DRAFT DETERMINATION REPORT

LANDFILL GAS RECOVERY AND FLARING AT THE MUNICIPAL SOLID WASTE SITE "SHIROKORECHENSKIY", EKATERINBURG, RUSSIAN FEDERATION

PROJECT NO. JI.VAL0146
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SGS United Kingdom Ltd. has made a determination of the JI project activity "Landfill gas recovery and flaring at the municipal solid waste site "Shirokorechenskiy", Ekaterinburg, Russian Federation". The scope of determination is the independent and objective review of the project design document, baseline study and monitoring plan and other relevant document of the project. The information in this document is reviewed against the requirements of Decisions 16 and 17 CP7 of the Marrakech Accords and Article 6 of the Kyoto protocol and subsequent guidance from JI supervisory committee.

The overall validation process, from Contract Review to Validation Report & Opinion, was conducted using internal procedures.

The first output of the validation process is a list of Corrective Actions Requests and New Information Requests (CAR and NIR), presented in Annex 3 with this document. Taking into account this output, the project proponent revised its project design document. The report is based on the findings of document reviews, the stakeholder consultation process and responses from the project participants to the findings raised in this report. This report should not be read without reference to the annexed Determination protocol, Findings overview and Local assessment checklist

CAR 1 will be outstanding. CAR 1 is based on the finding that no documented approval is available from the Parties involved. On the basis of these findings, this report provides the justification for the recommendation of a Qualified Determination Opinion.

Report No.: JI.VAL0146	Subject Group:	
Report title: Landfill gas recovery and flaring at the municipal solid waste site "Shirokorechenskiy", Ekaterinburg, Russian		
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Indexing terms

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Abbreviations

AAU	Assigned Amount Unit
AIE	Accredited Independent Entities
CAR	Corrective Action Request
CBH	Central Boiler House
EF	Emission Factor
EIA	Environmental Impact Assessment
ERU	Emission Reduction Unit
GHG	Greenhouse Gas
GTU	Gas Turbine Units
IZBH	Industrial Zone Boiler House
JI	Joint Implementation
JISC	Joint Implementation Supervisory Committee
LoA	Letter of Approval
MP	Monitoring Plan
NGO	Non-governmental organization
NIR	New Information Request
PDD	Project Design Document
UNFCCC	United Nations Framework Convention on Climate Change
RUB	Russian Currency

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1 INTRODUCTION

1.1 Objective

National Carbon Sequestration Foundation (NCSF), a corporation organised and existing in Russia has commissioned SGS to make a determination of the project: "Landfill gas recovery and flaring at the municipal solid waste site "Shirokorechenskiy", Ekaterinburg, Russian Federation " with regard to the relevant requirements for JI project activities. The purpose of a determination is to have an independent third party assess the project design. In particular, the project's baseline, the monitoring plan (MP), and the project's compliance with relevant UNFCCC and host country criteria are validated in order to confirm that the project design as documented is sound and reasonable and meets the stated requirements and identified criteria. Determination is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of emission reduction units (ERUs). UNFCCC criteria refer to the Kyoto Protocol Article 6 criteria and the Guidelines for the implementation of Article 6 of the Kyoto Protocol as agreed in the Marrakech Accords.

1.2 Scope

The determination scope is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations. SGS has employed a risk-based approach in the determination, focusing on the identification of significant risks for project implementation and the generation of ERUs.

The determination is not meant to provide any consulting towards the Client. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project design.

Documents reviewed as Part of Scope

- Project Design Documents
- Baseline study
- Monitoring Plan and
- Summary of comments from Local stakeholders

1.3 GHG Project Description

The present project activity is located near to the city of Ekaterinburg, Sverdlovsk District.
City of Ekaterinburg located in Ural region of the Russian Federation.

The project proposes to build and operate a landfill gas (LFG) recovery and flaring system in order to reduce CH4 emissions at the landfill site named Shirokorechenskiy solid waste disposal site (SWDS).

The landfill site started operating in 1960. Total area of the waste site is 41 hectares, the waste layer thickness is 42m. On average 542,000 tones of waste are disposed at the landfill site annually. The waste is coming from the city of Ekaterinburg whose population is 1,340,000 people. Total volume of waste buried from the beginning of operation of Shirokorecheskiy landfill is about 24 million tons. By this moment 12 hectares of the site are out of use (reclamation was carried out in 2002). The area of 10 hectares is currently in operation while two hectares are still free and 14 hectares are in reserve.

The project has planned to delivery equipment to the landfill site in November 2008, and in January 2009 the Project will become operational.

2 METHODOLOGY

The determination may consist of the following three phases:

I A desk review of the project design documentation
II Site visit and follow-up interviews with project stakeholders
III The resolution of outstanding issues and the issuance of the final determination report and opinion.

2.1 Review of PDD and additional documentation

The determination is performed primarily as a document review of the publicly available project documents. The assessment is performed by trained assessors using a validation protocol.

The validation protocol used for the assessment is partly based on the templates of the IETA / World Bank Validation and Verification Manual and partly on the experience of SGS with the determination of JI projects. It serves the following purposes:

- it organises, details and clarifies the requirements the project is expected to meet; and
- it documents both how a particular requirement has been validated and the result of the validation.

The validation protocol consists of several tables. The different columns in these tables are described below.

Checklist Question	***Means of verification (MoV)***	***Comment***	***Draft and/or Final Conclusion***
The various requirements are linked to checklist questions the project should meet.	*Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.*	*The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.*	*This is either acceptable based on evidence provided (**Y**), or a **Corrective Action Request (CAR)** due to non-compliance with the checklist question (See below). **New Information Request (NIR)** is used when the validation team has identified a need for further clarification.*

The completed validation protocol for this project is attached as Annex 2 to this report.

2.2 Site visit and follow-up interviews with project stakeholders

In general, a site visit might be required to verify assumptions in the baseline. Sometimes additional information is required to complete the determination, which may be obtained through telephone and face-to-face interviews with key stakeholders (including the project developers and Government and NGO representatives in the host country). These may be undertaken by the local SGS affiliate. In case of this project, a site visit and interviews have been conducted and the results are summarized in Annex 1 to this report.

2.3 Report of findings and use of type of findings

As an outcome of the determination process, the team can raise different types of findings.

In general, where insufficient or inaccurate information is available and clarification or new information is required the Assessor shall raise a **New Information Request (NIR)** specifying what additional information is required.

Where a non-conformance arises the Assessor shall raise a **Corrective Action Request (CAR).** A CAR is issued, where:

I. mistakes have been made with a direct influence on project results;

II. validation protocol requirements have not been met; or

III. there is a risk that the project would not be accepted as a JI project or that emission reductions will not be verified.

The validation process may be halted until this information has been made available to the assessors' satisfaction. Failure to address a NIR may result in a CAR. Information or clarifications provided as a result of an NIR may also lead to a CAR.

Observations may be raised which are for the benefit of future projects and future verification or validation actors. These have no impact upon the completion of the validation or verification activity.

Corrective Action Requests and New Information Requests are raised in the draft validation protocol and detailed in a separate form (Annex 3). In this form, the Project Developer is given the opportunity to "close" outstanding CARs and respond to NIRs and Observations.

3 DETERMINATION FINDINGS

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

1) The findings from the desk review of the original project design documents and the findings from interviews during the follow up visit are summarised. A more detailed record of these findings can be found in the determination protocol in Annex 2.

2) Where SGS had identified issues that needed clarification or that represented a risk to the fulfilment of the project objectives, a New Information or Corrective Action Request, respectively, has been issued. The New Information and Corrective Action Requests are stated, where applicable, in the following sections and are further documented in Annex 3. The determination of the project resulted in nine Corrective Action Requests and sixteen New Information Requests.

3) Where New Information or Corrective Action Requests have been issued, the exchanges between the Client and SGS to resolve these Requests are summarised.

4) The conclusions of the determination are presented.

The final determination findings relate to the project design as documented and described in the revised and resubmitted project design documentation version 03 dated 19/09/2008.

3.1 Project design

Russian Federation is the host country for the present JI project activity, it is Annex 1 participant to the project activity. According to the information available on web link http://maindb.unfccc.int/public/country.pl?country=RU host party involved in the project activity has identified the Designated Focal Point for the JI projects and detailed National guidelines and procedures for approving JI projects. The detailed information about progress reporting to UNFCCC is available on the respective websites mentioned above. It was verified from the above web-links that Russian Federation has ratified Kyoto protocol on 18th November 2004 while EU countries has ratified the same on 31st May 2002. EU country involved in the project activity has not been identified yet. The national Registry is undergoing testing mode. At this point of time it is not possible to confirm if the Parties are in compliance with its obligations under Articles 5 & 7 of the Kyoto Protocol. This will need to be confirmed before the project can officially be recognized as JI project, Obs1.

As per decision of the JISC “at least one written project approval by a Party involved other than the host Party(ies) has to be provided to the accredited independent entity (AIE), additionally to that (those) of the host Party(ies), and made available to the secretariat by the AIE when submitting the determination report regarding the PDD for publication”. No evidence was provided that the project has the approval of the Parties involved and CAR1 was raised. Project proponent clarified that the LoA from host country will be available after submission of Draft determination report from AIE to the DFP. The CAR remains open and the official Letters of Approval will need to be provided before the project can be recognized as JI project.

To stick to the point aimed at improving PDD contents and expanding its clarity during determination process NIR3 was raised to avoid data repetition PDD sections A, table A.2.1 and table A.4.1.4 and NIR 21 was raised to make clear the project crediting period. The project amended the points in question and corresponding NIR 3,21 were closed out.
A proof on project design engineering to be current best practice for LFG projects was received during the clarification under NIR18. It was learned form Contract Supplier about the German company Haase Energietechnik Plc. This firm is a designer and a producer of landfill gas to energy systems, leachate treatment systems and systems for treatment of industrial gases and it has been producing and operating landfill gas equipment for more than 20 years in many

countries. The company is the best on today's landfill gas equipment market to meet environment requirements in Germany (TA-Luft), UK Emission Standards for Landfill Gas Flares. The clarification for the current LFG project was accepted and NIR18 was closed out. NIR19 enforsed to in-depth investigations on a point of the project technology substitution by other or more efficient technologies within the project period. It has shown that it is very unlikely to shift the technology since the proposed equipment is new, very efficient (flare efficiency 99% at 1000 ^{o}C of flare temperature) and rather expensive (approx. of 2,120,000 Euros), Center Environmental Projects will declare for non-change of the project technology within the project period. The project explanations were accepted and resulted in the closure of NIR 19.
To ensure the project readiness for implementation and particular staff needs compliance NIR 20 was raised. The project confirmed on necessity staff training. Meanwhile, the pending Delivery Contract with Supplier will provide training for local project staff (technicians and operators) to enable them to undertake the tasks required for both proper operation of the Project facilities and implementation of the monitoring plan before the Project become operational. Also the supplier will perform the necessary supervising of equipment maintenance. NIR 20 was transformed to FAR 3: Respond to FAR 3 has to be verified before Initial verification and/or 1st periodic starting date. The project should present evidences to demonstrate compliance with training needs by that date.
As per information from our local staff, In order to have the project complied with all the legal requirements of Russian Federation, it is necessary to get Certificate of Conformity for the project equipment before importation/usage on RF territory. NIR16 was raised. As the project activities will use high temperature technology (1000 C) and explosive gases, Federal Law # 116-FZ "About industrial safety" dd 21.07.1997 clearly requires Conclusion and Registration in the Federal Ministry of Ecological, Technological and Nuclear Control and follows up permits granted to the landfill site on the environmental impacts. The project confirmed on Certificate need for equipment and corrections to permissions, safety requirements to be done in the process of exploitation. NIR 16 was closed out.
NIR17 was raised to clarify on land owner of landfill site and if the company is different from a site owner/operator whether it impacts on the ownership of the gas rights and the ERU rights once the project is realized. The reply by PP made clear on no ownership disputes over the ERUs since the land owner/site owner/operator of landfill site is EMUE Specialized Motor-Transport Depot ("Spetsavtobaza"). The Centre of Environmental Projects as the Investor has entered with EMUE in the investment agreement under which the Project activities will be implemented. All cash inflows from ERU sales will be addressed to Centre of Environmental Projects as a return on investment under this agreement. NIR 17 was transformed to FAR 2: the submission of Investment agreement between the above Parties by Final Detrenination report issuance.

3.2 Baseline

In accordance with Approved consolidated baseline methodology ACM0001 v.8 the identification of the baseline scenario and the additionality of the project are demonstrated through "Combined tool to identify the baseline scenario and demonstrate additionality" (the latest version 02.1).

In baseline scenario the Shirokorechenskiy landfill site GHG emissions (methane type mainly) will be generated and emitted into atmosphere caused by anaerobic decomposition of organic wastes. The PDD is using the model to estimate the amount of methane ex-ante that will be captured by the project based on the known and predicted quantity of disposed waste (tonnes/year) in place and wastes morphology. During the site visit the quantity of waste collected was checked through a random review of Technical operations reports on the quantity and the types of delivered waste to the landfill site "Shirokorechenskiy" by scrutinizing documentation as to "Limits on waste disposal allocated to EMUE Specialized Motor-Transport Depot, #15/03-05-9299 dd 23.11.2006 issued by Federal Services of Ecological, technological

and nuclear Control (MTU Rostechnadzor, UFO)/40/“, ”Sanitation and cleaning of cities, Directory’ issued by Mirniy A.N.-2005” /34/ and ”Technical report on collection, usage, purification and disposal of the wastes for 2007/ Explanatory notes to Technical report” /39/. The analysis of the model values with respect of relevant Uncertainty adjustments were accepted as a conservative approach.

