value calculation. **Corrective Action Request #4** It is stated in the MR version 1.0 that the specialists of OJSC “Kirovogradoliya” will prepare all necessary reports for GHG emission reduction calculation and verification	CAR FAR IRL 10

	performance and the specialists of "Biomass-Carbon", LLC will review prepared reports. Clarify who is the appointed project manager from Kirovogradoliya responsible for preparation reports as per determined PDD. **Forward Action Request #1** The monitoring manual, describing the JI project management, monitoring points, monitoring frequency for each parameter (raw data and aggregated sum), procedure and responsibilities for cross-check and approval of monitoring results (internal audits) shall be developed and approved at the enterprise and provided to the assessment team during the next periodic verification.	

1.3 Quality Management System

General aspects of the Quality Management System		
	Verified Situation	Conclusion and IRL
Quality Management Manual:	See FAR #1 above.	FAR
Responsibilities:	The internal Order about the appointment of responsible persons for information capture in the framework of JI project was presented to the assessment team for review. It establishes the responsibilities for raw data aggregation and monthly value calculation for the monitored parameters. Please also see FAR#1 above.	FAR
Qualification and Training:	Based on the results of the conducted interviews, the assessment team came to the conclusion that the responsible staff has appropriate knowledge and qualification to ensure the fulfilment of the respective monitoring procedures. **Clarification Request #3** Please, submit the documentary evidences of the conducted trainings of key personal involved in JI project maintenance and data monitoring (within the reporting period).	CL
Implementation of QM-system	Currently all the monitored parameter are measured and aggregated as a part of technological process. As per the internal Order responsibilities for raw data aggregation and monthly value calculation were also established at the enterprise. This	FAR

	was checked and confirmed by the verification team during onsite inspection. The aggregation of the parameters was implemented in accordance with the revised MP. All the revisions are described in the monitoring report for the period 27/04./2009 – 31/12/2010 (available on the official web-site of the National Electronic Registry of Anthropogenic Emissions and Absorption of Greenhouse Gases of Ukraine http://www.carbonunitsregistry.gov.ua/en/publication/content/904.htm). They were determined by AIE Bureau Veritas Certification Holding SAS within the first periodic verification. The verification report which includes the positive determination opinion of the revisions is available on the stated above web-link. Please also see FAR#1 above.	

1.4 Remaining FARs from previous Verifications (or forwarded issues of validation report)

Remaining Requests from Previous Verifications	Summary of project owner response	Audit team Conclusion and IRL
No FAR has been raised during the last verification	N/A	N/A

Monitoring Plan Implementation

1.5 Parameters

Parameters					
PDD	Determined changes to the monitoring plan	MR	Included in table	Compliance	Conclusion and IRL

$FF_{project\ site,i,y}$	$FF_{project\ site,i,y}$	$FF_{project\ site,i,y}$	Table 1.6 a	Quantity of natural gas consumed by reserve gas fired burners at the operating husk fired boiler # 4 in the case of unforeseen or unexpected situation. Compliant.	☑

$EC_{PJ,y}$ $EC_{PJ, HP\_needs,y}$	$EC_{PJ, y}$	$EC_{PJ, y}$	Not applicable	**Clarification Request #4** It was observed onsite that the following parameters $EC_{PJ, y}$, $BF_{k,y, wet\ inlet}$, W, Q_y were calculated in accordance with the internally approbed methodologies : - “Methodology for the assessment of the electricity consumption for the CHPP own needs for the monitoring on the Joint Implementation project within the Kyoto protocol scope “Sunflower seeds husk utilization for steam and electricity production at the OJSC “Kirovogradoliya”, approved 4 January 2009” within the reporting period. - “Methodology of sunflower seeds husk quantity calculation, which is supplied on the storage site (for further combustion in boilers) for the monitoring on the Joint Implementation project within the Kyoto protocol scope “Sunflower seeds husk utilization for steam and electricity production at the OJSC “Kirovogradoliya” approved at 4th of January 2009.” - “Methodology of husk moisture content determination, approved 4th of January 2009” - “Methodology for the assessment of the heat consumption for the production needs for the monitoring on the Joint Implementation project within the Kyoto protocol scope “Sunflower seeds husk utilization for steam and electricity production at the OJSC “Kirovogradoliya”, approved 4 January 2009” Please clarify is this is in compliance with the registered monitoring plan and provide respective evidences.	CL IRL 23, 24, 26, 28, 50

$BF_{k,v,wet}$	$BF_{k,y,wet\ inlet}$	$BF_{k,y,wet\ inlet}$	Not applicable	Total quantity of sunflower seeds husk, generated at the enterprise. See CL#4 above.	CL IRL 24, 50
Not applicable.	$BF_{k,y,wet\ sold}$	$BF_{k,y,wet\ sold}$	Table 1.6 b	Total quantity of sunflower seeds, which is sold to outside consumers.	☑
W	W	W	Not applicable	Moisture of sunflower seeds husk. See CL#4 above.	CL IRL 23, 50
$EF_{CH4,BF}$	$EF_{CH4,BF}$	$EF_{CH4,BF}$	Not applicable	Emission factor of CH_4 due to sunflower seeds husk combustion in project scenario. The fixed value 30 tCH4/GJ as per determined PDD version 2 dated 12/02/2008 was correctly applied.	☑ IRL 51
Q project plant, y	Q_y	Q_y	Not applicable	Net quantity of heat used for production purposes of enterprise. See CL#4 above.	CL IRL 28, 50
Not applicable.	$M_{п.м.}$	$M_{п.м.}$	Not applicable	**Clarification Request #5** It was observed onsite that the parameter “total quantity of oil produced by the enterprise for appropriate period” is not measured directly but calculated based on other monitored parameters. However, in accordance with the registered MP it shall be measured. Please correct/clarify.	CL IRL 50
Not applicable.	$q_{п.м.}$	$q_{п.м.}$	Not applicable	Specific norm of heat consumption for oil production The fixed value 0.578 Gcal/t as per determined changes to the monitoring plan was correctly applied.	☑ IRL 50, 52, 53
NCV_{ng}	NCV_{NG}	NCV_{NG}	Table 1.8 a	Net calorific value of natural gas	☑
NCV_{BR}	NCV_{BR}	NCV_{BR}	Table 1.7 a	Net calorific value of sunflower seeds husk	☑

$EF_{BL,CO2,FF}$	$EF_{grid,y}$	$EF_{grid,y}$	Not applicable	Grid emission factor for electricity during year y. **Corrective Action Request #5** The Excel calculation model, as well as MR, contains invalid values of the coefficients of CO_2 emission for the Ukrainian grid (used for baseline and project emission calculation). MR and ERUs calculation shall be adjusted accordingly. The evidence regarding the class of electricity consumption is to be provided to the assessment team.	CAR IRL 35, 50, 55
$EF_{CO2,FF,NG}$	$EF_{CO2,FF,NG}$	$EF_{CO2,FF,NG}$	Not applicable	CO_2 Emission factor for natural gas consumed by reserve gas boiler # 4	☑
EGy	EG_y	EG_y	Table 1.6 c	Quantity of net electricity, produced by project CHP during year y.	☑
$EF_{electricity,y}$	$EF_{electricity,y}$	$EF_{electricity,y}$	Not applicable	Grid emission factor for electricity during year y.	☑
$BF_{k,v}$	$BF_{k,v}$	$BF_{k,v}$	Not applicable	Net quantity of sunflower seeds husk consumed by boilers at the enterprise	
$\mathcal{E}_{boiler}$	$\mathcal{E}_{boiler}$	$\mathcal{E}_{boiler}$	Not applicable	Efficiency of gas boilers, which will be used in the absence of project activity (baseline)	☑

$EF_{co2,BL,heat,i}$	$EF_{CO2,BL,heat,i}$	$EF_{CO2,BL,heat,i}$	Not applicable	Emission factor of the fossil fuel (natural gas) used for heat generation in the absence of project activity **Clarification Request #6** The parameter $EF_{CO2,BL,heat,i}$ repeats the parameter $EF_{CO2,FF,NG}$. Please clarify which one is used for ERUs calculation.	CL
φ	φ	φ	Not applicable	Model correction factor **Corrective Action Request #6** The applied values of the parameters: - Fraction of the methane captured at the landfill and flared, combusted or used in another manner - Decay rate for the sunflower seeds husk - Methane correction factor - Sunflower seeds husk fraction of degradable organic carbon (by weight) - Model correction factor - Fraction of methane in the landfill gas - Fraction of degradable organic carbon that can decompose - Quantity of sunflower seeds husk avoided to landfilling during year x. are missing in the MR version 1.0 as well in the excel calculation model. Thus the reporting does not comply with the determined changes to the MP. This shall be clarified and MR shall be corrected in order to comply with the MP.	CAR IRL 35, 50
OX	OX	OX	Not applicable	Oxidation factor See CAR#6 above	CAR IRL 35, 50

F	F	F	Not applicable	Fraction of methane in the landfill gas See CAR#6 above	CAR IRL 35, 50
DOC_f	DOC_f	DOC_f	Not applicable	Fraction of degradable organic carbon that can decompose See CAR#6 above	CAR IRL 35, 50
MCF	MCF	MCF	Not applicable	Methane correction factor See CAR#6 above	CAR IRL 35, 50
DOC_j	DOC_j	DOC_j	Not applicable	Sunflower seeds husk fraction of degradable organic carbon (by weight) See CAR#6 above	CAR IRL 35, 50
k	k	k	Not applicable	Decay rate for the sunflower seeds husk See CAR#6 above	CAR IRL 35, 50
GWP_{CH4}	GWP_{CH4}	GWP_{CH4}	Not applicable	Global warming potential of methane. The fixed value 21 tCH4/GJ as per determined PDD version 2 dated 12/02/2008 was correctly applied.	☑ IRL 51
f	f	f	Not applicable	Fraction of the methane captured at the landfill and flared, combusted or used in another manner See CAR#6 above	CAR IRL 35, 50
W_x	W_x	W_x	Not applicable	**Clarification Request #7** It was observed onsite that the parameter “Quantity of sunflower seeds husk avoided to landfilling during year x” is not estimated as per the registered MP directly but calculated based on other monitored parameters. Please correct/clarify.	☑ IRL 35, 50