The Combined tool applicability was under discussion of CAR2 and resulted in the proper followed up of steps which were clearly described and demonstrated in the PDD:

Step 1: Identification of alternatives to the project activity: The possible baseline scenarios identified are: 1) no capture of LFG from the landfill site, i.e. continuation of the current situation; 2) implementation of the project of LFG capture and flaring outside JI.

During the site visit it was confirmed that no landfill gas capture is currently taking place. It was confirmed that the current activity of Shirokorechenskiy landfill site is completely in accordance with the current norms of the Russian legislation and, therefore, landfill gas capture is not required. It was also confirmed that there are currently no legislative requirements, both sanitary and ecological for the collection and destruction of LFG in Russia and such regulation is not expected in the near future. It was also confirmed that the Licence of the landfill operator does not require them to capture the methane. Since Russia does not set legal requirements for landfill gas capture gas, all the scenarios are in compliance with all applicable regulations.

Meanwhile, CAR22 was raised to pay attention to the fact that the calculation of baseline emissions is a mathematic expression of what has been phrased in the identification of the baseline scenario. If to read Alternative 2 in conjunction with *Sub-step 1b. Compliance of alternatives chosen with current legislation and regulation,* the analysis could indirectly demonstrate whether the project is or not driven by legal requirements. Therefore, a way of demonstration that there is no legal or contractual obligation to burn landfill gas during project operations will be followed up. The Project participants agreed with such approach, CAR22 was closed out.

It was demonstrated that the only reasonable alternative to the project is uncontrolled release of the landfill gas to the atmosphere, i.e. continuation of the current situation as being the most likely possible scenario.

Step 2: Analysis of barriers: Investment and technological barriers were identified by the project clearly and transparently. Documentary support was provided based on “Calculation of financial needs and relative tariffs for solid waste disposing in EMUE Specialized Motor-Transport Depot for 2008”, approved by deputy Director and head of financial department of EMUP Specialized Motor-Transport Depot (“Spetsavtobaza”) /27/, “Approximate commercial proposal for construction of LFG collecting and utilization system #20070913-1 dd. Sep.13, 2007” /28/ by Contract Supplier and ”Instruction on designing, operating and reclaiming of solid waste disposal sites for overall russian landfill sites as per the link” http://www.recyclers.ru/files/idmswp.pdf
Lack of prevailing practice is proved with barriers existence, as the technology of gathering and burning of landfill gas is not currently commonplace on the territory of the Russian Federation. Besides, there is no LFG project implemented in Russia that would be aimed at gathering and burning of landfill gas. The performed analysis of impact of various barriers on development of alternative scenarios has showed that the Alternative 2 could not overcome such barriers and the Alternative 1 only did not have obstacles for its development.

Step 3: Investment analysis: The comparison of Project’s internal rate of return (IRR) with and without influence of income from the sale of Emission Reduction Units (ERU) is considered in the project investment analysis. Thus, as it is seen from the project calculations, the Project without sales of ERU, from investment point of view, is not economically viable. Only in the case of realization of ERU on the carbon market, the Project will become financially viable providing with cash flow and IRR of 59.44%.

It is clear that the JI project activity will not generate any financial or economic benefits other that the JI related income.

During the determination process, information was provided on the costs associated with the project activity based on an analysis done in the Delivery Contract with Supplier "Approximate commercial proposal for construction of LFG collecting and utilization system #20070913-1 dd. Sep.13, 2007" /28/. This shows that associated costs are substantial with this type of project. The following points of documentation were duly analyzed:

- offer for gaswell drilling, gas pipelines
- offer for flaring station
- offer for construction works
- offer for operations costs

Based on the proposed fees the data of Table B.1 in PDD was found reliable and accepted to be: Capital Expenditure 2,120,000 Euros; Operational costs 505,000 Euros.

Discount rate of 10 % was accepted taking into account as conservative value equaled to current bank long-term interest rate in Russia.

A financial evaluation of the project activity was conducted and showed financial unattractiveness and hence additionality of the project, i.e. verified that the implementation of the project require investment and the additional costs necessary for LFG capture and flaring, would not result in income other than that derived through the selling of created ERUs.

Step 4: Common practice analysis: It was verified that LFG recovery is not practiced in Russia, except of those under JI. There is no legal requirement for collection and combustion of landfill gas in the host country. Although, some initiatives financed by Dutch "Senter Novem" bank in 1995/96 for the construction of two landfill gas collection and utilisation systems in Moscow regions were taken, they worked out between half year and two years and were stopped due to lack of financing for the LFG operations /42/. It can be concluded that without taking into account other JI projects, no similar to the proposed project activity were currently in operation.

The project is likely to mitigate GHG emissions by implementing a landfill gas collection and flaring systems. It is important to note that these emission reductions are additional to the current site conditions and current practices, and would have not occurred in the absence of the project; thus the project complies with the concept of additionality defined under Kyoto's joint Implementation Mechanism. CAR 2 was closed up.

The baseline methodology was subject to several requests and interviews. CAR 4, 6, 25 were raised to request clarifications on the details.

The clarity of applicability of methodology ACM0001 v8 for the determination of baseline, project and overall emission reductions were a matter of the discussion under CAR 4,6 and particular
In terms of approach related to "Tool to determine methane emissions avoided from dumping waste at a solid waste disposal site". It was pointed out on ex-ante estimation of the amount of methane to be not transparent and inconsistent as to elaboration on the rationale of equation E.4.2 (PDD, page 30) as compared to equation 2 of the Tool for calculation of emissions from solid waste disposal; waste composition, average tonnage of waste disposed; definition of parameter 'j' and 'f'; evidence on the selection MCF value.
it was caused by directly using the simplified formulas instead of the original ones prescribed in the above Tool without justification, so request for quotation of the original formulas at first, then elimination those elements not applicable to this project with justification was adressed. The project reply was accepted since it cleared the project approach in demonstrating formulas used and identification of appropriate parameters and provided documentary substantiation making description in Section B more comprehensive and consistent in the revised version 02 of PDD, CAR 4, 6 were closed.

CAR25 was raised to evaluate fugitive methane emissions in form of LFG not captured. As per the Delivery contract with Supplier company the contracted equipment will partially cover landfill territory, so it is assumed that gas collection system will be able to capture LFG with the efficiency of 80 %, i.e. LFG extraction wells can be providing coverage of 80 % of waste accumulated. In a reply the project developer has agreed and updated the PDD section E making necessary changes. The installation of the gas pumping equipment envisaged on the slopes is technically difficult as there is possibility for air "poisoning" of LFG. It may cause improper flaring syatem functioning as well. Therefore, as per Delivery Contract with Supplier it was decided to install the equipment only on 16 ha out 22 ha. As only about 80 % of the territory will be covered by the equipment the project participants reduced the baseline emissions figures accordingly. The discussion on NIR between project proponent and SGS auditor resulted in conservative approach on the baseline identification, the baseline has been adjusted downwards by decreasing the amount of methane emissions not captured. CAR25 was closed out. The essential changes have been made in the file "Shirokorechensky calculation model" xls.

The validation has shown that the baseline methodology, the selected baseline scenario and the baseline calculations are appropriate.

3.3 Monitoring Plan

Section D, Annex 3 of the PDD discuss the monitoring plan. It is assumed that the monitoring will reflect good monitoring and reporting practices.

To clarify about the monitoring and reporting parameters of the overall emissions, NIR 10, 23 were raised.

New information was requested from the project participants in order to clarify which method for the determination of the flare efficiency was being used in the project activity as this was not clear in the PDD. Considering that according the manufacturers specifications the operating conditions of temperature and efficiency of the flare, being installed by the project, exceed the threshold set in the "Tool to determine project emissions from flaring gases containing methane"; the project participants applied a 90% flare efficiency as suggested by the tool, which is acceptable. Meanwhile, it was point out that despite on default value used, this value can only be applicable for the periods where the monitored temperature is above the prescribed levels of best operating conditions. By all means continuous monitoring of compliance with manufacturer's specification of flare must be performed. NIR 10, 23 were closed out.

NIR11, CAR12 were raised to clarify about monitoring of sustainable development and environmental impact indicators, and presence of worked out procedures for the collection and archiving of relevant data concerning environmental, social and economic impacts. In addition, clarifications were requested for details of the authority and responsibility of project management; the authority and responsibility for data registration, monitoring, measurement and reporting; procedures identified for training of monitoring personnel; procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions; procedures identified for calibration of monitoring equipment; procedures identified for maintenance of monitoring equipment and installations; procedures identified for monitoring, measurements and reporting; procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation); procedures identified for dealing with possible monitoring data adjustments and uncertainties; procedures identified for review of reported results/data; procedures identified for internal audits of GHG project compliance with operational requirements where applicable; procedures identified for project performance reviews before data is submitted for verification, internally or externally; procedures identified for corrective actions in order to provide for more accurate future monitoring and reporting.

The above mentioned questions were answered and incorporated in the revised PDD, NIR11, CAR12 were closed out.

NIR13 was raised to get updated list of monitoring parameters according to the methodology in terms of $EC_{PJ,y}$, electricity consumed an project emissions from LFG flaring ($PE_{CO2e, flare}$). It was concluded that assumption of this project to have project emissions from electricity consumption negligable is highly uncertain, thus monitoring of electricity consumed should be properly followed up. In reply the project participants revised PDD including these parameters and NIR13 was closed out.

To ensure that the PP develops an appropriate Monitoring Plan accordinging with the monitoring procedures of the tools those are applied in the PDD, CAR 24 was raised. In their response, project participants have expressed their concern regarding monitoring of waste prevented from disposal, which is monitored through sampling methods as per the "Tool to determine methane emissions avoided from dumping waste at a solid waste disposal site" because in their case they only need to use historical data for determination of waste fractions.

Considering that the use of this tool, within ACM0001 v.8, applies only for the ex-ante estimation of baseline emissions and taking into account what the methodology says in this regard: "Sampling to determine the different waste types is not necessary, the waste composition can be obtained from previous studies"; SGS accepted the proposition made by the project participants and hereby closed this CAR 24.

3.4 Calculation of GHG Emissions

NIR 5,7 and CAR 9 were raised to ensure duly project calculations used on conservative approach and clear formulas applied.

Project participants have omitted the estimation of project emissions due to energy requirements for the implementation of the project activity (i.e. electricity and fossil fuels). Table A.4.2 (PDD, page 7) mentions electrical motors in the description of the pumping equipment. Similarly, Scheme A.4.2. (PDD, page 8) shows a compressor plant run by electricity. ACM0001 v.08 requires the calculation of electricity consumption (ACM0001, eq. 16, p12/22) and they are to be monitored if project participants intend to apply ACM0001 in its current form. Projects proponents have argued that imports of electricity from the grid are negligible as compared to the total amount of emission reductions achieved by the project (PDD, footnote 6, page 16). In the first place, project proponents should bear in mind that the referred amount of emission reductions is based on ex ante estimations and not on verified monitored data, therefore such statement is uncertain. Second, they ignore electricity consumption on the basis of low levels of imports from the grid. As explained above, it would be premature to say that this emissions account for less percent than the overall estimation. In addition, the instruments and information procedures to keep records of this consumption do not represent a significant investment. Finally Project participants agreed to include this parameter in the monitoring plan, so it can be monitored in subsequent verifications of this project activity. NIR 5,7 were closed out. CAR 9 was closed out after the submission the revised Excel model 'Shirokorechenkiy LFG flaring project' and detailed PDD.

Because of lack of the official grid emission factor for Russian Federation, the project approach chosen was accepted to apply Emission Factor for the grid equaled to1.3 tCO2/MWh as a conservative default value of "Tool to calculate baseline, project and/or leakage emissions from electricity consumption" (Scenario A: Electricity consumption from the grid, Option A2) The option is applicable and based on the condition that only additional equipment installed in the project activity itself will consume electricity from the grid.

To comply with the format of Table 1 of ACM 0001 methodology *'Summary of gases and sources included in the project boundary, and justification/explanation where gases and sources are not included'* CAR 8 was raised to clearly distigush baseline and project emissions. The PP revised PDD and CAR 8 was closed out.

The discussion on GHG project, baseline and leakage emissions addressed in CAR 8 were made input on Uncertainty adjustment application.

An “ideal” situation, when all the LFG generated in the landfill body would be captured and destroyed has a high level uncertainty. In fact, there are uncertainties associated with data on collection of waste, waste composition, degradable organic carbon, fraction of degradable organic carbon decomposed, methane correction factor and so on. To estimate the influence of such uncertainties on the quantity of emission reductions generated by the project, an expert judgment contained in the 2006 IPCC Guidelines for National Greenhouse Gas Inventories (table 3.5. on the page 3.27, Chapter 3.7.2.2., Volume 5, Waste) was used. This judgment proposes to assess uncertainties associated with the default activity data and parameters in the FOD method for CH4 emissions from SWDS. Based on that judgment the uncertainty value used is 0.63. That is conservative and acceptable.

3.5 Environmental Impacts

In accordance with paragraph 33 (d) of the Guidelines for the implementation of Article 6 of the Kyoto Protocol, an EIA should be performed in accordance with the requirements of the host country. NIR14 was raised to clarify about proof of EIA of the project activity, including transboundary impacts, plus ensuring their compliance with procedures as determined by the host Party. It was addressed by the project that the EIA of the Shirokorechenskiy LFG utilization project № 880-08-D1650, volume 6 /32/ was developed by a Moscow-based institute, *Mosvodokanalniiproject,* in conformity with the Russian environmental legislation in Y2008.

The EIA is an integral part of the project design documentation that is subject to an approval by State Officials. The project has submitted a document pack for an approval to the Russian State Expertise in accordance to the Russian regulations. The Centre of Environmental Projects got the preliminary Letter dated 15 August 2008 #352-p informing that the project in general meets the requirements of documentation structure and contents for such type of project activity.

The implementation of the project will result in significant mitigation of environmental impact on the surrounding area. NIR 14 was transformed to FAR1:

FAR 1: Respond to FAR 1 has to be verified before Final Determination report release. The project should get the State Expert’s Conclusion on the project activity.

4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

4.1 Description of how and when the PDD was made publicly available

In accordance with the modalities for the determination of JI projects, the AIE shall make publicly available the project design document and receive, within 30 days, comments from Parties, stakeholders and UNFCCC accredited observers and make them publicly available.

4.2 Description of how and when the PDD was made publicly available

The PDD for this project was made available on the JI web site as mentioned below http://ji.unfccc.int/JI_Projects/DB/8KV3B6IXFAXFC5VBRY3UWTW3ZNLFIN/PublicPDD/0PX4DCEVJXSRXWXXW7T2UCCQU0MVMN/view.html and was open for comments from from 8th March 2008 to 6th April 2008. Comments were invited through same web link on email id of Mr. Andrew Collins andrew.collins@sgs.com; a contact person of AIE for JI projects.

4.3 Compilation of all comments received

No comments from International stakeholders were received during the commenting period.

NIR15 was raised to clarity about local stakeholders consultation process. Focus was made if appropriate media been used to invite comments by local stakeholders, the stakeholder consultation process been carried out in accordance with Russian regulations/laws.

In reply PP has stated that "*Stakeholders comments process have been carried out in conformity with Russian official consultation procedure. The letter signed by the Chairman of Committee for Environment and Nature Management of the Ekaterinburg City states that information on the project activity at Shirokorechenskiy project was published in the local newspaper "Vecherny Ekaterinburg" #42 27.02.2008. There were no comments received".*

The documentary proof was provided through Letter # 26.2-17/317 dated 28-02-2008 issued by Ekaterinburg City Administration, Ecology and Nature Resources Committee /8/. NIR15 was closed out.

4.4 Explanation of how comments have been taken into account

No comments were received during the commenting period.

5 DETERMINATION OPINION

SGS has performed a determination of the project “Landfill gas recovery and flaring at the municipal solid waste site “Shirokorechenskiy”, Ekaterinburg, Russian Federation”. The determination was performed on the basis of UNFCCC criteria and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

By extracting and flaring of landfill gas the project results in reductions of GHG emissions that are real, measurable and give long-term benefits to the mitigation of climate change. The investment analysis demonstrates that the proposed project activity is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. Given that the project is implemented as designed, the project is likely to achieve the estimated amount of emission reductions of 958,868 tonnes of CO2 equivalent.

The determination has revealed that the project has not been able to show that the project has approval of the Parties involved. Hence a qualified determination opinion is issued for this project.

The determination is based on the information made available to SGS and the engagement conditions detailed in the report. The determination has been performed using a risk based approach as described above.

6 REFERENCES

Category 1 Documents:

/1/ PDD for "Landfill gas recovery and flaring at the municipal solid waste site "Shirokorechenskiy", Ekaterinburg, Russian Federation". The following versions have been received:
- Version 01 dated 14-02-2008 (Submitted for International stakeholder consultation)
- Version 02 dated 11-09-2008
- Version 03 dated 19-09-2008

/2/ CDM approved methodology ACM0001 version 8

/3/ Excel sheet named as "Shirikorechenskiy LFG flaring project" for emission reduction calculation, Annex 4 of PDD

/4/ Excel sheet Calculation CO2 grid emissions, Annex 5 of PDD

/5/ Tool to determine methane emissions avoided from disposal of waste at a solid waste disposal site

/6/ Tool to determine project emissions from flaring gases containing methane

/7/ Tool to calculate baseline, project and/or leakage emissions from electricity consumption, version 01

Category 2 Documents:

/8/ The letter # 26.2-17/317 to regional branch of Rostechnadzor issued by Yekaterinburg City Administration, Ecology and Nature Resources Committee , head of Yekaterinburg Environmental Committee – S. Archipov dd. Feb. 28, 2008

/09/ Federal low #7-FZ dd. Jan.10, 2002 'about Environmental Protection' article 32 part 1

/10/ License for hazardous waste operation #OT-54-000058 (66) dd. Feb. 11, 2005, valid till Feb. 11, 2010

/11/ Permission for pollutant emission #806-P dd. Aug. 21, 2007 valid till Aug. 21, 2008.

/12/ License for the fossil use rights (ground water output). #CBE 01264 BЭ dd. May 29, 2007, valid till May 01, 2027

/13/ Yekaterinburg Solid Waste Disposal landfill 'Shirokorecheskiy' reconstruction draft vol. 6, book 1. 'Environment protection'

/14/ Report of air conditions monitoring in the waste disposal sites in the EMUP "Spezavtobasa", "Shirokorechenskiy" landfill dd. Nov. 12, 2007, performed by Ural regional "Rostechnadzor" branch -'Laboratory analysis and technical measurements center'

/15/ Report of soil specimens analysis results in the SSZ of "Shirokorechenskiy" solid waste disposal landfill of EMUP "Spezavtobasa", dd. Dec. 08, 2007, performed by Ural regional "Rostechnadzor" branch -'Laboratory analysis and technical measurements center'

/16/ 'State Environmental Expertise Conclusion on the Working Draft of Solid Waste Disposal Landfill 'Shirokorechenskiy' Reconstruction' approved by State Environmental

Protection Committee with Order #342 dd. Aug.14, 2000
/17/ Corrected landfill 'Shirokorechenskiy' Environmental Monitoring Draft dd. 2006
/18/ Certificate of compliance to fire and explosion safety norms #РОСС DE.ГБ05.A00285 dd. Dec.16, 2005.
/19/ Federal law #116-FZ dd. 21.07.1997 'about industrial safety during hazardous productive objects operation'
/20/ Sanitary-Epidemiologic Conclusion (negative) for the Instruction of 'Shirokorechinskiy' landfill operation draft #66.01.15.000.T.000141 dd. Aug.18, 2004
/21/ Convention on Long-Range Transboundary Air Impact (November, 13 1979)
/22/ Federal Law N 96-FZ "About atmospheric air protection", dated April 2, 1999
/23/ Project of Shirokorechenskiy solid waste disposal site Reconstruction, 2002; vol.1. Explanatory note.
/24/ Conclusion (positive) for project of Shirokorechenskiy SWDS reconstruction #17/16-94 issued by Yekaterinburg city Interdistrict Center of Sanitary and Epidemiology Supervision dd. July, 27, 2000
/25/ Hydrogeological Conclusion about Shirokorechenskiy SWDS expansion possibility #14460 dd. Feb., 24, 2000
/26/ Instruction of 'Shirokorechinskiy' landfill operation approved by director of EMUE Specialized Motor-Transport Depot dd. 2004
/27/ Calculation of financial needs and relative tariffs for solid waste disposing in EMUE Specialized Motor-Transport Depot for 2008, approved by deputy Director and head of financial department of EMUP "Specialized Auto Depot"
/28/ Approximate commercial proposal for construction of LFG collecting and utilization system #20070913-1 dd. Sep.13, 2007
/29/ The Act of plant allocation in permanent usage for Shirokorechenskiy SWDS sitting #2608-б dd. May, 23,1967 (This document was issued on the base of official decision # 371-5 dd. July 15, 1960, made by regional Sverdlovsk authorities referred in the mentioned above Act).
/30/ Characteristic of Waste Disposal Object (Shirokorechenskiy SWDS) reported by EMUE Specialized Motor-Transport Depot
/31/ Resolution of Head of Ekaterinburg city #1098-E dd. Sep. 17, 2001
/32/ Explanatory Note on the project design "Landfill gas recovery and flaring at the municipal solid waste site "Shirokorechenskiy"
Environmental protection, (Measures for air protection) volume.6
/33/ Annual Statistical Report 2-TP "Waste"
/34/ Sanitation and cleaning of cities directory' red. By Mirniy A.N.-2005.
/35/ The Resolution by Head of Yekaterinburg #50-з dd. Apr. 2, 1994 'About re-registration of land usage of EMUE Specialized Motor-Transport Depot
/36/ Letter from General director of Ecocom Oliver Kaizer dd. Dec.3, 2007
/37/ Passport for diesel power plant #AD-60C-T/400-2RM1 dd. June 13, 2006

/38/ Survey on biogas composition by Ramensky Regional Environmental Center

/39/ Technical report on collection, usage, purification and disposal of the wastes for 2007/ Explanatory notes to Technical report

/40/ Limits on waste disposal allocated to EMUE Specialized Motor-Transport Depot, #15/03-05-9299 dd 23.11.2006 issued by Federal Services of Ecological, technological and nuclear Control (MTU Rostechnadzor, UFO)

/41/ Informative Letter on waste morphology landfill management company signed Director V.A.Akimov dated 10-07-2007

/42/ http://www.ogbus.ru/authors/Yagafarova/Yagafarova_1.pdf

Persons interviewed:

/01/ Eugeniy Tkachuk, Chef-Engineer of YeMUE Specialized Motor-Transport Depot

/02/ Marat Latypov, Project Development Management, NCSF

Annex 1 - Local Assessment Checklist

This checklist is designed to provide confirmation of in-country data and information provided in the Project Design Document for project **"Landfill gas recovery and flaring at municipal solid waste site "Shirokorechenskiy"**, Ekaterinburg, Russian Federation

It serves as a "**reality check**" on the project that is completed by a local assessor from SGS Russia

Checklist Question	Ref	MoV	Comments	Source/Means of Verification *Reference: document name, number, date of document, Para/page referred* *Weblink/date last accessed…..*	Further Action / Clarification / Information Required?	Draft Concl Local Assessor	Final concl Lead assessor
1. Can you check about RU State authorities current strategy (i.e. no legislative acts to prohibit LFG venting or gathering/utilization) or plans on any changing of waste management, waste management fees in Russia. Are there programmes at the federal and regional level to financially support LFG projects?	PDD, A.4.3 /1/…/6/	DR	Official requirements in current Russian legislation both federal and local, applied to operation of Solid Waste Disposal Sites (SWDS), contains no obligations to utilisation of landfill gas. Neither federal nor regional Programmes officially approved for waste operation contain obligation for LFG utilization. The official financial support for the projects undergoing in Sverdlovsk region is shared in accordance to Strategy of Perspective Development of Yekaterinburg City for 2005-2015 approved by regional authorities. The Waste Operation Project developed in the framework of Strategy of Perspective Development of Yekaterinburg City for 2005-2015 /see link ref./ **contains no information** to implementation of LFG utilization technology on landfills situated in	/1/ Federal law 'About Waste Production and Consumption ' # 89 - FZ dd. June 24, 1998 /2/ Regional Sverdlovsk district low 'About Waste Production and Consumption ' # 77 - OZ dd. Dec. 17, 1997 Sanitation Rules and Norms: /3/ SanPiN 2.1.7.1322-03 'Hygienic Requirements for Damping and Clearance of Waste from Production and Consumption' /4/ SP 2.1.7.1038-01	no	ok	ok

Checklist Question	Ref	MoV	Comments	Source/Means of Verification *Reference: document name, number, date of document, Para/page referred* *Weblink/date last accessed…..*	Further Action / Clarification / Information Required?	Draft Concl Local Assessor	Final concl Lead assessor
			Sverdlovsk region. There is no information in available sources /see links at ref./ about other local programmes that could support LFG-utilization projects. So, the absence of financial support from regional programs is confirmed.	Hygienic Requirements for Arrangement and Operation of Solid Waste Disposal Sites dd. May 30, 2001 /5/ SanPiN 2.1.7.722-98 'The Hygienic Requirement Of Construction And Storage of Municipal Solid Waste Depositories' and other relevant official regularities. /6/ MDC 13-8.2000 'Concept of Solid Waste Treatment in the Russian Federation' dd. Dec. 22, 1999; approved by State Construction Body (Gosstroy). The Waste Operation Project: http://www.strategy-burg.ru/index.php?page=c			

Checklist Question	Ref	MoV	Comments	Source/Means of Verification *Reference: document name, number, date of document, Para/page referred* *Weblink/date last accessed…..*	Further Action / Clarification / Information Required?	Draft Concl Local Assessor	Final concl Lead assessor
				atalog&id3=100121&endlevel=1&dropdown=1&topstr=100121|100116|100007|100001|0 Regional authorities web-links: http://www.egd.ru/ http://www.midural.ru/midural-new/ http://www.duma.midural.ru/			
2. Please collect evidence for Local stakeholder consultation meeting and find out if invitation of relevant stakeholders has take place and which medias were used.	PDD /7/, /8/	DR	Project activity was published for a discussion with local stakeholders in public regional newspaper . The result of public hearing – public positive views on the project were confirmed with the /8/.	/7/ Yekaterinburg city newspaper "Evening Yekaterinburg" #42 dd. Feb. 27, 2008. /8/ The letter # 26.2-17/317 to regional branch of Technical and Environmental State Supervision body (Rostechnadzor) was written by head of Yekaterinburg Environmental Committee	ok	ok	ok