T	Not applicable	Not applicable	Not applicable	**Clarification Request #8** It was revealed onsite that pressure and temperature of the natural gas are to be measured to monitor gas consumption. Clarify why these parameter were excluded from the MP.	CL IRL 50
P	Not applicable	Not applicable	Not applicable	See CL above.	CL IRL 50
$D_{N.G}$	Not applicable	Not applicable	Not applicable	Density of natural gas. The parameter was excluded from the monitoring.	☑

1.6 Parameters measured directly with instruments

Table 1.6 a

Parameter and instrumentation Information					
	PDD	Determined changes to the monitoring plan	MR	Verified	Conclusion and IRL
Parameter title	$FF_{project\ site,i,y}$	$FF_{project\ site,i,y}$	$FF_{project\ site,i,y}$ Quantity of natural gas consumed by reserve gas fired burners at the operating husk fired boiler #4 in the case of unforeseen or unexpected	Consistent	☑
Parameter ID (if available)	1	1	1	Consistent	☑
Data Unit	m^3_n/a	nm^3/mta	nm^3/mta	**Clarification Request #9** The audit team observed that the	CL

				parameter “Quantity of natural gas consumed by reserve gas fired burners at the operating husk fired boiler #4 in the case of unforeseen or unexpected” is aggregated monthly. Moreover, excel calculation model contains the monthly values. At the same time the MP envisages monitoring of the parameter yearly which is inconsistent with the actual situation. Please correct/clarify.	
Monitoring frequency (reading)	Continuously	Continuously, monthly aggregation	Not indicated.	**Corrective Action Request #7** The information regarding the information data flow from the raw data to monthly totals (including reading and recording frequency) for all measured parameter is not provided in the MR version 1.0. The cross-references to the monitoring scheme (monitoring points, including serial number, manufacturer model #) shall be presented to ensure transparency.	CAR
Monitoring frequency (recording)	during the year y	monthly aggregation	Not indicated.	See CAR above.	CAR
Calibration requirements	annually, according to the manufacturer’s recommendation	annually, according to the manufacturer’s recommendation	annually, according to the manufacturer’s recommendation	**Corrective Action Request #8** The gas flow meter is to be used as per the MP (MR version 1.0). However, the set of sensors (pressure, temperature and flow) is actually used for this purpose.	CAR

				Please provide any clarification. The tables 3.1 and 5.1 must be adjusted accordingly to reflect the measurement range and uncertainty level for each sensor. The calibration certificates are to be submitted to the verification team for review.	
Uncertainty level	1%	1%	Not indicated.	See CAR above	CAR
Measurement Principle (if applicable)	gas flow meter	gas flow meter	See CAR above	See CAR above	CAR
	Technical aspects				Conclusion and IRL
Instrument Type:	Gas flow, pressure and temperature sensors.				☑
Serial Number:	Pending a response to CAR#7 above.				CAR
Manufacturer Model Nr.:	Pending a response to CAR#7 above.				CAR
Specific Location:	Before the CHPP				☑
Measurement Range:	Pending a response to CAR#8 above.				CAR
Gaps in operating time of instrument :	Period: was operational during the whole monitoring period.				☑
	Default value used: not applicable				☑
	Justification: not applicable				☑
	QA/QC aspects				Conclusion and IRL
Source of data	Type: electronic data				☑
	Procedures: automatic recording				☑
	Implementation of procedure: not applicable				☑

	Responsibility: CHPP operator	☑
Archiving of raw data and protection measures	Measured parameters are continuously recorded and archived. **Corrective Action Request #9** The statement in the MR version 1.0 “Storage period of the data in electronic form is limited with three months, in paper form - unlimited.” is not applicable to the monitoring of the gas consumption and shall be adjusted to reflect the actual situation (section 3.3 of the MR version 1.0). **Forward Action Request #2** All the monitored data was available during the onsite visit. However, the procedure of redundancy and/or IT solution of data protection measures is to be implemented to ensure data protection.	CAR FAR
Data transfer and protection of input data for calculations	The conclusion is pending the responses to CAR#7 above.	CAR
	Quality of evidence	Conclusion and IRL
Completeness of data	The measurement of this parameter is performed on the continuous basis, therefore the data obtained in the relevant monitoring period can be considered as complete measured data. The data for the whole monitoring period was available for verification during onsite mission.	☑
Data verification	Consistency of raw data with calculation tool: The consistency has been spot checked on a random basis. No inconsistencies have been found.	☑
	Consistency of calculation tool with monitoring report: The data in the MR have been thoroughly checked against the data in the calculation tool – Excel calculation model as well as with the raw data. Both data sets are fully consistent.	☑
Crosscheck (if available)	Not applicable	☑

Industrie Service

Table 1.6 b

Parameter and instrumentation Information					
	PDD	Determined changes to the monitoring plan	MR	Verified	Conclusion and IRL
Parameter title	Not applicable.	$BF_{k,y,\ wet\ sold}$	$BF_{k,y,\ wet\ sold}$ Total quantity of sunflower seeds, which is sold to outside consumers	Consistent	☑
Parameter ID (if available)	Not applicable.	4	4	Consistent	☑
Data Unit	Not applicable.	t of wet matter	t of wet matter	Consistent.	CAR
Monitoring frequency (reading)	Not applicable.	monthly	Not indicated.	Conclusion is pending a response to CAR#7 above.	CAR
Monitoring frequency (recording)	Not applicable.	monthly	Not indicated.	Conclusion is pending a response to CAR#7 above	CAR
Calibration requirements	Not applicable.	Accuracy and conservativeness of obtained data is provided by certified factory laboratory. Laboratory equipment is subject to regular maintenance and calibration and in case of malfunction shall be immediately	Accuracy and conservativeness of obtained data is provided by certified factory laboratory. Laboratory equipment is subject to regular maintenance and calibration and in case of malfunction shall be immediately checked or replaced.	**Corrective Action Request #10** The parameter “Total quantity of sunflower seeds, which is sold to outside consumers” is monitored by using the automobile scales. The statement in the section D.1.5.of the MP (MR version 1.0) is not in compliance with the actual situation. Please correct/clarify.	CAR IRL 49

		checked or replaced.			
Uncertainty level	Not applicable.	Not indicated.	Not indicated.	Conclusion is pending a response to CAR#8 above	CAR
Measurement Principle (if applicable)	Not applicable.	Data according to bookkeeping of enterprise	Data according to bookkeeping of enterprise	Conclusion is pending a response to CAR#8 above	CAR
	Technical aspects				Conclusion and IRL
Instrument Type:	Truck scales				☑
Serial Number:	Pending a response to CAR#8 above.				CAR
Manufacturer Model Nr.:	Pending a response to CAR#8 above.				CAR
Specific Location:	At the territory of the enterprise.				☑
Measurement Range:	Pending a response to CAR#8 above.				CAR
Gaps in operating time of instrument :	Period: was operational during the whole monitoring period.				☑
	Default value used: not applicable				☑
	Justification: not applicable				☑
	QA/QC aspects				Conclusion and IRL
Source of data	Type: electronic data				☑
	Procedures: Each shipment is recorded by the operator to the electronic system.				☑ IRL 45
	Implementation of procedure: the procedure is fully implemented.				☑
	Responsibility: operator of the weigh station				☑

Archiving of raw data and protection measures	**Corrective Action Request #11** The information regarding the raw data recording and transfer for the parameter “total quantity of sunflower seeds, which is sold to outside consumers” is not provided in the MR version 1.0. Please also see FAR#2	CAR FAR
Data transfer and protection of input data for calculations	The conclusion is pending the responses to CAR#7 above.	CAR
	Quality of evidence	Conclusion and IRL
Completeness of data	The data obtained in the relevant monitoring period can be considered as complete measured data. All data was available for verification during onsite mission.	☑
Data verification	Consistency of raw data with calculation tool: **Corrective Action Request #12** The data for the parameter “total quantity of sunflower seeds, which is sold to outside consumers” within the monitoring period is to be provided to the verification team and included to the MR.	CAR
	Consistency of calculation tool with monitoring report: **Corrective Action Request #13** The current version of the calculation tool Excel calculation model does not contain the date for the parameter “Total quantity of sunflower seeds, which is sold to outside consumers”. The calculation model must be corrected. The data are to be included.	CAR
Crosscheck (if available)	Not applicable	☑

Table 1.6 c

Parameter and instrumentation Information					
	PDD	Determined changes to the monitoring plan	MR	Verified	Conclusion and IRL
Parameter title	EGy	EG_y	EG_y Quantity of net electricity, produced by project CHP during year y.	**Clarification Request #10** The audit team observed that the parameter “Quantity of net electricity, produced by project CHP” is aggregated monthly. Moreover, excel calculation model contains the monthly values. At the same time the MP envisages monitoring of the parameter yearly which is inconsistent with the actual situation. Please correct/clarify.	CL
Parameter ID (if available)	18	14	14	Consistent	☑
Data Unit	MWh/y	MW*h/year	MW*h/year	See CAR above.	CAR
Monitoring frequency (reading)	Continuously	Continuously, monthly aggregation	Continuously, monthly aggregation	Consistent	☑
Monitoring frequency (recording)	-	monthly aggregation	monthly aggregation	Consistent	☑
Calibration requirements	Power meters will be periodically calibrated according to the manufacturer’s	Power meters will be periodically calibrated according to the manufacturer’s recommendation	Every 6 years	Consistent	☑ IRL 54

	recommendation				
Uncertainty level	1%	low	low	Consistent	☑
Measurement Principle (if applicable)	Electricity meter.	Measurements according to electricity meters registration.	Measurements by electricity meters.	Consistent	☑
	Technical aspects				Conclusion and IRL
Instrument Type:	Two electricity meters				☑
Serial Number:	96904866 93927715				☑ IRL 54
Manufacturer Model Nr.:	ZMD405Cr44.0007c2s2 ZMD410Ctr44.0457s3				☑ IRL 54
Specific Location:					☑
Measurement Range:	Not applicable				
Gaps in operating time of instrument :	Period: no gaps				☑
	Default value used: Not applicable				☑
	Justification: Not applicable				☑
	QA/QC aspects				Conclusion and IRL
Source of data	Type: electronic data				☑
	Procedures: Automatic recording				☑
	Implementation of procedure: Not applicable				☑
	Responsibility: CHPP operator				☑