Checklist Question	Ref	MoV	Comments	Source/Means of Verification *Reference: document name, number, date of document, Para/page referred* *Weblink/date last accessed…..*	Further Action / Clarification / Information Required?	Draft Concl Local Assessor	Final concl Lead assessor
				– S. Archipov 'About public hearing' dd. Feb. 28, 2008.			
3. Have comments from Local stakeholders been taken into account? Please collect evidence	PDD /8/	DR	In accordance to results of public hearing reflected in /8/ there were no comments from public representatives.		ok	Ok	ok
4. Please request a summary of comments made Local stakeholders if any	PDD	DR	See question 3.		ok	Ok	ok
5. Are there any Host Party requirements for an Environmental Impact Assessment (EIA)? Is an environmental licence required? Can you confirm that? Is Environmental Impact Assessment procedure as	PDD,F section /9/…/17/	DR	The current Russian legislation /9/ contains no requirements to compulsory Environmental Impact Assessment on the project, if it doesn't pretend for the allotment of a new land plot. For the current project it's required only results of EIA as an integral part of the project documentation. The Shirokorecheskiy landfill owner – EMUE Specialized Motor-Transport Depot has the license for hazardous waste	/9/ Federal law #7-FZ dd. Jan.10, 2002 'about Environmental Protection' article 32 part 1. /10/ License for hazardous waste operation #OT-54-000058 (66) dd. Feb. 11, 2005, valid till Feb. 11, 2010. /11/ Permission for pollutant emission #806-P	Final state expertise conclusion for the project to asses is pending, FAR1 raised to be closed	Pending	FAR1

Checklist Question	Ref	MoV	Comments	Source/Means of Verification *Reference: document name, number, date of document, Para/page referred* *Weblink/date last accessed…..*	Further Action / Clarification / Information Required?	Draft Concl Local Assessor	Final concl Lead assessor
required by Russia correctly described in PDD? Under the environmental permits, would there be any requirements to continuously monitor environmental impacts?			operation /10/, the Permission for pollutant emission /11/ and license for ground water extraction /12/. There is no evidence for project compliance to official environmental requirements, because the draft design has not been approved and presented for the state expertise so far. The approved reconstruction draft design /13/ doesn't mention the LFG utilization plant at all. In principal circumstances of project implementation as it is described in PDD doesn't violate any of current norms. But its realization without required permissions and State expertise conclusion would be prohibited. In accordance to current legislation there are some requirements to perform the regular monitoring of following properties: - air quality on the boundaries of Sanitary Safe Zone /14/; - air qualities on the waste disposal sites /14/; - soil in Sanitary Safe Zone /15/;	dd. Aug. 21, 2007 valid till Aug. 21, 2008. /12/ License for the fossil use rights (ground water output). #СВЕ 01264 ВЭ dd. May 29, 2007, valid till May 01, 2027. /13/ Yekaterinburg Solid Waste Disposal landfill 'Shirokorecheskiy' reconstruction draft vol. 6, book 1. 'Environment protection'. /14/ report of air conditions monitoring in the waste disposal sites in the EMUP "Spezavtobasa", "Shirokorechenskiy" landfill dd. Nov. 12, 2007, performed by Ural regional "Rostechnadzor" branch -'Laboratory analysis and technical measurements center'	before Final Determination report release. preliminary approval was received		

Checklist Question	Ref	MoV	Comments	Source/Means of Verification *Reference: document name, number, date of document, Para/page referred* *Weblink/date last accessed…..*	Further Action / Clarification / Information Required?	Draft Concl Local Assessor	Final concl Lead assessor
			- ground water and surface leakage quality /16/; In general, the monitoring was performed in accordance to the Project of Environmental Monitoring of "Shirokorechenskiy" landfill issued and approved by State Expertise as part of working draft of solid waste disposal landfill 'Shirokorechenskiy' reconstruction /17/. Currently monitoring is performed in accordance to corrected Project of Environmental Monitoring of "Shirokorechenskiy" landfill /18/ which was prepared on the base of monitoring data obtained in 2000-2005. The air and soil monitoring data represented in laboratory protocols of analysis /14/-/15/. Ground water monitoring data was quarterly collected from all controlling wells during 2000-2005 and represented and analysed in /17/.	/15/ report of soil specimens analysis results in the SSZ of "Shirokorechenskiy" solid waste disposal landfill of EMUP "Spezavtobasa", dd. Dec. 08, 2007, performed by Ural regional "Rostechnadzor" branch -'Laboratory analysis and technical measurements center'. /16/ 'State Environmental Expertise Conclusion on the Working Draft of Solid Waste Disposal Landfill 'Shirokorechenskiy' Reconstruction' approved by State Environmental Protection Committee with Order #342 dd. Aug.14, 2000. /17/ Corrected landfill 'Shirokorechenskiy' Environmental Monitoring			

Checklist Question	Ref	MoV	Comments	Source/Means of Verification *Reference: document name, number, date of document, Para/page referred* *Weblink/date last accessed…..*	Further Action / Clarification / Information Required?	Draft Concl Local Assessor	Final concl Lead assessor
				Draft dd. 2006.			
6. can you confirm that the project meets all other legal requirements in the Russian Federation (for example that required permits are in place and if not, could this situation continue without the project activity	PDD F section /11/, /18/… /20/	DR	The project meets the following official requirements: Certifying of compliance to current health safety norms of hazardous equipment intended to install /18/. (This requirement established by /19, 20/). Permission for the air pollutant emissions /11/. In accordance to Sanitary-Epidemiologic Conclusion, the Instruction on 'Shirokorechinskiy' landfill operation doesn't comply to Sanitary norms mainly because it contains no references to actual norms. Thus, Operational instruction must be actualized to continue the operations the landfill.	/18/ Certificate of compliance to fire and explosion safety norms #РОСС DE.ГБ05.A00285 dd. Dec.16, 2005. /19/ Federal law #116-FZ dd. 21.07.1997 'about industrial safety during hazardous productive objects operation' /20/ Sanitary-Epidemiologic Conclusion (negative) for the Instruction of 'Shirokorechinskiy' landfill operation draft #66.01.15.000.T.000141 dd. Aug.18, 2004	Operational instruction must be actualized to continue the operations the landfill.	ok	ok
7. Is an EIA including transboundary impacts formally required? Are transboundary environmental	PDD, F section /21/, /22/	DR	The current Russian legislation supports the reducing harmful substances emissions (contaminants) in the air according to international liability established as per /21/. It contains no requirements to compulsory	/21/ Convention on Long-Range Transboundary Air Impact (November, 13 1979) /22/Federal Law N 96-FZ	ok	ok	ok

Checklist Question	Ref	MoV	Comments	Source/Means of Verification *Reference: document name, number, date of document, Para/page referred* *Weblink/date last accessed…..*	Further Action / Clarification / Information Required?	Draft Concl Local Assessor	Final concl Lead assessor
impacts considered in the analysis?			transboundary environmental impact assessment in the project documentation. Nevertheless, the project is in line with common requirements for reduction of pollutant emissions established in /22/.	"About atmospheric air protection", dated April 2, 1999			
8. Please collect evidence for the baseline scenario as discussed in the PDD and alternatives discussed in PDD. -methane correction factor (definition as per Tool)	PDD, /16/, /23/… /26/	DR, Visual Observation, Personal communication	The PDD states that in 2008 the landfill will exceed the limits for disposal of wastes, so, it is suggested its obligatory closure and conservation. It is true only for the oldest part of landfill, i.e. for a square of 24.85 ha. The remaining part (about 16 ha) is intended for following operation for the next 45 years and only after that whole landfill would be conserved in accordance to Project of Shirokorechenskiy SWDS reconstruction /23/. At the moment a new part of the landfill is prepared for the operation. All mandatory permissions for waste disposal site expansion are accepted /16/, /24/, /25/. The Methane Correction Factor could be appropriate to be equal 1.0 as it was made in PDD In accordance to CDM Tools because Shirokorechenskiy SWDS meets following requirements to anaerobic	/23/ Project of Shirokorechenskiy solid waste disposal site Reconstruction, 2002; vol.1. Explanatory note. /24/ Conclusion (positive) for project of Shirokorechenskiy SWDS reconstruction #17/16-94 issued by Yekaterinburg city Interdistrict Center of Sanitary and Epidemiology Supervision dd. July, 27, 2000. /25/ Hydrogeological Conclusion about Shirokorechenskiy SWDS expansion possibility #14460 dd. Feb., 24, 2000.	ok	ok	ok

Checklist Question	Ref	MoV	Comments	Source/Means of Verification *Reference: document name, number, date of document, Para/page referred* *Weblink/date last accessed…..*	Further Action / Clarification / Information Required?	Draft Concl Local Assessor	Final concl Lead assessor
			managed solid waste disposal sites: 1. There is a controlled placement of waste (i.e., communal and industrial waste directed to different deposition areas). 2. The control of scavenging and fires is provided in accordance to Operation Instruction /26/. 3. Operation of Shirokorechenskiy SWDS includes (i) levelling of the waste; (ii) mechanical compacting of waste layers with bulldozers; and (iii) cover of each layer with soil and inert construction waste. This practice was confirmed by chef-engineer of EMUE Specialized Motor-Transport Depot Evgeniy Tkachuk in interview during the site visit.	/26/ Instruction of 'Shirokorechinskiy' landfill operation approved by director of EMUE Specialized Motor-Transport Depot dd. 2004			
9. Please collect evidence which supports the additionality discussion under B 2. c. The barrier analysis, investment analysis	PDD /26/, /27/	DR	The additionality of project is based on the reliable statements raised from barrier analysis and common practice analysis: 1) *Investment barrier*; The financial basis of the waste management is mainly referred to tariffs for the waste disposing (10 rub/m3). In accordance to EMUE Specialized Motor-Transport Depot balance	/27/ Calculation of financial needs and relative tariffs for solid waste disposing in EMUE Specialized Motor-Transport Depot for 2008, approved by deputy Director and head of	ok	ok	ok

Checklist Question	Ref	MoV	Comments	Source/Means of Verification *Reference: document name, number, date of document, Para/page referred* *Weblink/date last accessed…..*	Further Action / Clarification / Information Required?	Draft Concl Local Assessor	Final concl Lead assessor
and common practice analysis were used to demonstrate the project			calculation /27/ the budget based on waste disposal fees that is supposed to be applied entirely for the current operational needs. Meanwhile, proposed project activities presume to have the total investment amount of EUR 1, 237,000 related to LFG –utilization equipment cost/28/, it is much more than planned site income of EUR 52,221 /27/ . So there is likely to be the investment barrier for project implementation not as JI. 2) *Technological barrier and the lack of prevailing practice*. There is no available information about successful implementation of LFG-gathering and utilization projects in Russia, thus the statement about absence of such equipment operation practice is reliable except of 3 JI projects. 3) The common SWDS operation practice in Russia is based on the officially approved regulations, which doesn't include the compulsory LFG gathering and utilization. There is no available information about any intentions in federal or local authorities to stimulate the LFG gathering	financial department of EMUP "Specialized Auto Depot" /28/ Approximate commerce proposal for construction of LFG collecting and utilization system #20070913-1 dd. Sep.13, 2007.			

Checklist Question	Ref	MoV	Comments	Source/Means of Verification *Reference: document name, number, date of document, Para/page referred* *Weblink/date last accessed…..*	Further Action / Clarification / Information Required?	Draft Concl Local Assessor	Final concl Lead assessor
			and utilization. It is in compliance with common practice analysis represented in PDD.				
10. Can you confirm the situation of the landfill (location, ownership construction and operation of site, as described in the PDD	PDD, /10, /25/	DR Site visit	The description of landfill in PDD is true. Operations practice is confirmed with actual internal operation instruction /10/, /25/.	/10/, /25/	ok	ok	ok
11. The model for ex-ante baseline emissions is based on the known and predicted quantity of disposed waste (tones/year) in place. Can you check the data collection system for this parameter and the actual quantity of waste in place, including	PDD, A /29/… /31/	Site visit Observe weight measurement process and how data is collected and recorded. Select a sample of records and check that	In accordance with internal instruction for Shirokorechenskiy SWDS the following waste disposal control system is used: The values of waste which are transported to landfill with EMUE Specialized Motor-Transport Depot own cars are appropriated to be equal to sum of values of all cars registered on the entrance to landfill site. The weight of waste disposed is calculated as summarized value multiplied on the empirical coefficient. The net weight of waste, delivered by cars, other than EMUE Specialized Motor-Transport Depot cars is measured with	/29/ The Act of plant allocation in permanent usage for Shirokorechenskiy SWDS #2608-6 dd. May, 23,1967 (This document was issued on the base of official decision # 371-5 dd. **July 15, 1960**, made by regional Sverdlovsk authorities referred in the mentioned above Act). /30/ Characteristics of Waste Disposal Object	ok	ok	ok