Archiving of raw data and protection measures	Measured parameters are continuously recorded and archived. **Corrective Action Request #14** The statement in the MR version 1.0 “Storage period of the data in electronic form is limited with three months, in paper form - unlimited.” is not applicable to the monitoring of the parameter “net electricity, produced by project CHP” and shall be adjusted to reflect the actual situation (section 3.3 of the MR version 1.0). Also see FAR #2	CAR FAR
Data transfer and protection of input data for calculations	The conclusion is pending the responses to CAR#7 above.	CAR
	Quality of evidence	Conclusion and IRL
Completeness of data	The measurement of this parameter is performed on the continuous basis, therefore the data obtained in the relevant monitoring period can be considered as complete measured data. The measuring equipment was operational during onsite visit. Data for the whole monitoring period was available for verification during onsite mission.	☑
Data verification	Consistency of raw data with calculation tool: The consistency has been spot checked on a random basis. No inconsistencies have been found.	☑
	Consistency of calculation tool with monitoring report: The data in the MR have been thoroughly checked against the data in the calculation tool – Excel calculation model. Both data sets are fully consistent.	☑
Crosscheck (if available)	Not applicable	

1.7 Parameters measured through sampling

Table 1.7 a

Sampling information					
	PDD	Determined changes to the monitoring plan	MR	Verified	Conclusion and IRL
Parameter title	NCV_{BR}	NCV_{BR}	NCV_{BR} Net calorific value of sunflower seeds husk	**Corrective Action Request #15** MP contains the formula 5 used for NCV_{BR} calculation. However, actually the monitored parameter is the net calorific value of wet biomass. This is inconsistent with the MP. MR and calculation model are to be adjusted accordingly.	CAR
Parameter ID (if available)	15	11	11	Consistent	☑
Data Unit	GJ⁄ton	GJ/t	GJ/t	Consistent	☑
Sampling frequency	Quarterly	Twice per year.	Twice per year.	Consistent	☑
Sampling point	-	-	Not described	**Corrective Action Request #16** The principle and methodology/standard for the net calorific value of sunflower seeds husk sampling are missing in the MR. Please adjust the documentation accordingly.	CAR
Uncertainty level	Low	Low	Low	Consistent	☑
	Technical aspects				Conclusion and IRL

Sampling Principle:	See CAR#16 above.	CAR
Methodology of Sampling:	See CAR#16 above.	CAR
Sample Analysed by:	“Eco-Standart Service”, LLC, Sevastopol laboratory # 1	☑ IRL 21, 22
Certification of Analyser/ Laboratory:	The certificate of the laboratory was provided to the audit team	☑ IRL 20
Methodology of Sample Analysis (if applicable)	Sample analysis is performed by accredited state laboratory	☑ IRL 20
Measurement Range:	Not applicable	☑
Gaps in sampling frequency	Period: no gaps	☑
	Default value used: Not applicable	☑
	Justification: Not applicable	☑
	QA/QC aspects	Conclusion and IRL
Source of data	Type: The certificates for the reporting period were available onsite.	☑ IRL 21, 22
	Procedures: as per internal procedures of state certified lab	☑
	Implementation of procedure: as per internal procedures of state certified lab	☑
	Responsibility: Conclusion is pending a response to CAR#14 above.	CAR
Archiving of raw data and protection measures	Conclusion is pending a response to CAR#7 above.	CAR
Data transfer and protection of input data for calculations	Conclusion is pending a response to CAR#7 above. Also see FAR#2.	CAR FAR
	Quality of evidence	Conclusion

		and IRL
Completeness of data	The data for the whole reporting period were available during onsite visit. The analysis was performed twice a year as per determined changes to the MP.	☑
Data verification	Consistency of raw data with calculation tool: **Corrective Action Request #17** The parameter "Net calorific value of sunflower seeds husk" is calculated as average of two values in the Excel calculation model. This is inconsistent with this the changed and determined MP. Please correct/clarify.	CAR
	Consistency of calculation tool with monitoring report: see CAR#15 above.	CAR
Crosscheck (if available)	Not applicable	☑

1.8 Parameters obtained through external sources and accounting data

Table 1.8 a

External sources and accounting information					
	PDD	Determined changes to the monitoring plan	MR	Verified	Conclusion and IRL
Parameter title	NCV_{ng}	NCV_{NG}	NCV_{NG} Net calorific value of natural gas	Consistent	☑
Parameter ID (if available)	14	10	10	Consistent	☑
Data Unit	GJ/nm^3	GJ/nm^3	GJ/nm^3	**Clarification Request #11** The data unit in the certificates from gas provider is $kcal/m^3$. This is	CL IRL 19

				not in compliance with the revised MP. At the same time the Excel calculation model includes the algorithm for values conversion. Please correct/clarify.	
	Technical aspects				Conclusion and IRL
Description of Data / Data Refers to:	Calorific value of gas from gas provider				☑ IRL 19
Date of Data:	18.10.2011				☑ IRL 19
Gaps in data	Period: not applicable				☑
	Default value used: not applicable				☑
	Justification: not applicable				☑
	QA/QC aspects				Conclusion and IRL
Source of data	Type: certificate from gas provider				☑
	Responsibility: **Corrective Action Request #18** The responsibility for the data acquisition for the parameter “Net calorific value of natural gas” is not stated in the MR version 1.0.				CAR
	Representativeness: parameter is monitored once a year as per the determined PDD				☑
Reliability of Data Source:	The official data from gas supplier company are used				☑
Is the Data up-to-date?	Yes				☑
Archiving of raw data and protection	Archiving of raw data is performed done in electronic form.				FAR

measures	See FAR#2	
Data transfer and protection of input data for calculations	The data are transferred manually to input data for calculations.	☑
	Quality of evidence	Conclusion and IRL
Completeness of data	The respective evidence (Certificate from gas supplier) was submitted to the TÜV SÜD assessment team at the on-site inspection for verification.	☑ IRL 19
Data verification	Consistency of raw data with calculation tool: See CAR#11 above.	CAR
	Consistency of calculation tool with monitoring report: See CAR#11 above.	CAR
Crosscheck (if available)	Not applicable	☑

1.9 Other parameters not included in the methodology/tool but included in the PDD

Not applicable: the JI project activity’s monitoring does not comprise any other parameters which are not included in the methodology/tool but included in the PDD.

2. Data Processing and ER calculation

Description of data processing from transferred data to final results in the calculation tool		
Step	Description	Conclusion and IRL
Consistency	**Corrective Action Request #19** The cross check and calculation of the parameter "total quantity of sunflower seeds husk, generated at the enterprise" based on the raw data were performed onsite on a random basis. The deviation 1.5% between the reported and calculated data was detected. The values for the present parameter within the reporting period shall be internally cross-checked and recalculated. The respective evidences are to be submitted to the assessment team. During onsite audit that the wrong value of the transfer coefficient was used for transformation of the measured steam quantity into heat. The calculations of the ERUs are to be corrected taking onto account the approved at the enterprise. The following statement in the section "3.4 Monitoring scheme" of the MR version 1.0 in not in line with the actual situation observed onsite by the assessment team: "For the quantitative evaluation of steam and condensate flows, measuring of their temperature, pressure and consumption ***is planned*** in order to obtain integrated values of heat from the heat meter. Accounting of electricity consumption for own needs and electricity sold to the grid with the green tariff or consumed from the grid ***is expected*** to be done by separate electrical meters working on accumulating principle." The respective amendments are to be made in the MR.	CAR
Calculation Tool description	**Corrective Action Request #20** The issuing date and revision number of the ERU calculation tool shall be presented in the MR and Excel calculation model to ensure transparency. The baseline and project emissions are wrongly named "baseline/project emission reductions" throughout the text of the MR version 1.0 and excel calculation model.	CAR
Elimination of not plausible data (if applicable)	Not applicable	☑
Transformation from useable data to input	The transformation from useable data to input data for further calculation of ERUs is performed manually. The internal Order about the appointment of responsible persons for information capture in	FAR

data for further calculation (if applicalbe)	the framework of JI project was presented to the assessment team for review. It establishes the responsibilities for raw data aggregation and input data calculation. Please also see FAR#1 above.	IRL 10
Ex-ante data	See CAR#6 above	CAR
Default parameter	See CAR#6 above	CAR
Formulae check	**Corrective Action Request #21** The algorithm for “Dry biomass consumption Wx”, “Wet biomass consumption BFk,y” , “Methane emissions avoidance from biomass landfilling” in the Excel model does not correspond to those the monitoring plan. The Excel calculation model shall be corrected in order to be in full compliance with the MP (including symbols and abbreviations).	CAR
Rounding functions	No specific rounding functions have been used. In the data and calculation sheets rounding has been done according to the excel procedures. The values of ERUs, baseline and project emissions were expressed as integral numbers.	☑
Calculation tool changes and protection measures	There are no changes in the tool to previous calculations. The calculation Excel model is without any protection. However, no errors have been found.	☑
Reported data	**Corrective Action Request #22** The inconsistencies between the monthly data in the MR version 01 and Excel calculation model for the following parameters are to be eliminated: Moisture (W), % Wet biomass consumption BFk,y, t Dry biomass consumption Wx, t	CAR

3. Additional assessment

3.1 Internal Review

Description and performance of internal review		
	Description	Conclusion and IRL
Procedure	The procedure for internal review of data consistency and correctness of data in the Monitoring Report is the not established at the enterprise. However, it is actually performed by persons responsible for raw data aggregation (the internal Order was submitted to the verification team during the site visit, IRL 10). This was also confirmed by onsite interviews. See CAR#4 and FAR#1.	CAR FAR
Documentation	See CAR#4 and FAR#1	CAR, FAR
Responsibilities	See CAR#4 and FAR#1	CAR, FAR

3.2 Peculiarities

Description of Peculiarities and unexpected Daily Events during the verification period		
	Description	Conclusion and IRL
Performance	**Corrective Action Request #23** There is no summary of the main events (operation and stops of the main the equipment and instruments) during the 2nd monitoring period in the MR version 1.0.The MR shall be adjusted accordingly.	CAR
Documentation	All repair works as well as unexpected equipment stops are documented in the schedule of repair works and log of performed maintenance works. These documents were available to the verification team during onsite inspection	IRL 43, 44
Measures	See CAR#23 above.	CAR

3.3 Further additional requirements

Description of additional requirements to be checked		
	Description	Conclusion and IRL
Not applicable	Not applicable	☑

3.4 Data Reporting

Description of the Monitoring Report		
	Comments and Results	Conclusion and IRL
Compliance with UNFCCC regulations	The published Monitoring Report was assessed based on the monitoring plan in the registered PDD (available on the UNFCCC web-site http://ji.unfccc.int/JIITLProject/DB/721YYVG1S3PMXJ8LT4BLAN5796NQEU/details) and the determined changes to the initial monitoring plan stated in the final version of the Monitoring Report for the period 27/04./2009 – 31/12/2010 (available on official web-site of the National Electronic Registry of Anthropogenic Emissions and Absorption of Greenhouse Gases of Ukraine http://www.carbonunitsregistry.gov.ua/en/publication/content/904.htm) The verification period is correctly stated in the Monitoring Report version 1.0. **Corrective Action Request #24** The MR version 1.0 states that “establishment of baseline scenario and monitoring plan is done in compliance with the approved Baseline and Monitoring Methodology ACM0006, version 11.1.02, approved by the Executive Board of CDM at the 17th of December 2010.” (chapter 1.2, 3.1) However, it is clearly indicated in the chapter 3.5 that ERUs were calculated in accordance with the changes to the monitoring plan determined by Bureau Veritas Holding SAS within the previous verification (Verification Report No. UKRAINE-VER/0066/2009 “Utilization of sunflower seeds husk for steam and power production at the oil extraction plant OJSC “Kirovogradoliya” dated 20/04/2011). The cross-reference to Annex 2 “changes to the monitoring plan” is provided in the section 3.5 of the MR.	CAR

	At the same time Annex 2 contains only Monitoring plan. MR shall be revised accordingly.	
Completeness and Transparency	**Corrective Action Request #25** There is no comparative analysis of the ERUs achieved during the monitoring period with the ones stated in the determined PDD indicating the reason of noncompliance. MR shall be adjusted accordingly.	CAR
Correctness	See CAR#24 above.	CAR

4. Compilation and Resolutions of CARs, CLs and FARs

Corrective Action Requests by audit team			
	Comments and Results	Ref	Conclusion and IRL
Issue	**Corrective Action Request #1** The actual monitoring scheme does not correspond to the scheme included in the MR version 1.0: - electrical power metering does not correspond to the scheme included in the MR version 1.0 - the symbol of flow meter (FE) of heat meter unit No5 is absent in the scheme - the pressure measuring sensor is shown instead of flow meter for the heat meter unit No17. It was observed onsite that installed at Kirovogradoliya turbine is the turbine with counter pressure. However, it is indicated in the MR that the turbine type is condensing one. This inconsistency shall be corrected.	1.1	IRL 70
Response	The monitoring scheme has been changed according to the real monitoring practice as		

	reflected by the verification team conclusion. The name of turbine has been checked and corrected throughout MR.		
Assessment	The corrected MR version 2.0 was checked. The final version was adjusted to reflect the situation observed by the assessment team during the site visit. The issue is closed.		
Issue	**Corrective Action Request #2** There are two contradictory statements in the section 1.1 of the MR version 1.0: - All equipment installed during the project activity on the enterprise has been put into operation according to PDD version 2 (12 February 2008) - Project starting date according to the PDD of the JI project was December 2007. However, due to the logistical and financial problems at the company the official project start was delayed till the 27th of April, 2009. There is no information regarding the status of project realization and measures implemented in the framework of the project (including special cases, maintenance time) during the 2nd monitoring period in the MR version 01. Corresponding correction are to be made in the MR.	1.1	IRL 09, 11, 70
Response	The unconformities within MR have been removed and appropriate expressions have been corrected to ensure clear understanding of text. Information on measures and key events at the enterprise during monitoring period have been added in separate Table 1.1 of MR.		
Assessment	The statements in MR version 2.0 are fully consistent with the actual situation observed onsite. The information regarding the status of project realization and measures implemented in the framework of the project during the monitoring period (stated in the Table 1.1 of MR version 2.0) is in compliance with the Certificate about nonworking days of the enterprise and Acceptance certificate received onsite.		
Issue	**Corrective Action Request #3** The PP form the Host country was changed. Provide explanation and documentary evidence regarding change of the company name. The MR version 01 contains both names Public Joint Stock Company “Kirovogradoliya” and	1.2	IRL 56, 70

	Open Joint Stock Company “Kirovogradoliya”. This must be adjusted in accordance with the actual situation observed onsite. The Project participant from the Appendix 1 countries is not indicated in the MR. MR shall be corrected accordingly.		
Response	The name of project participant is presented correctly. Both names OJSC “Kirovogradoliya” and PJSC “Kirovogradoliya” are present in MR to prevent changes in registered JI project unique name and approved internal methodologies when old PP name has been valid. The document which confirms the renaming of OJSC into PJSC has been provided to verification team. The Appendix 1 Party and all other Parties involved in JI project activity is stated in Section 2 of Monitoring Report.		
Assessment	The corrected MR version 2.0 as well as Charter of PJSC “Kirovogradoliya” were checked. The old name OJSC “Kirovogradoliya” is only mentioned in determined MP and the documents tittles approved during the previous monitoring period. The full name of the project participant from the Appendix 1 countries INERCO TRADE S.A. is indicated in the final MR, which is in line with LoA issued by the DFP of Switzerland available on the web-site: http://ji.unfccc.int/JIITLProject/DB/721YYVG1S3PMXJ8LT4BLAN5796NQEU/details		
Issue	**Corrective Action Request #4** It is stated in the MR version 1.0 that the specialists of OJSC “Kirovogradoliya” will prepare all necessary reports for GHG emission reduction calculation and verification performance and the specialists of “Biomass-Carbon”, LLC will review prepared reports. Clarify who is the appointed project manager from Kirovogradoliya responsible for preparation reports as per determined PDD.	1.2	IRL 10, 70
Response	The overall responsibility of data collection, preparation, storage, keeping, archiving and submission to JI project developer is carried out by Energy Engineer of the Chief Power Engineer Department Mrs. Dianova L.N. Deputy Director on Production Mr. Lazarevich D.A. performs overall coordination of verification and monitoring process and cross-checking of monitoring values. The list of the appointed responsible persons for monitoring data collection is presented in Table D.1.3 of MP. Additionally data flow scheme (Section D.3 of Monitoring Plan, Figure D.3.1) provides full information on responsibilities and functions of key personnel involved in the JI project monitoring.		

Assessment	The key responsibilities for monitoring data collection at the enterprise were clearly and transparently presented in the MR version 2.0. The management structure was incorporated in the Revised Monitoring plan (see Figure D.3.1 of the ANNEX 2 to the MR version 2.0). Data flow scheme (distribution of responsibilities) is also confirmed by the internal order approved at the enterprise, which was available for review dung the onsite mission. The proposed revision is in line with *Determination and verification manual version 01* as the proposed revision improves the accuracy and applicability of information collected compared to the previous revision of the MP (determined by Bureau Veritas Certification Holding SAS in the framework of verification for the period 27/04/2009 – 31/12/2010, available on the web-site http://ji.unfccc.int/JIITLProject/DB/721YYVG1S3PMXJ8LT4BLAN5796NQEU/details).		
Issue	**Corrective Action Request #5** The Excel calculation model, as well as MR, contains invalid values of the coefficients of CO_2 emission for the Ukrainian grid (used for baseline and project emission calculation). MR and ERUs calculation shall be adjusted accordingly. The evidence regarding the class of electricity consumption is to be provided to the assessment team.	1.5	IRL 55, 70, 71
Response	The MP, MR and calculation Excel model have been adjusted with right grid emission factors. For baseline production grid emission factor is used and for project – consumption grid emission factor is used thus making a difference between two grid emission factors. The electricity consumption class, which is determined according to the NERC Order # 1052 dated 13/08/98 (http://www.cogeneration.com.ua/ru/analytics/legislative-regulation/nkre/N-1052__13-08-98/) (official electronic form is also provided to verification team). According to the p. 3.2 of the mentioned Order the project owner is considered as 1-st class electricity consumption enterprise (determined on the basis of voltage value of 35 kV at the electricity selling “entrance points” (buses) of enterprise). So grid emission factor for the 1-st class of electricity consumption has been chosen.		
Assessment	The MR version 2.0 and Excel calculation model 2.0 were checked against the SEIA Order #75. The assessment team can confirm that the correct values of coefficients of CO_2 emission for the Ukrainian grid were considered in the ERUs calculations. The revisions of the MP are appropriately justified by the project participants and described in the ANNEX 3 to the MR version 2.0 “Changes to the monitoring plan”.		
Issue	**Corrective Action Request #6**	1.5	IRL 70-72