Checklist Question	Ref	MoV	Comments	Source/Means of Verification *Reference: document name, number, date of document, Para/page referred* *Weblink/date last accessed…..*	Further Action / Clarification / Information Required?	Draft Concl Local Assessor	Final concl Lead assessor
- Start/closure of operating, - Annual average number of tones of waste are disposed (853,418 t) - total disposed waste quantity, site capacity - total area of the dump - Official survey made Ramensky Regional Environmental to support site data, i.e. biogas composition etc Please collect other evidence and validate the biogas		they are traceable through to the system and where the data is collected. Check how the data is collected and handled. Verify the total quantity	direct weighting of cars before and after unloading on the landfill site. The weighing-machine is situated at the landfill entrance. Collected data are registered in work journals. There were no discrepancies or violations of registration scheme identified during site visit. - The Shirokorechenskiy SWDS started operating at 1960 /28/. The landfill closure is intended in 2050 (in the case of reconstruction); - Annual number of disposed waste indicated in PDD of 850,000 tonnes correlates with 3,670,557 m3 (900,000 t) appeared in form of official annual statistical observation 2-TP "Waste" represented by EMUP "Specialised Motor-Transport Depot" during site visit for 2007/Explanatory notes to Technical report for y2007. - Total disposed waste quantity and site capacity is confirmed with /29/. - Total area of the dump is 40.85 ha, actual – 20 ha, site capacity –	(Shirokorechenskiy SWDS) reported by EMUE Specialized Motor-Transport Depot, on 31.12.2003 /31/ Resolution of Head of Yekaterinburg city #1098-E dd. Sep. 17, 2001. /32/ Environmental protection, (Measures for air protection) vol.6 /33/ Annual Statistical Report 2-TP "Waste" , 2007 /38/ Survey on biogas composition by Ramensky Regional Environmental Center, 2007 /39/ Technical report on collection, usage, purification and disposal of the wastes for 2007/ Explanatory notes to Technical report			

Checklist Question	Ref	MoV	Comments	Source/Means of Verification *Reference: document name, number, date of document, Para/page referred* *Weblink/date last accessed…..*	Further Action / Clarification / Information Required?	Draft Concl Local Assessor	Final concl Lead assessor
composition			35,212 ths m3 in accordance to /30/. - The data of biogas composition represented by Ramensky Regional Environmental Center				
12. Can you confirm when and how this data was collected and if the changes in the composition are expected in the future	PDD, A 4.1.4 /17/, /34/	DR	Composition of biogas ant partially methane concentration is measured in the near surface air layer (0.4 and 1.5 m above waste surface) at 2001-2005 /17/. There is a well described in literature common trend to waste composition longtime changes – quite decrease of food waste proportion and growth of polymer and metal packing materials /34/.	/34/ 'Sanitation and cleaning of cities directory' issued by Academy of municipal services named after K.D.Pamphilov, 2005.	ok	ok	ok
13. Please verify if the equipment used in the project is second hand or new and collect evidence: manuals, passports, any description available	PDD /18/, /28/,/36/	Site visit	In accordance to /28/ the equipment is consist of gas piping system, gas collecting station and flaring plant which all must be new: Gas booster station for landfill gas with temperature flare HTN 12.5 with a capacity of 2,500 nm3/h		ok	ok	ok

Checklist Question	Ref	MoV	Comments	Source/Means of Verification *Reference: document name, number, date of document, Para/page referred* *Weblink/date last accessed…..*	Further Action / Clarification / Information Required?	Draft Concl Local Assessor	Final concl Lead assessor
14. Can you check if leachate collection system is at place and landfill dumping techniques are done in accordance with the ecological standard of Russia	PDD, /20/, /26/	Site visit. Visual observation, Interview /1/	Leaching gathering system is at place. All drainage and surface waters are gathered in a single reservoir and transported to the operation part of landfill for dumped waste to be used during moistening works Despite the negative conclusion for the /26/ issued by Sanitary Supervision body /20/, the operation practice can be assumed as complied to current norms because all comments raised by Sanitary Supervision body is concerned to some references to the invalid Sanitary Documents and were not referred to the current operation practice.		ok	ok	ok
15. Can you confirm that EMUE Specialized Motor-Transport Depot is an owner and operator of landfill and specify an owner of territory, documentary evidence is required.	PDD, /29/, /35/	Site visit	The Shirokorechenskiy SWDS land plot is in permanent use of EMUE Specialized Motor-Transport Depot since 1960 /29/. Current status of landfill (as EMUE's property) is confirmed by /35/.	/35/ The Resolution by Head of Ekaterinburg #50-з dd. Apr. 2, 1994 'About re-registration of land usage of EMUE Specialized Motor-Transport Depot.	ok	ok	ok
16. Can you	PDD	Site visit	The absence of gas gathering equipment is		ok	ok	ok

Checklist Question	Ref	MoV	Comments	Source/Means of Verification *Reference: document name, number, date of document, Para/page referred* *Weblink/date last accessed…..*	Further Action / Clarification / Information Required?	Draft Concl Local Assessor	Final concl Lead assessor
confirm that the landfills currently do not have equipment for the collection and destruction of Landfill gas		Vis. Obs.	confirmed with visual observation.				
17. Can you confirm if there are any contractual requirements for collection and destruction of landfill gas for the operator of the landfill (eg under the contract they have with the municipalities)	PDD, /26/, /29/, /35/	Site visit Check who is operating the landfill and who is the owner. Are there any contracts specifying how the landfill is operated	The EMUE Specialized Motor-Transport Depot is a landfill owner and operator as it is confirmed with /29/, /35/ and other documents don't mention any other operators. The EMUE Specialized Motor-Transport Depot is a municipal enterprise and directly managed by Municipality. Operation of landfill is regulated with /26/ As it was shown in answer to question 2, there are no municipal programs assumed landfill gas gathering or/and utilization.		ok	ok	ok
18. Can you also estimate the costs related to installation and operation of the project	PDD, /28/	DR Review documentation like contracts, feasibility	The cost of installation and operation of landfill gas gathering equipment is reflected in proposal to Gas Collecting and utilising system /28/ released by ECOCOM company – equipment supplier. The project costs are about EUR 1,909,330 +10%		ok	ok	ok

Checklist Question	Ref	MoV	Comments	Source/Means of Verification *Reference: document name, number, date of document, Para/page referred* *Weblink/date last accessed…..*	Further Action / Clarification / Information Required?	Draft Concl Local Assessor	Final concl Lead assessor
		studies etc	remuneration-2,100,000 EUR				
19. On the basis of design parameters and description of the equipment used in the project activity, please collect evidence of approximates on electricity consumption of electrical motors mentioned in Table A.4.2 page 7 and compressor facilities depicted in Scheme A.4.2. page 8.	PDD	site	The power consumption of gas gathering equipment is represented by equipment producer Ecocom company /36/. Gas booster station with high temperature flare: Stated power consumption – 37kW; Quantity of consumed power – 25-30 kWh; Annual consumption – 250 000 kWh.	/36/ Letter from General director of Ecocom Oliver Kaizer dd. Dec.3, 2007	ok	ok	ok
20. In the same line as item 19 above please check if the facility has on-site power plants.	PDD, /36/	site	Existing on the landfill diesel power plant #АД-60С-Т/400-2РМ1 has an additional function and is used only when power supply via centralized power line is switched off. Its generation capacity is about 60kW /37/	/37/ passport for diesel power plant #АД-60С-Т/400-2РМ1 dd. June 13, 2006.		ok	ok

Persons interviewed:

List persons interviewed during the determination, or persons contributed with other information.

/1/ Eugeniy Tkachuk, Chef-Engineer of YeMUE Specialized Motor-Transport Depot

/2/ Marat Latypov, Project Development Mnagemen, NSCF

Determination Protocol

Table 1 Participation Requirements for Joint Implementation (JI) Project Activities

REQUIREMENT	MoV	Ref	Comment	Draft finding	Concl
1.1. The project shall have the approval of the Parties involved	DR	Kyoto Protocol Article 6.1 (a)	No LoA was provided to the validator. In accordance with Governmental regulation #332 "On Procedure of Ratification and Checking of Projects Realization implemented in compliance with art. 6 of Kyoto Protocol to UNFCCC" dated 28.05.2007, the letter of approval is issued by Ministry of Economic Development and Trade of RF only after the determination process is completed.	CAR1	pending
1.2. Emission reductions, or an enhancement of removal by sinks, shall be additional to any that would otherwise occur	DR	Kyoto Protocol Article 6.1 (b)	Final judgement on the project additionality might be done upon the open	Pending Site visit	OK

REQUIREMENT	MoV	Ref	Comment	Draft finding	Concl
			issues closure Combined Tool was passed correctly by PP with proper substantiation		
1.3. The sponsor Party shall not aquire emission reduction units if it is not in compliance with its obligations under Articles 5 & 7	DR	Kyoto Protocol Article 6.1 (c)	The sponsor party is not indicated in the PDD. Information of the eligibility of Host Party is not available yet on UNFCCC website as per 25 March'08, refer to http://ji.unfccc.int/Eligibility	Obs 1	Obs1
1.4. The acquisition of emission reduction units shall be supplemental to domestic actions for the purpose of meeting commitments under Article 3	DR	Kyoto Protocol Article 6.1 (d)	As per 4th national communication, Russia has implemented policies and measures to reduce GHG emissions http://unfccc.int/resource/docs/natc/rusnc4r_rev.pdf Sponsor Party is not defined yet	Y	OK
1.5. Parties participating in JI shall designate national focal points for approving JI projects and have in place national guidelines and	DR	Marrakech Accords, JI Modalities, §20	Information on Russian focal point available on UNFCC website as per 25	Y	OK

REQUIREMENT	MoV	Ref	Comment	Draft finding	Concl
procedures for the approval of JI projects			March 2008 http://ji.unfccc.int/JI_Parties/Parties/index.html#Russian%20Federation Ministry for Economic Development and Trade of the Russian Federation 1st Tverskya-Yamskya Street 1.3 125993 Moscow Russian Federation Phone: + 7 495 200 03 47 Fax: +7 495 209 53 33 Email: Pluzhnikov@economy.gov.ru		
1.6. The host Party shall be a Party to the Kyoto Protocol	DR	Marrakech Accords, JI Modalities, §21(a)/24	The Russian Federation has ratified Kyoto protocol on 18 November 2004 http://maindb.unfccc.int/public/country.pl?country=RU	Y	OK
1.7. The host Party's assigned amount shall have been calculated and recorded in accordance with the	DR	Marrakech Accords, JI Modalities, §21(b)/24	parties are not yet available on UNFCCC website to be in	Obs1	Obs1

REQUIREMENT	MoV	Ref	Comment	Draft finding	Concl
modalities for the accounting of assigned amounts			compliance with Eligibility requirements as per 25 March 2008, refer to http://ji.unfccc.int/Eligibility		
1.8. The host Party shall have in place a national registry in accordance with Article 7, paragraph 4	DR	Marrakech Accords, JI Modalities, §21(d)/24	parties are not yet available on UNFCCC website to be in compliance with Eligibility requirements as per 25 march 2008, refer to http://ji.unfccc.int/Eligibility	Obs1	Obs1
1.9. The project desing document shall be made publicly available and Parties, stakeholders and UNFCCC accredited observers shall be invited to, within 30 days, provide comments	DR	Marrakech Accords, JI Modalities, §32	The project design document (PDD) was made publicly available in accordance with paragraph 32 of the JI guidelines. The secretariat published the referred PDD on the UNFCCC JI website under <http://ji.unfccc.int/JI_Projects/Verification/PDD/index.html> . Document was open for comments from 8	Y	OK

REQUIREMENT	MoV	Ref	Comment	Draft finding	Concl
			March 2008, until 6 April 2008 (17:00 GMT): The project is also undertaking a witnessing opportunity under JI for scope 13		
1.10. Documentation on the analysis of the environmental impacts of the project activity, including transboundary impacts, in accordance with procedures as determined by the host Party shall be submitted, and, if those impacts are considered significant by the project participants or the Host Party, an environmental impact assessment in accordance with procedures as required by the Host Party shall be carried out	DR	Marrakech Accords, JI Modalities, §33(d)	EIA is being developed. If it is in compliance with local legislation shall be validated during site visit Pending the results of the site visit and supportive documentation NIR 14 was transformed to FAR1: FAR 1: Respond to FAR 1 has to be verified before Final Determination report release. The project should get the State Expert's Conclusion on the project activity.	Pending site visit NIR 14	FAR1
1.11. The baseline for a JI project shall be the scenario that reasonably represents the GHG emissions or removal by sources that would occur in absence of the proposed project	DR	Marrakech Accords, JI Modalities, Appendix B	It is expected that the actual methane destroyed will be obtained from direct	Pending site visit NIR5, CAR6	OK

REQUIREMENT	MoV	Ref	Comment	Draft finding	Concl
			measurements of key parameters. The data will be used for calculating emissions reductions. The project following to the ACM0001 ver.8 guidelines uses “Tool to determine methane emissions from dumping waste at a solid waste disposal site” to calculate ex-ante baseline emissions. Baseline data, assumptions and data sources should be verified during site visit Correct Initial data and reasonable Uncertainty adjustments were applied NIR5,6 were closed out		
1.12. A baseline shall be established on a project-specific basis, in a transparent manner and taking into account relevant national and/or sectoral policies and circumstances	DR	Marrakech Accords, JI Modalities, Appendix B	Pending site visit, CAR4,NIR5, CAR6 Correct Initial data and reasonable Uncertainty	Pending site visit, CAR4,NIR5, CAR6	OK

REQUIREMENT	MoV	Ref	Comment	Draft finding	Concl
			adjustments were applied CAR4,NIR5,CAR6 were closed out		
1.13. The baseline methodology shall exclude to earn ERUs for decreases in activity levels outside the project activity or due to force majeure	DR	Marrakech Accords, JI Modalities Appendix B	Not applicable since this is a LFG project and there is no decreases of activity level	Y	OK
1.14. The project shall have an appropriate monitoring plan	DR	Marrakech Accords, JI Modalities, §33(c)	Pending issue New information was requested from the project participants in order to clarify which method for the determination of the flare efficiency was being used in the project activity. the project participants applied a 90% flare efficiency as suggested by the tool, which is acceptable. Meanwhile, it was point out that despite on default value used, this value can only be applicable for the periods where the monitored temperature is above the prescribed levels	NIR10	OK