	The applied values of the parameters: - Fraction of the methane captured at the landfill and flared, combusted or used in another manner - Decay rate for the sunflower seeds husk - Methane correction factor - Sunflower seeds husk fraction of degradable organic carbon (by weight) - Model correction factor - Fraction of methane in the landfill gas - Fraction of degradable organic carbon that can decompose - Quantity of sunflower seeds husk avoided to landfilling during year x. are missing in the MR version 1.0 as well in the excel calculation model. Thus the reporting does not comply with the determined changes to the MP. This shall be clarified and MR shall be corrected in order to comply with the MP.		
Response	Appropriate constant values have been added to the monitoring report in Section D.1.1.4. Additionally all constant values used in landfill model have been reflected in emission reduction spreadsheets in MR and Excel calculation.		
Assessment	The values for all mentioned parameters were added to the MR version 2.0 as well as Excel calculation model version 2.0. GHG emissions calculation model was provided to the verification team for review in a separate excel file “HUSK-annual”. All the applied values were checked against the determined PDD and determined MP and considered as valid.		
Issue	**Corrective Action Request #7** The information regarding the information data flow from the raw data to monthly totals (including reading and recording frequency) for all measured parameter is not provided in the MR version 1.0. The cross-references to the monitoring scheme (monitoring points, including serial number, manufacturer model #) shall be presented to ensure transparency.	1.6 a	IRL 70, 78-81
Response	Data flow scheme has been provided in Section D.3 of MP. The cross references to the monitoring scheme for all measured parameters is provided in Table 5.1. Factory numbers and parameters of measurement instruments are presented in Table 5.1. Other specific parameters which have not been included in text of monitoring report are available at		

	passports of equipment which have been provided to verification team.		
Assessment	The information regarding the data flow from the raw data to monthly totals for the monitored parameters was added to the MR version 2.0. and incorporated in the Revised Monitoring plan (see Figure D.3.1 of the ANNEX 2 to the MR version 2.0). The determination opinion of the assessment team regarding the revisions of the MP is presented in the section 3.3 of the present verification report. The cross-references to the monitoring scheme (monitoring points, including serial number, manufacturer model #) were correctly included in the MR version 2.0. The serial number, manufacturer model number, type, accuracy rate and information regarding equipment calibration was corrected in accordance with equipment passports and calibration certificates, which were provided to the verification team.		
Issue	**Corrective Action Request #8** The gas flow meter is to be used as per the MP (MR version 1.0). However, the set of sensors (pressure, temperature and flow) is actually used for this purpose. Please provide any clarification. The tables 3.1 and 5.1 must be adjusted accordingly to reflect the measurement range and uncertainty level for each sensor. The calibration certificates are to be submitted to the verification team for review.	1.6 a	IRL 70, 79
Response	All necessary certificates have been provided to verification team. Table 3.1 has been united with Table 5.1 with the indication of all necessary information on measurement range and accuracy.		
Assessment	All equipment used for natural gas volume monitoring was indicated in the Table 5.1 of the MR version 2.0. The evidences about natural gas accounting point calibration were submitted to the assessment team. The issue is closed based on due amendments made in the MR and documentary evidenced provided to the auditors.		
Issue	**Corrective Action Request #9** The statement in the MR version 1.0 “Storage period of the data in electronic form is limited with three months, in paper form - unlimited.” is not applicable to the monitoring of the gas consumption and shall be adjusted to reflect the actual situation (section 3.3 of the MR version 1.0).	1.6 a	IRL 69, 70
Response	All monitoring parameters are to be kept for two years after the last transfer of ERUs for the		

	JI project. The appropriate adjustments have been introduced into monitoring report.		
Assessment	The item “3.3. Aggregation and processing of measured values” in the MR version 2.0 was updated to be in line with the MP and the actual situation observed during the site visit. The approved Oder about monitored data storage was provided to the verification team.		
Issue	**Corrective Action Request #10** The parameter “Total quantity of sunflower seeds, which is sold to outside consumers” is monitored by using the automobile scales. The statement in the section D.1.5. of the MP (MR version 1.0) is not in compliance with the actual situation. Please correct/clarify.	1.6 b	IRL 07, 08, 64-66
Response	The appropriate corrections have been made in MR. The automobile scales has been added in the list of monitoring equipment. Passports and calibration certificates are provided to verification team. Raw data sample in form of bills of registered transport vehicles has been provided to verification team.		
Assessment	The table 5.1 in the MR version 2.0 was updated to contain the automobile scales as well as information regarding their calibration. The data stated in the MR were evidenced by passports, calibration certificate and raw data sample in form of bills. The changes regarding parameter “Total quantity of sunflower seeds husk, which is sold to outside consumers” monitoring were made in the MP. The respective justification was provided in the ANNEX 3 to the MR version 2.0 “Changes to the monitoring plan”. The determination opinion of the assessment team regarding the revisions of the MP is presented in the section 3.3 of the present verification report. The issue is closed.		
Issue	**Corrective Action Request #11** The information regarding the raw data recording and transfer for the parameter “total quantity of sunflower seeds, which is sold to outside consumers” is not provided in the MR version 1.0.	1.6 b	IRL 70
Response	The description of recording and transfer of raw data is added in the end of Section D.1.1.2 of MP. The information of data flow is also included in the data flow scheme (Section D.3).		
Assessment	The information regarding the data flow for the parameter “total quantity of sunflower seeds, which is sold to outside consumers” was added to the MR version 2.0. and incorporated in the Revised Monitoring plan (see Figure D.3.1 of the ANNEX 2 to the MR version 2.0). The determination opinion of the assessment team regarding the revisions of the MP is presented in the section 3.3 of the present verification report. The issue is closed.		

Issue	**Corrective Action Request #12** The data for the parameter "total quantity of sunflower seeds, which is sold to outside consumers" within the monitoring period is to be provided to the verification team and included to the MR.	1.6 b	IRL 07, 08, 45, 71, 82, 83
Response	**Response #1** Raw data sample in form of bills of registered transport vehicles has been provided to verification team. Monthly aggregated data is provided in electronic standard Excel form # 7. **Response #2** Data in Excel calculation and monitoring report has been corrected according to the value provided in raw data sample transport bill for November 2011.		
Assessment	**Conclusion of response #1** The raw data sample in form of bills was submitted to the verification team for review. However, the total amount of "sunflower seeds, which is sold to outside consumers" for November 2011 indicated in the in the electronic standard Excel form # 7 and ERUs calculation model version 2.0 differs form to the amount stated in the bills of registered transport vehicles for this month. Please clarify the reason of this discrepancy. **Conclusion of response #2** Inconsistency between the MR, ERUs calculation model and raw data was eliminated. The issue was closed based on due corrections made in the MR version 3.0 and ERUs calculations version 3.0.		
Issue	**Corrective Action Request #13** The current version of the calculation tool Excel calculation model does not contain the date for the parameter "Total quantity of sunflower seeds, which is sold to outside consumers". The calculation model must be corrected. The data are to be included.	1.6 b	IRL 07, 08, 71, 82, 83
Response	**Response #1** The requested data and other necessary intermediate data have been added to the calculation tool. **Response #2** Data for November 2011 has been corrected in Excel calculation and monitoring report in		

	accordance with the value available in “bill of registered transport vehicles” for this month.		
Assessment	**Conclusion of response #1** Excel calculation model was corrected to be in line with the MP. However, the data for November 2011 in not consistent with the data in the” bills of registered transport vehicles”. **Conclusion of response #2** Inconsistency between the MR, ERUs calculation model and raw data was eliminated. The issue was closed based on due corrections made in the MR version 3.0 and ERUs calculations version 3.0.		
Issue	**Corrective Action Request #14** The statement in the MR version 1.0 “Storage period of the data in electronic form is limited with three months, in paper form - unlimited.” is not applicable to the monitoring of the parameter “net electricity, produced by project CHP” and shall be adjusted to reflect the actual situation (section 3.3 of the MR version 1.0).	1.6 c	IRL 69, 70
Response	All monitoring parameters are to be kept for two years after the ending of crediting period. The appropriate adjustments have been introduced into monitoring report.		
Assessment	The item “3.3. Aggregation and processing of measured values” in the MR version 2.0 was updated to be in line with the MP and the actual situation observed during the site visit. The approved Oder about monitored data storage was provided to the verification team. The issue is closed.		
Issue	**Corrective Action Request #15** MP contains the formula 5 used for NCV_{BR} calculation. However, actually the monitored parameter is the net calorific value of wet biomass. This is inconsistent with the MP. MR and calculation model are to be adjusted accordingly.	1.7 a	IRL 70, 71
Response	The appropriate adjustments has been introduced in MR (Table 1.1.1.) and Excel calculation		
Assessment	The following changes to the MP were proposed for determination by the PPs: net calorific value of wet sunflower seeds husk (NCVwet) was indicated as monitored parameter. The average annual value between two annually measured values is determined. The determination opinion of the assessment team regarding the revisions of the MP is		

	presented in the section 3.3 of the present verification report. The issue is closed.		
Issue	**Corrective Action Request #16** The principle and methodology/standard for the net calorific value of sunflower seeds husk sampling are missing in the MR. Please adjust the documentation accordingly.	1.7 a	IRL 71
Response	The husk sampling for NCV determination is done by the personnel of certified laboratory of the project participant making an analysis according to the own internal procedures (Table D.1.1.1).		
Assessment	The following changes to the MP were proposed for determination by the PPs: the principle of sampling for the parameter “net calorific value of sunflower seeds” husk was included in the MP (Annex 2 of the MR version 2.0), which reflects the actual situation observed onsite. The respective justification was added included in the Annex 3 to the MR version 2.0. The determination opinion of the assessment team regarding the revisions of the MP is presented in the section 3.3 of the present verification report. The issue is closed.		
Issue	**Corrective Action Request #17** The parameter “Net calorific value of sunflower seeds husk” is calculated as average of two values in the Excel calculation model. This is inconsistent with this the changed and determined MP. Please correct/clarify.	1.7 a	IRL 71
Response	Monitoring plan envisage the NCV determination twice per year by the certified laboratory. Then average annual value is determined for the GHG emission reduction calculation throughout the monitoring period. Excel calculation, MR and MP have been adjusted accordingly.		
Assessment	The following changes to the MP were proposed for determination by the PPs: NCV is sampling and determination twice per year as well as average annual value using for the GHG emission reduction calculation is envisaged by the updated MP. (Annex 2 of the MR version 2.0), which reflects the actual situation observed onsite. The respective justification was added included in the Annex 3 to the MR version 2.0. The determination opinion of the assessment team regarding the revisions of the MP is presented in the section 3.3 of the present verification report. The issue is closed.		
Issue	**Corrective Action Request #18**	1.8 a	IRL 10, 70

	The responsibility for the data acquisition for the parameter “Net calorific value of natural gas” is not stated in the MR version 1.0.		
Response	Mrs Dianova L.N., Energy Engineer of the enterprise is responsible person for the acquisition of natural gas quality certificates as stated in MR Table D.1.1.1.		
Assessment	The responsibility for the data acquisition for the parameter “Net calorific value of natural gas” was indicated in the MR version 2.0 and confirmed by the internal order approved at the enterprise. The corresponding changes to the MP were incorporated in the MR version 2.0 and submitted to the verification for review. The determination opinion of the assessment team regarding the revisions of the MP is presented in the section 3.3 of the present verification report. The issue is closed.		
Issue	**Corrective Action Request #19** The cross check and calculation of the parameter “total quantity of sunflower seeds husk, generated at the enterprise” based on the raw data were performed onsite on a random basis. The deviation 1.5% between the reported and calculated data was detected. The values for the present parameter within the reporting period shall be internally cross-checked and recalculated. The respective evidences are to be submitted to the assessment team. During onsite audit that the wrong value of the transfer coefficient was used for transformation of the measured steam quantity into heat. The calculations of the ERUs are to be corrected taking onto account the approved at the enterprise. The following statement in the section “3.4 Monitoring scheme” of the MR version 1.0 in not in line with the actual situation observed onsite by the assessment team: “For the quantitative evaluation of steam and condensate flows, measuring of their temperature, pressure and consumption ***is planned*** in order to obtain integrated values of heat from the heat meter. Accounting of electricity consumption for own needs and electricity sold to the grid with the green tariff or consumed from the grid ***is expected*** to be done by separate electrical meters working on accumulating principle.” The respective amendments are to be made in the MR.	2	IRL 70, 74, 75
Response	The parameter was recalculated according to standard enterprise procedures which is confirmed by the official answer from responsible monitoring officer at the enterprise. The		

	raw data sampling have been provided to verification team to ensure transparency. The transfer coefficient for production heat Qy has been revised and corrected accordingly in Excel calculation and monitoring report. The unconformity in the text of monitoring report has been eliminated.		
Assessment	The raw data for three random days were checked by the verification team. The rest daily values within the monitoring period were checked and validated by the deputy director of production. This is confirmed by the official certificate from the enterprise. The section “3.4 Monitoring scheme” of the MR version 2.0 was amendments to eliminate unconformity revealed during onsite mission.		
Issue	**Corrective Action Request #20** The issuing date and revision number of the ERU calculation tool shall be presented in the MR and Excel calculation model to ensure transparency. The baseline and project emissions are wrongly named “baseline/project emission reductions” throughout the text of the MR version 1.0 and excel calculation model.	2	
Response	The Excel file has been corrected following the request for correction. The version has been changed from 1.0 to 2.0.		
Assessment	The verifier team has reviewed the revised MR version 2.0: requested information was found is included, spreadsheets were renamed accordingly.		
Issue	**Corrective Action Request #21** The algorithm for “Dry biomass consumption Wx”, “Wet biomass consumption BFk,y” , “Methane emissions avoidance from biomass landfilling” in the Excel model does not correspond to those the monitoring plan. The Excel calculation model shall be corrected in order to be in full compliance with the MP (including symbols and abbreviations).	2	IRL 70-72
Response	The Excel file has been corrected to be in full compliance with MP and MR. The version has been changed from 1.0 to 2.0.		
Assessment	The Excel calculation model version 2.0 was checked. The corrected version is in compliance with the MP. The detailed calculation of the GHG emissions from the source “Methane emissions avoidance from biomass landfilling” was submitted in the form of separate excel file “HUSK annual” and referenced in the MR version 2.0. The calculations are in line with the MP.		

Issue	**Corrective Action Request #22** The inconsistencies between the monthly data in the MR version 01 and Excel calculation model for the following parameters are to be eliminated: Moisture (W), % Wet biomass consumption BFk,y, t Dry biomass consumption Wx, t.	2	IRL 70, 71, 76
Response	The raw monthly data for moisture and wet biomass consumption has been provided in separate electronic spreadsheets # 8 and # 18. Dry biomass consumption is obtained on the basis of recalculation on dry mass using wet biomass consumption and moisture and is excluded from the list of parameters due to absence of reasonability of its separate determination. Primary data at the enterprise for wet biomass consumption and moisture is obtained on the daily basis in the enterprise laboratory according to internal technical procedures 2 times per working shift (4 times per day) and fixed in the separate monitoring journals in paper form. The data for any day could be requested and used for recalculation if necessary. The sampling of data has been provided to verification team. The Excel calculation has been corrected accordingly.		
Assessment	The parameter “Dry biomass consumption” was excluded from the monitoring as per the changes to the MP (Annex 2 to the MR version 2.0). The determination opinion of the assessment team regarding the revisions of the MP is presented in the section 3.3 of the present verification report. The issue is closed. The primary data for the parameter “Wet biomass consumption” was submitted to the verification team. The inconsistency between the monthly data in the MR version 2.0 and Excel calculation model 2.0 was eliminated.		
Issue	**Corrective Action Request #23** There is no summary of the main events (operation and stops of the main the equipment and instruments) during the 2nd monitoring period in the MR version 1.0.The MR shall be adjusted accordingly.	3.2	IRL 09, 11, 70
Response	The summary regarding operation of main equipment included in project boundaries (three boilers and a counter pressure turbine) is added in Section 1.1 Table 1.1. The instruments and meters calibration and check-up summary with the indication of dates in format DD.MM.YYYY is presented in Table 5.1.		

Assessment	The summary of the main events during the monitoring period (stated in the Table 1.1 of MR version 2.0) is in compliance with the Certificate about nonworking days of the enterprise and Acceptance certificate received onsite. The issue is closed based on due amendments made in the MR version 2.0.		
Issue	**Corrective Action Request #24** The MR version 1.0 states that “establishment of baseline scenario and monitoring plan is done in compliance with the approved Baseline and Monitoring Methodology ACM0006, version 11.1.02, approved by the Executive Board of CDM at the 17th of December 2010.” (chapter 1.2, 3.1) However, it is clearly indicated in the chapter 3.5 that ERUs were calculated in accordance with the changes to the monitoring plan determined by Bureau Veritas Holding SAS within the previous verification (Verification Report No. UKRAINE-VER/0066/2009 “Utilization of sunflower seeds husk for steam and power production at the oil extraction plant OJSC “Kirovogradoliya” dated 20/04/2011). The cross-reference to Annex 2 “changes to the monitoring plan” is provided in the section 3.5 of the MR. At the same time Annex 2 contains only Monitoring plan. MR shall be revised accordingly.	3.4	IRL 70
Response	All necessary corrections in Section 1.2, 3.1, 3.5 and Annex 2 have been made to assure conformity of monitoring procedure. The statement about changes to the monitoring plan within the previous verification MR version was added to the section “1.2 Methodology used for project activity” of the MR version 2.0. The issue is closed based on due amendments made in the MR version 2.0.		
Assessment	The inconsistencies were eliminated in the updated MR version 2.0. Correct reference to the approved consolidated baseline methodology ACM0006 version 6 was added, which is in line with MP.		
Issue	**Corrective Action Request #25** There is no comparative analysis of the ERUs achieved during the monitoring period with the ones stated in the determined PDD indicating the reason of noncompliance. MR shall be adjusted accordingly.	3.4	IRL 70
Response	The comparative analysis has been added in Section 1.1. of MR.		

Assessment	The amendments were made in the section “1.1 Brief project description” of the MR 2.0. The comparative analysis clearly justifies the difference of emission reductions estimated in the PDD and calculated according to real data from enterprise within the monitoring period.		
Clarification Requests by audit team			
	Comments and Results	Ref	Conclusion and IRL
Issue	**Clarification Request #1**: Provide commissioning acts for steam sunflower seeds husk fired boilers and steam turbine. Provide details of technical specification of equipment, including capacity, manufacturer, commissioning date, serial number. The following statement in the MR version 1.0 shall be clarified: “CHPP capacity is 1.7 $MW_{el.}$ + 26.7 MW_{th}”. (p.2, chapter 1.1). It is stated in the MR version 1.0 that “...project participants in compliance with ... latest “materiality” concept decided to use JI specific approach”. Please clarify what is meant under "materiality concept” and how this concept is applicable to the project monitoring.	1.1	IRL 70, 77
Response	The commissioning acts are provided to verification team. The misunderstanding is the statement has been revealed and eliminated. The Materiality concept does not establish rules regarding choosing procedure of whether JI project should be developed in frames of JI specific approach, approved CDM methodology approach or approach based on methodologies combination. In the materiality concept it states that “...4. In preparing the verification of a project’s reductions of anthropogenic emissions by sources or enhancements of anthropogenic removals by sinks, the AIE shall assess whether the monitoring report prepared by the project participant and all its supporting data and other information provide sufficient support for the verification.” The mentioning of materiality concept in monitoring report is done with purpose to indicate that this concept may be applied to current monitoring if necessary. To eliminate confusion in the interpretation the “materiality concept” wording has been deleted in the sentence mentioned by verification team.		
Assessment	The issue is closed based on due amendments made in the MR version 2.0, clarifications provided by the PP and commissioning acts submitted to the assessment team.		