REQUIREMENT	MoV	Ref	Comment	Draft finding	Concl
			of best operating conditions. NIR10 was closed		
1.15. Does the PDD use accurate and reliable information that can be verified in an objective manner?	DR		Pending feedback from site visit Discussion on accurate and reliable PDD data were positively closed.	Pending site visit NIR3, NIR16, NIR17, CAR8	OK
1.16. Will the project result in fewer GHG emissions than the baseline scenario?	DR		Pending feedback from site visit Confirmed by Local Assessment	Pending Site visit	OK

2 BASELINE METHODOLOGY(IES)

Flow chart	Answer	Next step
Does the project use an CDM approved baseline methodology	Yes	Complete table 2A
	~~No~~	~~Complete table 2B~~

Table 2A Application of approved methodology

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
As part of the determination, check if the selected approved methodology(ies) have been correctly applied. The determination of the additionality of the					

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
project is part of the methodology but is covered in table 4 *Using the WORD version of the PDD and a copy of the approved methodology(ies) undertake a section by section / line by line check of the PDD against the methodology. Answer all questions in this table to ensure that all parts of the methodology have been addressed. Highlight any deviations in the PDD and save using track changes mode. Compile the findings into UK.Findings.JI. Submit the PDD as part of the validation report.* *The methodology must be applied exactly as defined. Every parameter must be checked including formulas and the application of the formulas to calculate emissions and emission reductions (check spreadsheets if applicable). Check data sources – references to documents must be publicly available and cited fully in the PDD – a general web address is not sufficient..* *More than one methodology can be applied if the project consists of several activities. If this is the case, answer the questions below for each activity and methodology.*					
2.1 Does the project meet all the applicability criteria listed in the methodology	Meth PDD	DR	The project is applying methodology ACM0001, version 8 whose applicability criteria qualifies as a) captured gas is flared; and/or b) the captured gas is used to produced energy; c) the captured gas is used to supply consumers through natural gas distribution network. The proposed project activity corresponds to alternative a). In addition, the applicability conditions included in the Tools referred in the meth ACM0001 apply. Declaration in PDD on the use of the Tools applied by the project with except of "Combined tool to identify the baseline scenario and demonstrate additionality" is not consistent. Clear and transparent approach should be provided from the project proponent.	Pending CAR4	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			The issued were clarified and amended in PDD v.2. CAR 4 was closed		
2.2 Is the project boundary consistent with the approved methodology	PDD, Meth	DR	According to methodology the project boundary is the site of the project activity where the gas is captured and destroyed. However, if the electricity for project activity is sourced from grid, the project boundary shall include the power generation sources connected to the grid to which the project is connected. Pending explanations from the project The project agreed to monitor electricity consumed from Grid and amended MP, NIR5 was closed out	Pending NIR5	OK
2.3 Are the baseline emissions determined in accordance with the methodology described	PDD, meth	DR	The baseline emissions calculations are not clear and transparent. No indication on the option chosen in terms of estimation of destruction efficiency of the system, adjustment factor estimation, no consistent approach in demonstrating formulas used with comprehensive identification appropriate parameters, - Project proponents should elaborate further on the rationale of equation E.4.2 (PDD, page 30) as compare to equation 2 of the tool for calculation of emissions from solid waste disposal. Clarifications were made and detailed in the PDD v2, closed out	Pending NIR5 NIR7	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
2.4 Are the project emissions determined in accordance with the methodology described	PDD meth	DR	Amount of methane destroyed by the project activity during the certain year of the project activity will be determined ex post by metering the actual quantity of methane captured and destroyed once the project activity is operational. The methane destroyed is determined by monitoring the quantity of methane actually flared. - Project emissions from electricity consumption have been ignored, which goes against ACM001 v08 - For the estimation of project emissions from flaring, project proponents need to clarify the selected approach for the determination of the efficiency of the flare PP clarified the approach in the PDD v2, closed out	Pending CAR7 NIR7 NIR23	OK
2.5 Is the leakage op the project activity determined in accordance with the methodology described	PDD meth	DR	No leakage effects need to be accounted under this methodology.	Y	OK
2.6 Are the emission reductions determined in accordance with the methodology described	PDD meth	DR	Pending CAR 4, NIR5, CAR6, CAR7 PP clarified in PDD v 2	Pending CARs ,NIR	OK
2.7 Has the methodology been applied exactly as defined including formulas and the application of the formulas to calculate emissions and emission reductions *check spreadsheets if applicable*.	PDD meth	DR	Description of the methodology applied is not clear Pending CAR 4, NIR5, CAR6 PP clarified in PDD v 2	Pending CARs ,NIR	OK
2.8 Are all the data sources clear and are references to	PDD	DR	the data sources are not clear and not cited	Pending	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
documents publicly available and cited fully in the PDD	meth		fully in the PDD Pending CAR 4, NIR5, CAR6 PP clarified in PDD v 2	CARs ,NIR	

~~**Table 2B Baseline methodology not using an approved CDM methodology**~~

~~CHECKLIST QUESTION~~	~~Ref.~~	~~MoV*~~	~~COMMENTS~~	~~Draft Concl.~~	~~Final Concl~~
~~**1. Project Baseline**~~ ~~The validation of the project baseline establishes whether the selected baseline methodology is appropriate and whether the selected baseline represents a likely baseline scenario.~~					
~~**1.1. Baseline Methodology**~~ ~~It is assessed whether the project applies an appropriate baseline methodology.~~					
~~1.1.1. Is the discussion and selection of the baseline methodology transparent?~~					
~~1.1.2. Are all aspects related to direct and indirect GHG emissions captured in the project design?~~					
~~1.1.3. Does the baseline methodology specify data sources and assumptions?~~					
~~1.1.4. Does the baseline methodology sufficiently describe the underlying rationale for the algorithm/formulae used to determine baseline emissions (e.g. marginal vs. average, etc.)~~					
~~1.1.5. Does the baseline methodology specify types of~~					

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
variables used (e.g. fuels used, fuel consumption rates, etc)?					
1.1.6. Does the baseline methodology specify the spatial level of data (local, regional, national)?					
1.1.7. Is the application of the methodology and the discussion and determination of the chosen baseline transparent?					
1.1.8. Has the baseline been determined using conservative assumptions where possible?					
1.1.9. Has the baseline been established on a project-specific basis?					
1.1.10. Does the baseline scenario sufficiently take into account relevant national and/or sectoral policies, macro-economic trends and political aspirations?					
1.1.11. Have the major risks to the baseline been identified?					
2. Calculation of GHG Emissions by Source *It is assessed whether all material GHG emission sources are addressed and how sensitivities and data uncertainties have been addressed to arrive at conservative estimates of projected emission reductions.*					
2.1.1. Are the GHG calculations documented in a complete and transparent manner?					
2.1.2. Have conservative assumptions been used to calculate project GHG emissions?					
2.1.3. Are uncertainties in the GHG emissions estimates properly addressed in the documentation?					
2.1.4. Are potential leakage effects beyond the chosen project boundaries properly identified?					

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
2.1.5. Have these leakage effects been properly accounted for in calculations?					
2.1.6. Does the methodology for calculating leakage comply with existing good practice?					
2.1.7. Are the calculations documented in a complete and transparent manner?					
2.1.8. Have conservative assumptions been used when calculating leakage?					
2.1.9. Are uncertainties in the leakage estimates properly addressed?					
2.1.10. Have the project baseline(s) and the project emissions been determined using the same appropriate methodology and conservative assumptions?					

Table 3 Additionality

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
The project is results in reductions of GHG emissions or increases in sequestration when compared to the baseline; and the project can be reasonably shown to be different from the baseline scenario. Additionality will need to be determined in accordance with the relevant section of the approved methodology. Information provided to support the claims of additionality will need to be verified					
3.1 Is the discussion and selection of the baseline transparent?	PDD meth	DR	Waiting confirmation from the local assessor that there are no requirements to capture/destroy LFG in Russian Federation so far Legal or contractual obligation to burn landfill gas during project operations will be followed up by PP PP detailed BL calculation formulas and amended PP	Pending site visit, CAR 2 CAR22	OK
3.2 Is the discussion on the additionality clear and have all assumptions been supported by transparent and documented evidence	PDD meth	DR	Waiting confirmation from the local assessor that the assumptions are verified and evidence are documented. PP provided documentary support to project additionality, closed out	Pending site visit, CAR 2	OK
3.3 Does the selected baseline represent the most likely scenario among other possible and/or discussed scenarios?	PDD meth	DR	Pending feedback from local assessor Combined Tool on baseline selection was properly applied and substantiated	Pending site visit, CAR 2	OK
3.4 Is it demonstrated/justified that the project activity itself is not a likely baseline scenario	PDD meth	DR	Yes, proposed project activity is not likely baseline scenario. It is demonstrated using ”Combined tool to identify the baseline scenario and demonstrate additionality” , v.02.1 In addition a query to Local assessor was addressed to check at the site	Pending site visit, CAR 2	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			Pending feedback from the local assessor. During the audit of an industrial-economic zone of the landfill site neither flare installations nor top parts of wells have been found. Currently the LFG is venting into atmosphere. Combined Tool on baseline selection was properly applied and substantiated		
3.5 Are all the data sources clear and are references to documents publicly available and cited fully in the PDD	PDD meth	DR	pending feedback from the local assessor., NIR2 Confirmed by Local assessment	Pending site visit, CAR 2	OK

4 MONITORING METHODOLOGY(IES)

Flow chart	Answer	Next step
Does the project use an CDM approved monitoring methodology	Yes	Complete table 4A
	~~No~~	~~Complete table 4B and table~~

Table 4A Application of an approved Monitoring methodology

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
As part of the determination, check if the selected approved methodology(ies) have been correctly applied. *Using the WORD version of the PDD and a copy of the approved methodology(ies) undertake a section by section / line by line check of the PDD against the methodology. Answer all questions in this table to ensure that all parts of the methodology have been addressed. Highlight any deviations in the PDD and save using track changes mode. Compile the findings into UK.Findings.JI. Submit the PDD as part of the validation report.*					

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
The methodology must be applied exactly as defined. Every parameter must be checked including formulas and the application of the formulas to calculate emissions and emission reductions (check spreadsheets if applicable). Check data sources – references to documents must be publicly available and cited fully in the PDD – a general web address is not sufficient.. *More than one methodology can be applied if the project consists of several activities. If this is the case, answer the questions below for each activity and methodology.*					
4.1 Does the project meet all the applicability criteria listed in the monitoring methodology	PDD meth	DR	Monitoring ACM0001 methodology, version 8 is applicable to landfill gas capture project activities, where the baseline scenario is the partial or total atmospheric release of the gas and the project activities include situations such as the captured gas is flared. What is a case for the validated project.	Y	Y
4.2 Does the PDD provide for the monitoring of the baseline emissions as required in the monitoring methodology	PDD meth	DR	Baseline for methane emissions is determined as the total amount of landfill gas captured/destroyed. Monitoring methodology is based on direct measurement of the amount of landfill gas captured and destroyed at the flare platform. No monitoring of baseline emissions is required.	Y	Y
4.3 Does the PDD provide for the monitoring of the project emissions as required in the monitoring methodology			The monitoring plan should make explicitly clear that monitoring procedures established by any Tool referred into the PDD will be followed accordingly. Appropriate Monitoring Plan was finalised	Pending CAR24	OK
4.4 Does the PDD provide for the monitoring of the leakage as required in the monitoring methodology			N/A, leakage is not accounted under the methodology	Y	OK
4.5 Has the methodology been applied exactly as			methodology has not been applied exactly	Pending	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
defined including formulas and the application of the formulas to calculate emissions and emission reductions *check spreadsheets if applicable*.			as defined including formulas and the application of the formulas to calculate emissions and emission reductions PP detailed monitoring procedures and amended PDD v 2	NIR11, CAR 12	
4.6 Does the PDD provide for Quality Control (QC) and Quality Assurance (QA) Procedures as required in the monitoring methodology			PDD does not provide for Quality Control (QC) and Quality Assurance (QA) Procedures as required in the monitoring methodology PP detailed monitoring procedures and amended PDD v 2	Pending NIR13, CAR12	OK

~~**Table 4B Monitoring methodology not using an approved CDM methodology**~~

~~CHECKLIST QUESTION~~	~~Ref.~~	~~MoV*~~	~~COMMENTS~~	~~Draft Concl.~~	~~Final Concl.~~
~~**4.1 Monitoring Methodology**~~ ~~It is assessed whether the project applies an appropriate baseline methodology.~~					
~~1.1.1. Does the monitoring methodology reflect good monitoring and reporting practices?~~					
~~1.1.2. Is the selected monitoring methodology supported by the monitored and recorded data?~~					
~~1.1.3. Are the monitoring provisions in the monitoring methodology consistent with the project boundaries in the baseline study?~~					

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
1.1.4. Have any needs for monitoring outside the project boundaries been evaluated and if so, included as applicable?					
1.1.5. Does the monitoring methodology allow for conservative, transparent, accurate and complete calculation of the ex post GHG emissions?					
1.1.6. Is the monitoring methodology clear and user friendly?					
1.1.7. Does the methodology mitigate possible monitoring errors or uncertainties addressed?					
1.2. Monitoring of Project Emissions It is established whether the monitoring plan provides for reliable and complete project emission data over time.					
1.2.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for estimation or measuring the greenhouse gas emissions within the project boundary during the crediting period?					
1.2.2. Are the choices of project GHG indicators reasonable?					
1.2.3. Will it be possible to monitor / measure the specified project GHG indicators?					
1.2.4. Will the indicators enable comparison of project data and performance over time?					