Issue	**Clarification Request #2:** The contract on electricity supply shall be submitted to the verification team.	1.1	IRL 67
Response	The contract has been provided to verification team		
Assessment	The contract was checked by the verification team. The issue is closed.		
Issue	**Clarification Request #3** Please, submit the documentary evidences of the conducted trainings of key personal involved in JI project maintenance and data monitoring (within the reporting period).	1.3	IRL 68
Response	The official document from enterprise regarding training of personnel involved in JI project maintenance has been provided to verification team		
Assessment	The conducted trainings were evidenced by the respective protocol. The issue is closed.		
Issue	**Clarification Request #4** It was observed onsite that the following parameters $EC_{PJ, y}$, $BF_{k,y, wet inlet}$, W, Q_y were calculated in accordance with the internally approved methodologies : - "Methodology for the assessment of the electricity consumption for the CHPP own needs for the monitoring on the Joint Implementation project within the Kyoto protocol scope "Sunflower seeds husk utilization for steam and electricity production at the OJSC "Kirovogradoliya", approved 4 January 2009" within the reporting period. - "Methodology of sunflower seeds husk quantity calculation, which is supplied on the storage site (for further combustion in boilers) for the monitoring on the Joint Implementation project within the Kyoto protocol scope "Sunflower seeds husk utilization for steam and electricity production at the OJSC "Kirovogradoliya" approved at 4th of January 2009." - "Methodology of husk moisture content determination, approved 4th of January 2009" - "Methodology for the assessment of the heat consumption for the production needs for the monitoring on the Joint Implementation project within the Kyoto protocol scope "Sunflower seeds husk utilization for steam and electricity production at the OJSC "Kirovogradoliya", approved 4 January 2009" Please clarify is this is in compliance with the registered monitoring plan and provide respective evidences.	1.5	IRL 24-28
Response	Using of mentioned methodologies is in full compliance with registered (verified) monitoring		

	plan for the first verification done by Bureau Veritas Holding SAS within the previous verification (Verification Report No. UKRAINE-VER/0066/2009 “Utilization of sunflower seeds husk for steam and power production at the oil extraction plant OJSC “Kirovogradoliya” dated 20/04/2011). This is stated in the Section 1.2 of current Monitoring Report v. 2.0. All methodologies used in calculation of intermediate parameters according to real business practice are provided to verification team.		
Assessment	The methodologies approved at the enterprise were submitted to the verification team for review. The compliance of the methodologies with the determined changes (determination performed during the previous verification - Verification Report No. UKRAINE-VER/0066/2009 “Utilization of sunflower seeds husk for steam and power production at the oil extraction plant OJSC “Kirovogradoliya” dated 20/04/2011) was checked and confirmed by the verification team.		
Issue	**Clarification Request #5** It was observed onsite that the parameter “total quantity of oil produced by the enterprise for appropriate period” is not measured directly but calculated based on other monitored parameters. However, in accordance with the registered MP it shall be measured. Please correct/clarify.	1.5	IRL 63
Response	All necessary corrections have been made in MP and MR (Tables 5.1 and D.1.1.1).		
Assessment	The changes to the MP (Annex 2 to the MR version 2.0) were made to eliminate nonconformity. The determination opinion of the assessment team regarding the revisions of the MP is presented in the section 3.3 of the present verification report. The passport of the equipment used for the parameter monitoring was provided to the verification team and data about its calibration were included in the Table 5.1 of the MR version 2.0. The issue is closed.		
Issue	**Clarification Request #6** The parameter $EF_{CO2,BL,heat,i}$ repeats the parameter $EF_{CO2,FF,NG}$. Please clarify which one is used for ERUs calculation.	1.5	IRL 70
Response	Monitoring plan has been adjusted in order to save conformity. Only one parameter with one marking $EF_{CO2,BL,heat,i}$.is used and renamed as $EF_{CO2\ NG}$ to ensure consistency of baseline and project scenario emissions.		
Assessment	The parameter “$EF_{CO2,BL,heat,i}$” was excluded from the monitoring as per the changes to the		

	MP (Annex 2 to the MR version 2.0). The determination opinion of the assessment team regarding the revisions of the MP is presented in the section 3.3 of the present verification report. The issue is closed.		
Issue	**Clarification Request #7** It was observed onsite that the parameter “Quantity of sunflower seeds husk avoided to landfilling during year x” is not estimated as per the registered MP directly but calculated based on other monitored parameters. Please correct/clarify.	1.5	IRL 24, 70
Response	Mentioned parameter Wx “Quantity of sunflower seeds husk avoided to landfilling during year x” has been excluded out from calculation due to absence of reasonability of its separate determination (see also CAR # 22). It is equal to BFk,y. This parameter is determined instrumentally by direct measurements. The “Amount of wet sunflower seeds husk prevented from disposal in the landfill in the year x (t of wet matter)” used in landfill model is full equivalent of value “Quantity of sunflower seeds husk combusted in the new CHP plant during the year y” (t of wet matter).		
Assessment	The parameter “Quantity of sunflower seeds husk avoided to landfilling during year x” was excluded from the monitoring as per the changes to the MP (Annex 2 to the MR version 2.0) and the internally approved at the enterprise methodology. The determination opinion of the assessment team regarding the revisions of the MP is presented in the section 3.3 of the present verification report. The issue is closed.		
Issue	**Clarification Request #8** It was revealed onsite that pressure and temperature of the natural gas are to be measured to monitor gas consumption. Clarify why these parameter were excluded from the MP.	1.5	IRL 70
Response	In the latest PDD version T and P of natural gas has to be monitored in order to determine density of natural gas and then mass flow (kg/month) by known volume flow (m3/month). However on the real practice the certificates on natural gas quality contain the figure of natural gas NCV per volume units (MJ/m3 or kcal/m3). This value is enough to calculate energy content in volume unit so the mass flow measurements become unnecessary. Enterprise has direct measurements of natural gas volume flow (in nm3) and NCV of natural gas obtained from gas supplier certificates per volume unit of natural gas (in MJ/m3) so energy content could be easily calculated without additional measurements.		
Assessment	The issue is closed based on the clarifications provided by the PPs. The each sensor of the natural gas accounting point was indicated in the MR version 2.0.		

Issue	**Clarification Request #9** The audit team observed that the parameter “Quantity of natural gas consumed by reserve gas fired burners at the operating husk fired boiler # 4 in the case of unforeseen or unexpected” is aggregated monthly. Moreover, excel calculation model contains the monthly values. At the same time the MP envisages monitoring of the parameter yearly which is inconsistent with the actual situation. Please correct/clarify.	1.6 a	IRL 70
Response	The inconsistency has been eliminated throughout MR and MP.		
Assessment	The MP was changed to reflect the actual situation observed during onsite mission. The determination opinion of the assessment team regarding the revisions of the MP is presented in the section 3.3 of the present verification report. The issue is closed.		
Issue	**Clarification Request #10** The audit team observed that the parameter “Quantity of net electricity, produced by project CHP” is aggregated monthly. Moreover, excel calculation model contains the monthly values. At the same time the MP envisages monitoring of the parameter yearly which is inconsistent with the actual situation. Please correct/clarify.	1.6 c	IRL 70
Response	The inconsistency has been eliminated throughout MR and MP.		
Assessment	The MP was changed to reflect the actual situation observed during onsite mission. The determination opinion of the assessment team regarding the revisions of the MP is presented in the section 3.3 of the present verification report. The issue is closed.		
Issue	**Clarification Request #11** The data unit in the certificates from gas provider is kcal/m^3. This is not in compliance with the revised MP. At the same time the Excel calculation model includes the algorithm for values conversion. Please correct/clarify.	1.6 a	IRL 19, 70
Response	Data measurement units have been appropriately corrected from GJ/nm^3 to kcal/nm^3 in MR (Table D.1.1.1.)		
Assessment	The MP was changed to reflect the actual situation observed during onsite mission. The determination opinion of the assessment team regarding the revisions of the MP is presented in the section 3.3 of the present verification report. The issue is closed.		

Forward Action Requests by audit team			
	Comments and Results	Ref	Conclusion and IRL
Issue	**Forward Action Request #1** The monitoring manual, describing the JI project management, monitoring points, monitoring frequency for each parameter (raw data and aggregated sum), procedure and responsibilities for cross-check and approval of monitoring results (internal audits) shall be developed and approved at the enterprise and provided to the assessment team during the next periodic verification.	1.2	To be checked during the next verification.
Response	The monitoring manual which will aggregate all monitoring activities serving as instruction for personnel involved in monitoring is officially planned for development and acceptance at the enterprise for the next monitoring period. The appropriate Order of the enterprise is provided to verification team.		
Assessment	The approved monitoring manual is to be checked during the next verification.		
Issue	**Forward Action Request #2** All the monitored data was available during the onsite visit. However, the procedure of redundancy and/or IT solution of data protection measures is to be implemented to ensure data protection.	1.6 a	To be checked during the next verification.
Response	The IT protection of data is provided by doubling of all monitoring data keeping at computer server of the enterprise and personal computer of each responsible person involved in monitoring. Server equipment is as reliable as compact disc technology and could serve as reserve source of data in case of malfunction of personal computers. Thus IT protection of data is already performed at the enterprise which is in line with normal business practice. However, according to the request the third carrier in form of compact disc for data keeping and storage will be also incorporated.		
Assessment	The implementation of the procedure ensuring the protection of all monitored data is to be checked during the next verification.		