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
1.3. Monitoring of Leakage It is assessed whether the monitoring plan provides for reliable and complete leakage data over time.					
1.3.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining leakage?					
1.3.2. Have relevant indicators for GHG leakage been included?					
1.3.3. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining leakage?					
1.3.4. Will it be possible to monitor the specified GHG leakage indicators?					
1.4. Monitoring of Baseline Emissions It is established whether the monitoring plan provides for reliable and complete project emission data over time.					
1.4.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining the baseline emissions during the crediting period?					
1.4.2. Is the choice of baseline indicators, in particular for baseline emissions, reasonable?					
1.4.3. Will it be possible to monitor the specified baseline indicators?					

Table 5 Monitoring plan

CHECKLIST QUESTION	Ref.	MoV *	COMMENTS	Draft Concl	Final Concl
In addition to the application of the monitoring methodology, the PDD should contain a monitoring plan. The content of the monitoring plan should be validated based on the questions below					
5.1 Monitoring of Sustainable Development Indicators/ Environmental Impacts *It is checked that choices of indicators are reasonable and complete to monitor sustainable performance over time.*	PDD	DR	Monitoring of Sustainable Development Indicators/ Environmental Impacts is not presented Pending NIR10,NIR11,NIR13 PP detailed monitoring procedures and amended PDD v 2	Pending NIR10, NIR11, NIR13	ok
5.1.1 Does the monitoring plan provide the collection and archiving of relevant data concerning environmental, social and economic impacts?	PDD	DR	Pending NIR10,NIR11,NIR13 PP detailed monitoring procedures and amended PDD v 2	Pending NIR10, NIR11, NIR13	ok
5.1.2 Is the choice of indicators for sustainability development (social, environmental, economic) reasonable?	PDD	DR	Pending NIR10,NIR11,NIR13 PP detailed monitoring procedures and amended PDD v 2	Pending NIR10, NIR11, NIR13	ok
5.1.3 Will it be possible to monitor the specified sustainable development indicators?	PDD	DR	Pending NIR10,NIR11,NIR13 PP detailed monitoring procedures and amended PDD v 2	Pending NIR10, NIR11, NIR13	ok
5.1.4 Are the sustainable development indicators in line with stated national priorities in the Host Country?	PDD	DR	Pending NIR10,NIR11,NIR13 PP detailed monitoring procedures and amended PDD v 2	Pending NIR10, NIR11, NIR13	ok
5.2 Project Management Planning *It is checked that project implementation is properly prepared for and that critical arrangements are addressed.*	PDD	DR	Project Management Planning is not worked out Pending NIR10,NIR11,NIR13,CAR12 PP detailed monitoring procedures and amended PDD v 2	Pending NIR10, NIR11, NIR13, CAR12	ok

CHECKLIST QUESTION	Ref.	MoV *	COMMENTS	Draft Concl	Final Concl
5.2.1 Is the authority and responsibility of project management clearly described?	PDD	DR	Pending NIR10,NIR11,NIR13,CAR12 PP detailed monitoring procedures and amended PDD v 2	Pending NIR10, NIR11, NIR13, CAR12	ok
5.2.2 Is the authority and responsibility for registration, monitoring, measurement and reporting clearly described?	PDD	DR	Pending NIR10,NIR11,NIR13,CAR12 PP detailed monitoring procedures and amended PDD v 2	Pending NIR10, NIR11, NIR13, CAR12	ok
5.2.3 Are procedures identified for training of monitoring personnel?	PDD	DR	Pending NIR10,NIR11,NIR13,CAR12 PP detailed monitoring procedures and amended PDD v 2	Pending NIR10, NIR11, NIR13, CAR12	ok
5.2.4 Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?	PDD	DR	Pending NIR10,NIR11,NIR13,CAR12 PP detailed monitoring procedures and amended PDD v 2	Pending NIR10, NIR11, NIR13, CAR12	ok
5.2.5 Are procedures identified for calibration of monitoring equipment?	PDD	DR	Pending NIR10,NIR11,NIR13,CAR12 PP detailed monitoring procedures and amended PDD v 2	Pending NIR10, NIR11, NIR13, CAR12	ok
5.2.6 Are procedures identified for maintenance of monitoring equipment and installations?	PDD	DR	Pending NIR10,NIR11,NIR13,CAR12 v	Pending NIR10, NIR11, NIR13, CAR12	ok
5.2.7 Are procedures identified for monitoring, measurements and reporting?	PDD	DR	Pending NIR10,NIR11,NIR13,CAR12 PP detailed monitoring procedures and amended PDD v 2	Pending NIR10, NIR11, NIR13,	ok

CHECKLIST QUESTION	Ref.	MoV *	COMMENTS	Draft Concl	Final Concl
				CAR12	
5.2.8 Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	PDD	DR	Pending NIR10,NIR11,NIR13,CAR12 PP detailed monitoring procedures and amended PDD v 2	Pending NIR10, NIR11, NIR13, CAR12	ok
5.2.9 Are procedures identified for dealing with possible monitoring data adjustments and uncertainties?	PDD	DR	Pending NIR10,NIR11,NIR13,CAR12 PP detailed monitoring procedures and amended PDD v 2	Pending NIR10, NIR11, NIR13, CAR12	ok
5.2.10 Are procedures identified for review of reported results/data?	PDD	DR	Pending NIR10,NIR11,NIR13,CAR12 PP detailed monitoring procedures and amended PDD v 2	Pending NIR10, NIR11, NIR13, CAR12	ok
5.2.11 Are procedures identified for internal audits of GHG project compliance with operational requirements where applicable?	PDD	DR	Pending NIR10,NIR11,NIR13,CAR12 PP detailed monitoring procedures and amended PDD v 2	Pending NIR10, NIR11, NIR13, CAR12	ok
5.2.12 Are procedures identified for project performance reviews before data is submitted for verification, internally or externally?	PDD	DR	Pending NIR10,NIR11,NIR13,CAR12 PP detailed monitoring procedures and amended PDD v 2	Pending NIR10, NIR11, NIR13, CAR12	ok
5.2.13 Are procedures identified for corrective actions in order to provide for more accurate future monitoring and reporting?	PDD	DR	Pending NIR10,NIR11,NIR13,CAR12 PP detailed monitoring procedures and amended PDD v 2	Pending NIR10, NIR11, NIR13, CAR12	ok

Table 6 Environmental Impacts (Ref PDD Section F and relevant local legislation)

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
Project participants have submitted to the designated operational entity documentation on the analysis of the environmental impacts of the project activity, including transboundary impacts and, if those impacts are considered significant by the project participants or the host Party, have undertaken an environmental impact assessment in accordance with procedures as required by the host Party					
6.1 Has an analysis of the environmental impacts of the project activity been sufficiently described?	PDD	DR	Documentary evidence on EIA proof should be submitted by the project Pending NIR14 PP detailed PDD section F, closed out	Pending NIR14	OK
6.2 Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?	PDD	DR	Pending NIR14 NIR 14 was transformed to FAR1: FAR 1: Respond to FAR 1 has to be verified before Final Determination report release. The project should get the State Expert's Conclusion on the project activity.	Pending NIR14	FAR1
6.3 Will the project create any adverse environmental effects?	PDD	DR	Pending NIR14 Adverse environmental effects are insignificant.	Pending NIR14	OK
6.4 Are transboundary environmental impacts considered in the analysis?	PDD	DR	Pending NIR14 Transboundary environmental impacts are not identified	Pending NIR14	ok
6.5 Have identified environmental impacts been addressed in the project design?	PDD	DR	Pending NIR14 PP detailed PDD Section F, closed out	Pending NIR14	OK
6.6 Does the project comply with environmental legislation in the host country?	PDD	DR	Pending NIR14 The project is in line of RU regulations	Pending NIR14	OK

Table 7 Comments by local stakeholders (Ref PDD Section G)

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
Project developers need to invite comments by local stakeholders and a summary of the comments received should be provided. The project developer will					

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
need to show that due account was taken of any comments that have been received					
7.1 Have relevant stakeholders been consulted?	PDD	DR	Proof on stakeholders process as per RU norms was confirmed during local assessment	Pending NIR15	OK
7.2 Have appropriate media been used to invite comments by local stakeholders?	PDD	DR	Pending NIR15 Announcement of project activity and invitation on submission of public feedback was provided through the newspaper Vecherniy Ekaterinburg dd 27-02-2008	Pending NIR15	OK
7.3 If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	PDD	DR	Pending NIR15 Stakeholder process is required and was well organised, closed out	Pending NIR15	OK
7.4 Is a summary of the stakeholder comments received provided?	PDD	DR	Pending NIR15 No comments from either International or local stakeholders arrived	Pending NIR15	OK
7.5 Has due account been taken of any stakeholder comments received?	PDD	DR	Pending NIR15 Not applicable	Pending NIR15	OK

Table 8 Other requirements

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
8.1 Project Design Document *In a WORD version of the PDD, use track changes mode to note any deviations (however minor) from the PDD. Save this document with tracked changes showing and append it to the Validation report as evidence of the auditing process. Compile a list of the differences in UK.Findings.JI. Split these into Editorial and Substantive comments. Editorial issues can be listed on one CAR; substantive findings can be listed as individual findings*					
8.1.1 Editorial issues: does the project correctly apply	PDD	DR	No problems found with use of template	Y	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
the PDD template and has the document been completed without modifying/adding headings or logo, format or font.					
8.1.2 Substantive issues: does the PDD address all the specific requirements under each header. If requirements are not applicable / not relevant, this must be stated and justified	PDD	DR	No substantive issues observed	Y	OK
8.2 Technology to be employed *project activities should lead to the transfer of environmentally safe and sound technologies and know-how. The validator should ensure that environmentally safe and sound technology and know-how is used.*					
8.2.1 Does the project design engineering reflect current good practices?	PDD	DR	Pending NIR 18 It was learned form Contract Supplier about the German company Haase Energietechnik Plc. This firm is a designer and a producer of landfill gas to energy systems, leachate treatment systems and systems for treatment of industrial gases and it has been producing and operating landfill gas equipment for more than 20 years in many countries. The company is the best on today's landfill gas equipment market to meet environment requirements in Germany (TA-Luft), UK Emission Standards for Landfill Gas Flares. The clarification for the current LFG project was accepted and NIR18 was closed out.	Pending NIR 18	ok
8.2.2 Does the project use state of the art technology or would the technology result in a significantly better performance than any commonly used technologies in the host country?	PDD	DR	Pending NIR 18 Yes, confirmed, see point 8.2.1	Pending NIR 18	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
8.2.3 Is the project technology likely to be substituted by other or more efficient technologies within the project period?	PDD	DR	Pending NIR 19 Environmental Projects declares on non-change of the project technology within the project period. The project explanations were accepted and resulted in the closure of NIR 19.	Pending NIR 19	OK
8.2.4 Does the project require extensive initial training and maintenance efforts in order to work as presumed during the project period?	PDD	DR	Pending NIR 20 The project activities will require training for personnel but level of expertise is not so high to put the project in risk The project confirmed on necessity staff training. Meanwhile, the pending Delivery Contract with Supplier will provide training for local project staff (technicians and operators) to enable them to undertake the tasks required for both proper operation of the Project facilities and implementation of the monitoring plan before the Project become operational. Also the supplier will perform the necessary supervising of equipment maintenance. NIR 20 was transformed to FAR 3: Respond to FAR 3 has to be verified before Initial verification and/or 1st periodic starting date. The project should present evidences to demonstrate compliance with training needs by that date.	Pending NIR 20	OK
8.3 Duration of the Project/ Crediting Period *It is assessed whether the temporary boundaries of the project are clearly defined.*					
8.3.1. Are the project's starting date and operational lifetime clearly defined and reasonable?	PDD	DR	Starting date is planned in November 2008, lifetime of 15-20 years	Y	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			which is reasonable assuming proper operation and maintenance		
8.3.2. Is the assumed crediting time clearly defined and reasonable?	PDD	DR	Yes, first commitment period: 01.01.2009-31.12.2012	Pending NIR21	OK
8.3.3. Does the project's operational lifetime exceed the crediting period	PDD	DR	yes	Y	OK

Table 9 Additional requirements for AR projects (based on CDM requirements) - NA

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
~~10.1 Does the PDD specifically consider impacts on biodiversity and natural ecosystems, in addition to socio-economic and environmental impacts?~~					
~~10.2 Are management activities, including harvesting cycles and verification programmes chosen to avoid a systemic verification of peaks in carbon stocks?~~					
~~10.3 Has the project undergone international public consultation for a period to 45 days?~~					
~~10.4 Have selected carbon pools been be ignored in accordance with the conditions described in Para 21 of Decision 19/CP.9 and does the project avoid double counting?~~					

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
~~10.5 Has a project lifetime of 20 years renewable three times or 30 years been selected?~~					
~~10.6 Does the monitoring plan take account of issues related to biodiversity and natural ecosystems identified elsewhere in the PDD?~~					
~~10.7 Is the application of lCERs and tCERs accounting regimes consistent with Sections J and K and Decision 19/CP.9?~~					
~~10.8 Note Appendix B highlighting the differences in the PDD, the PDD template for AR projects and the guidelines, available at http://cdm.unfccc.int/Reference/Documents~~					

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FINDINGS OVERVIEW

FINDINGS FROM VALIDATION OF *[INSERT NAME AND PROJECT NUMBER]*

Each Table below represents a finding from the validation assessment. The findings are numbered consecutively, approximately in the order that they have been identified.