Industrie Service

Annex 2

Information Reference List

Ref. No.	Issuance and/or submission date	Title/Type of Document	Author / Editor / Issuer	Additional Information
	On-site interviews conducted on April 24, 2012 in Kirovograd, Ukraine at PJSC “Kirovogradoliya” by auditing team of TÜV SÜD. **Verification Team on-site:** Mr Igor Kachan — TÜV SÜD Ukraine LLC, GHG Auditor (on-site) Mr Andrey Atyakshev — TÜV SÜD Ukraine LLC, GHG Auditor (on-site) Mr Maxim Krivosheev — TÜV SÜD Ukraine LLC, CMS Expert (on-site) **Interviewed persons at PJSC “Kirovogradoliya”:** Mr Aleksii Epik — LLC “Biomass-Carbon”, JI consultant Ms Larisa Dianova — PJSC “Kirovogradoliya”, energy engineer Ms Vozniuk Olena — Kernel Holding S.A., head of organizational development Mr Nikolay Demidenko — PJSC “Kirovogradoliya”, chief power engineer Mr Dmitriy Lazareych — PJSC “Kirovogradoliya”, deputy production director Mr Ivan Kosyakov — PJSC “Kirovogradoliya”, engineer-metrologist Mr Oleg Pertovskiy — PJSC “Kirovogradoliya”, director Ms V.J. Tasenko — PJSC “Kirovogradoliya”, head of laboratory Ms Antonina Chemadorova — PJSC “Kirovogradoliya”, laboratorian Ms Stella Starozhuk — PJSC “Kirovogradoliya”, logistic manager Mr Nikolay Chernysh — PJSC “Kirovogradoliya”, deputy engineer for technology Ms Vera Staray — PJSC “Kirovogradoliya”, IT department		
0.	24/04/2012	List of on-site audit participants at PJSC “Kirovogradoliya”	TÜV SÜD	On-site interviewed persons
1.	07/11/2011	Certificate about output for 07/11/2011, press- and extraction oil	Kirovogradoliya	Primary data
2.	2011	Certificate about oil meal output for 07/11/2011and 28/05/2011	Kirovogradoliya	Primary data
3.	11/2011	Certificate about press- and extraction oil output for November 2011	Kirovogradoliya	Primary data
4.	05/2011	Certificate about press-oil output for May 2011	Kirovogradoliya	Primary data
5.	11/2011	Certificate about extraction oil output for May 2011	Kirovogradoliya	Primary data

Ref. No.	Issuance and/or submission date	Title/Type of Document	Author / Editor / Issuer	Additional Information
6.	05/2011, 11/2011	Certificate about husk output for May and November 2011	Kirovogradoliya	Primary data
7.	11/2011	Consignation notes of shipped husk, November 2011	Kirovogradoliya	Primary data
8.	05/2011	Consignation notes of shipped husk, May 2011	Kirovogradoliya	Primary data
9.	04/2012	Certificate about nonworking days of the enterprise for 2011	Kirovogradoliya	Operation status
10.	7/12/2011	Order about the appointment of responsible persons for information capture in the framework of JI project	Kirovogradoliya	
11.	06/2011	Acceptance certificate. Heat accounting system.	Kirovogradoliya	Heat monitoring
12.	01-03/2011	Delivery and acceptance certificate for January-March 2011	Kirovogradgaz	Natural gas
13.	05/2011	Certificate about extraction oil output for May 2011	Kirovogradoliya	Primary data
14.	04/2011	Production report for April 2011	Kirovogradoliya	
15.	11/2011	Production report for November 2011	Kirovogradoliya	
16.	12/2011	Production report for December 2011	Kirovogradoliya	
17.	2011	Certificate about husks selling in December, April, November 2011	Kirovogradoliya	Primary data
18.	2005	Determination Report	TÜV SÜD	
19.	10/2011	Passport of physical and chemical parameters of natural gas for October 2011	NAK Naftogaz	NCV of gas
20.	28/04/2011	Accreditation certificate Sevastopol laboratory (husk)	DAkkZ	
21.	11/04/2011	Testing protocol. Caloric value of husk.	Sevastopol laboratory	NCV of husk
22.	12/10/2011	Testing protocol. Caloric value of husk.	Sevastopol laboratory	NCV of husk
23.	04/01/2009	Methodology of husk moisture content determination	Kirovogradoliya	Internal methodology
24.	04/01/2009	Methodology of sunflower seeds husk quantity calculation	Kirovogradoliya	Internal methodology
25.	24/04/2012	Automatic system for commercial measurement of power consumption, program interface	Kirovogradoliya	

Ref. No.	Issuance and/or submission date	Title/Type of Document	Author / Editor / Issuer	Additional Information
26.	04/01/2009	Methodology of electricity accounting for own needs of CHP	Kirovogradoliya	Internal methodology
27.	04/01/2009	Methodology of husk combustion accounting	Kirovogradoliya	Internal methodology
28.	04/01/2009	Methodology for the assessment of the heat consumption for the production needs	Kirovogradoliya	Internal methodology
29.	18/08/2005	Internal rate of heat consumption for oil production	Kirovogradoliya	Internal norm
30.	01/09/2011	Methodology for the assessment of the heat consumption for the production needs	Kirovogradoliya	Internal methodology
31.	11/2011	Steam consumption on the reducing-cooling unit, November 2011	Kirovogradoliya	Primary data
32.	11/2011	Steam consumption by the preparatory shop in November 2011	Kirovogradoliya	Primary data
33.	11/2011	Gas consumption in November 2011	Kirovogradoliya	Primary data
34.	10/01/2012	Steam consumption by the dryer in November 2011	Kirovogradoliya	Primary data
35.	2011	Excel calculation model for 2011 (version 1)	Biomass-Carbon	ERUs calculation
36.	2011	Log of quality oil control in 2011, page 1	Kirovogradoliya	
37.	2011	Log of quality oil control in 2011, page 2	Kirovogradoliya	
38.	2011	Log of quality oil control in 2011, page 3	Kirovogradoliya	
39.	2011	Log of quality oil control in 2011, page 4	Kirovogradoliya	
40.	2011	Log of quality oil control in 2011, page 5	Kirovogradoliya	
41.	2010	Passport “Ergomera-126”, page 1	Ergomera	Calibration evidence
42.	2010	Passport “Ergomera-126”, page 1	Ergomera	Calibration evidence
43.	2011	Schedule of repair works in 2011	Kirovogradoliya	
44.	2011	Log of repair works in 2011	Kirovogradoliya	
45.	24/04/2012	Accounting of shipped husk, program interface	Kirovogradoliya	
46.	7/11/2011	Husk and oil moisture control, program interface	Kirovogradoliya	
47.	7/11/2011	Oil moisture control, program interface	Kirovogradoliya	

Ref. No.	Issuance and/or submission date	Title/Type of Document	Author / Editor / Issuer	Additional Information
48.	28/05/2011	Husk and oil moisture control, program interface	Kirovogradoliya	
49.	24/04/2012	Automobile scales	Kirovogradoliya	Photo
50.	15/03/2012	«Utilization of Sunflower Seeds Husk for Steam and Power Production at the Oil Extraction Plant OJSC “Kirovogradoliya” Version 1.0	Biomass-Carbon	Monitoring report
51.	12/02/2008	«Utilization of Sunflower Seeds Husk for Steam and Power Production at the Oil Extraction Plant OJSC “Kirovogradoliya”, version 2	Biomass-Carbon	Final PDD
52.	14/04/2011	«Utilization of Sunflower Seeds Husk for Steam and Power Production at the Oil Extraction Plant OJSC “Kirovogradoliya”, Ukraine, version 3.0	Biomass-Carbon	Monitoring report for 2009-2010
53.	10/12/2010	«Utilization of Sunflower Seeds Husk for Steam and Power Production at the Oil Extraction Plant OJSC “Kirovogradoliya”	BVC Holding SAS	Verification report
54.	24/04/2012	Passports for electricity meters # ZMD405Cr44.0007c2s2, ZMD410Ctr44.0457s3	Landis&Gyr	
55.	05/12/2011	SEIA Order, 2011	NEIA	Electricity Factor
56.	26/05/2011	Charter of PJSC “Kirovogradoliya”	Kirovogradoliya	
57.	2011	Passports, “Ergomera-126”	Ergomera	
58.	2011	Membranes specifications		
59.	2011	Passports, pressure sensors	Elemer, Manomert, Kievpribor	Calibration evidence
60.	2005	Passport, IRVIS flow meter	IRVIS	Calibration evidence
61.	24/04/2012	Passport, laboratory scales	OHAUS	Calibration evidence
62.	24/04/2012	Passport, thermal sensors	Metran	Calibration evidence
63.	24/04/2012	Calibration certificate, OPTIMASS flow meter	Ukrmetrteststandart	Oil amount
64.	20/08/2003	Calibration certificate, automobile scales	Kirovogradoliya	Calibration evidence
65.	19/10/2007	Calibration certificate, automobile scales (#1)	Kirovogradoliya	Calibration evidence
66.	19/10/2007	Calibration certificate, automobile scales (#2)	Kirovogradoliya	Calibration evidence

Ref. No.	Issuance and/or submission date	Title/Type of Document	Author / Editor / Issuer	Additional Information
67.	27/01/2011	Contract of Kirovradoliya with DP Energorynok	DP Energorynok	Electricity supply
68.	15/02/2011	Protocol of conducted trainings	DP STsPK	
69.	12/03/2011	Order about data storage	Kirovogradoliya	Internal order
70.	07/06/2012	«Utilization of Sunflower Seeds Husk for Steam and Power Production at the Oil Extraction Plant OJSC “Kirovogradoliya” version 2.0	Biomass-Carbon	Monitoring report
71.	06/06/2012	Excel calculation model for 2011 (version 2.0)	Biomass-Carbon	ERUs calculation
72.	06/2012	Excel calculation model HUSK-annual	Biomass-Carbon	Landfill gas calculation
73.	06/2012	Husk sold, excel file	Biomass-Carbon	Internal form for monitoring
74.	06/2012	Certificate about husk amount recalculation	Kirovogradoliya	
75.	06/2012	Raw data for husk amount calculation	Kirovogradoliya	
76.	06/2012	Amount of husk consumed by boilers	Kirovogradoliya	Internal form for monitoring
77.	27/04/2009	Commissioning acts	Kirovogradoliya	CHP commissioning
78.	06/2012	Passports, electricity meters	Telekart-Pribor	Calibration evidence
79.	06/2012	Passports, gas accounting point	Kirovogradoliya	Calibration evidence
80.	06/2012	Passports and certificated, heat accounting	Kirovogradoliya	Calibration evidence
81.	06/2012	Passports, laboratory equipment	Kirovogradoliya	Calibration evidence
82.	12/06/2012	«Utilization of Sunflower Seeds Husk for Steam and Power Production at the Oil Extraction Plant OJSC “Kirovogradoliya” version 3.0	Biomass-Carbon	Monitoring report
83.	12/06/2012	Excel calculation model for 2011 (version 3.0)	Biomass-Carbon	ERUs calculation