Description of table:

Type	Findings are either New Information Requests (NIR) or Corrective Action Requests (CAR). CARs are items that must be addressed before a project can receive a recommendation for registration. NIRs may lead to the raising of CARs. Observations are included at the end and may or may not be addressed. They are primarily to act as signposts for the verifying DOE.
Issue	Details the content of the finding
Ref	refers to the item number in the Validation Protocol
Response	Please insert response to finding, starting with the date of entry.

Rows for comments and further response will be appended to the table until the Findings has been addressed to the satisfaction of the Lead Assessor.

Please note that this is an open list and more findings may be added as validation progresses.

Date: Raised by: Elton Chen/Elena Krasnova

No.	Type	Issue	Ref
1	CAR	Please provide evidence that the project has the approval of all the Parties. Despite at the stage of the validation the approval may not have provided, at the time of requesting registration the approval by the Party (ies) involved is required.	1.1
Date: 12/05/08 [Comments] Such evidence cannot be provided because according to the statement of 28 May 2007 #332 'about the rules of affirmation and checking of JI project realization, that are implementing with the use of 6-th article of Kyoto Protocol of UN FCCC' the project must get approval from the independent determinator. And only after that this project will get approval from the Parties. Therefore CAR 1 can be answered after the approval of determinator.			
Date: 27-05-2008 – SGS representative – Elena Krasnova/Elton Chen In accordance with Governmental regulation #332 dated 28.05.2007, the letter of approval is issued by Ministry of Economic Development and Trade of RF only after the determination is completed. A draft determination report will reflect a pending status of the LoA. [Acceptance and close out] –[27-05-2008] – CAR 1 is open			

Date: Raised by: Elton Chen/Elena Krasnova

No.	Type	Issue	Ref
2	CAR	Baseline selection and additionality assessment of the project activity needs to be further substantiated: - it is not clear if the continuation of the current situation is in	3.1

		compliance with RF laws, i.e. please proof that there are no requirements to capture/destroy LFG in Russian Federation so far; - in barrier analysis for each of the scenarios please provide transparent and documented evidence to demonstrate the existence and significance of the identified barriers as mentioned in the PDD - evidence for techno-economic parameters and assumptions made for financial indicators calculations in investment analysis part; - calculations of financial analysis with/without sale of ERUs in excel spreadsheet format - detailed cash flow data in excel spreadsheet format; - evidence on the risks associated with investment are taken into account - Sensitivity analysis for the economic parameters of the project activity needs to be provided by the project proponent - during common practice analysis please provide an analysis on similar activities implemented previously or currently underway, other registered JI project activities are not to be included in this analysis. Provide documentary evidence and relevant information.	

Date: 12/05/2008
[Comments]

Finding: it is not clear if the continuation of the current situation is in compliance with RF laws, i.e. please proof that there are no requirements to capture/destroy LFG in Russian Federation so far;

Comment:
On the federal level the regulation of solid waste disposal sites management is based on two main documents, which are:
1/ Sanitary regulations «Hygienic requirements to the arrangement and management of solid waste disposal sites» SP 2.1.7. 1038-01 dated 30/05/1996 and adopted by the Chief sanitary inspector of Russian Federation.
2/ Sanitary regulations and norms «Hygienic requirements to the disposal and sterilization of waste and consumption residue» SaN PiN 2.1.7. 1322-03 adopted by the Chief sanitary inspector of Russian Federation dated 30/04/2003.

These documents contain no provisions for capture/destroy LFG.

Besides, on the regional level, there is strategic plan of the city of Ekaterinburg development exist which is approved by the Decree #40/6 at 10.06.2003 issued by the legislative body of the Ekaterinburg City . This Plan contains strategic project “Waste management” which is also doesn’t have any recommendations or requirements to capture/destroy LFG.

In the site level, the there is no options to capture/destroy LFG. You can see the scheme of basic operation translated from “Instruction of “Shirokorechensky landfill site operation” into English (see attachment 1).

So, these documents are obvious evidences that there are no legal requirements to capture/destroy LFG in the Russian Federation.

- *in barrier analysis for each of the scenarios please provide transparent and documented evidence to demonstrate the existence and significance of the identified barriers as mentioned in the PDD*

Comment:

Investment barrier:

Alternative scenario 1. Continuation of current situation followed by closing and conserving the landfill site without collecting and flaring of landfill gas.

The PDD indicates that "Influence of investment barrier on this scenario is not significant, as no large investment is needed. All costs including operation, closure of the sites and land reclamation shall be covered from local budget that allocate the funds incoming from the landfill. The source of these funds is tariffs for disposal of waste at the landfill. So, the barrier for this scenario does not exist"
As evidence to support this argumentation Calculation of the financing requirement and tariffs for solid waste disposal presented by the entity operating solid waste site "Shirokorechenskiy"), EMUP " Spetsavtobaza" is attached. See attachment 2.
As can be seen from this document all expenses need for day-to-day management of Shirokorechenskiy landfill site covered by the tariff, which is calculated according to these expences. Also this document evidences that no sources for any other activity (i.e. the Project)

Alternative scenario 2. The Project itself, i.e. gathering and burning the landfill gas (without being registered as Joint Implementation).

The PDD indicates that "Due to large capital investments in this Project and lack of clear commercial profit (beyond JI) the Project is not of interest for potential investors. From this point of view, there is a significant investment barrier for such scenario.".
To confirm that the Project is really a large investment the commercial offer from a supplier of LFG capture and flaring technology, Ecocom Climate Protection Umweltschutz GmbH is attached. See attachment 3.

Technological barrier:

Alternative 1.
The PDD states "This scenario does not have a technological barrier as the continuation of current situation represented by closure and conservation of the landfill sites shall be carried out in accordance with regulations related to the management of the solid waste disposal sites and is, in fact, usual practice in the Russian Federation. The entity that currently operates the landfill has the necessary personnel and equipment for fulfillment of this scenario. Thus, a realization of this alternative does not represent a technological risk and, respectively, in such case this barrier does not exist."

These regulations are "Instructions on "Shirokorechensky landfill site operation". The full Russian version was submitted to Vladimir Lukin from SGS Moscow office during the site visit.

Alternative 2.

The PDD states "On the way to development of this scenario there is a serious technological barrier as the technology to be used in the Project does not have analogue in the Russian practice. Because of lack of skills in operation of such equipment, the Project operators will face all the risks inherent in start-up, adjustment and operation of new equipment without having in place a tested process procedure.

Since this technology is innovative, the Project operator would need to recruit and train technical

personnel capable to provide for trouble-free operation of equipment. Lack of process procedure would cause some difficulties related to training the personnel."

The existing legal base in the Russian Federation for landfill sites management does not require to capture and destroy LFG (please see sanitary regulations and norms indicated above). It means that such kind of projects are not developed in Russia so far as they have no rational without JI mechanism application. Therefore, the technology is technically innovative in Russia. That means no technological procedure; no trained staff are available for such projects nowadays.

- evidence for techno-economic parameters and assumptions made for financial indicators calculations in investment analysis part;

Comment: the investment analysis was based on information presented in the Preliminary commercial offer submitted by Ecocom Climate Protection Umweltsutz GmbH to the Project owner, *Center of Ecological Projects (CEP)* from Ekaterinburg. The original offer in Russian is attached (see attachment 3 in pdf-format). The English translation is also attachment 3, in WORD format.

- calculations of financial analysis with/without sale of ERUs in excel spreadsheet format
- detailed cash flow data in excel spreadsheet format;

Comment: please use the attachment 7 (Shirokorechenskiy LFG flaring project) and find the sheet "Economy effectiveness"

- evidence on the risks associated with investment are taken into account

Comment: There are three main kinds of risk associated with the project:

1) Construction risk. It means that project would start operating later than it was planned due to failure of meeting construction deadline. This risk was mitigated by collaborating with highly experienced company ECOCOM www.ecocom.at . The company has profound experience in LFG utilization in the Ukraine, Latvia and Russia.

2) Performance risk. This kind of risk is connected to lack of experienced staff who will operate the Project technological equipment. Under agreement with *CEP*, ECOCOM will train the staff so the risk will be mitigated considerably.

3) Financial risk. The risk is associated with the situation that due to lack of incomes the *CEP* will get a loss. The only source of income for this project is ERUs selling. For evaluation of this source ACM 0001 methodology was chosen and applied. Ramenskiy Regional Environmental Center explored the Shirokorechenskiy landfill in order to estimate biogas reserves of this site. Total amount of emission reductions is 358,378 tons of CO2 equivalent. It will allow to get 3 583 378 euro (with the average price 10 euro per ton). This sum will allow not only to recoup the project, but also to get profit.

- Sensitivity analysis for the economic parameters of the project activity needs to be provided by the project proponent

Comment:

The sensitivity analysis has been performed by varying the following key assumptions: Cost of investment and EUR price.

In the first upside scenario investment cost have been decreased on 10 % (up to 1,908 million Euro, instead of 2,120 million Euro), it would increase project IRR on 5,05 %, that would give essential economic advantages by realization of the project.

In the more pessimistic scenario, under negative tendencies of economy development, the investment cost has been required to increase. Their presumable increasing on 10 % (up to 2,322 million Euro) would lead to reduction of project IRR on 4,57 % that is rather essential.

The Influence on project economic attraction of EUR price less significant. In the optimistic scenario, with increasing EUR price on 10 %, the project IRR would increase on 2,39 %. As a result of the pessimistic scenario, with EUR price reduction on 10 %, the project IRR would reduce on 2,48 %.

The project is very capital intensive and also sensitive to the investment cost. The size of investments gives an essential influence on parameters of economic efficiency. EUR price changing give a less essential influence on the project.

The main findings of the sensitivity analysis

Instruction on how to make the sensitivity analysis (please use Shirikorechenskiy LFG project model – see shortcut above)

Sheet "Economy effectiveness"

Assumption	Investment cost up by 10%	Investment cost down by 10%	EUR price up by 10%	EUR price down by 10%
Project IRR %	18,48 %	28,1 %	25,44 %	20,57 %

Investment cost changes

Step 1. Change the value in cell B2 (investment cost): Put in cell B2 the value =2 322 (2 322 = 2 120* (100%+10%)).
Step 2. Look at cell D57, take the value of IRR.
Step 3. Change the value in cell B2 (investment cost): Put in cell B2 the value =1908 (1908 = 2 120* (100%-10%)).
Step 4. Look at cell D57, take the value of IRR.

EUR price changes

Step 1. Change the value in cell D23 (EUR price): Put in cell D23 the value = 11 (11 = 10* (100%+10%)).
Step 2. Look the cell D57, take the value of IRR.
Step 3. Change the value in cell D23 (EUR price): Put in cell D23 the value = 9 (9 = 10* (100%-10%)).
Step 4. Look at cell D57, take the value of IRR.

- *during common practice analysis please provide an analysis on similar activities implemented previously or currently underway, other registered JI project activities are not to be included in this analysis. Provide documentary evidence and relevant information*

Comment:

As for the 'Common practice' nowadays in Russia there is no such activity for capture/destroy LFG without JI. But in the past there were two examples. In PDD "Landfill gas recovery in Moscow Region – landfill site Timochovo" determined by SGS was described two projects for LFG treatment without JI. One of them was the "Kargashino" LFG- to- energy project and the other one the "Dashkova" LFG collection and utilization system. The systems installed included several

vertical and horizontal gas wells and a landfill gas collection systems, which were connected to the gas wells.

The landfill gas was either burned in a flaring system or in a gas engine depending on its quality. The "Kargashino" LFG- to- energy system was situated not far from the city of Mytishi (Moscow region). It was in operation from 28.02.96 to 16.10.96 and worked 2769 hours. 140.801m^3 of landfill gas was extracted by using three landfill gas extraction wells installed on a waste mass of 61. 041 tones. The recovery rate was 60% and the gas generation potential of the degassed landfill part was assessed with 742.396 m^3 per year.
The "Dashkova" LFG collection and utilization system situated in the south-west of the city of Serpukhov (also Moscow region) was in operation from 17.01.95 to 13.12.96; it worked 9616 hours and extracted 310.980 m^3 of LFG by using three landfill gas extraction wells installed on a waste mass of 62.250 tons. The recovery rate was 40% and the gas generation potential of the degassed landfill part was assessed with 708.242 m^3 per year.
After successful implementation of the LFG collection and utilization systems the systems worked between half a year and two years without major problems and were turning landfill gas to electricity. The electricity was used for operational needs of the landfill territory itself and supplied to the village situated next to the landfill.
Due to operation costs and maintenance works in connection with the very low tariffs for electricity in the Russian Federation the whole landfill gas collection and utilization systems were stopped after half a year and two years of successful operation. The main problem was that the grant used for financing the LFG collection and utilization systems financed only construction of the systems but not their operation and due to the low feed in tariffs for electricity and the problems occurring with the maintenance works the operation of the systems became unattractive for the operators. Therefore this practice is not widely spread in Russia.

Date: [27-05-2008] – SGS representative – Elena Krasnova/Elton Chen
OK accepted. Please incorporate explanations into the revised PDD version.
- Kindly supply Sensitivity analysis in separate excel spreadsheet format, plus make description of EUR price parameter precisely(i.e. EUR price, tCO2)
- Calculations of financial analysis without sale of ERUs in excel spreadsheet format should be added into the excel file Shirokorechenskiy LFG flaring project as a separate sheet.
- It is not acceptable to give data references used in other PDD without documentary support of such records, so please provide sources of the information in terms of the common practice analysis.

ANSWERS from NCSF:

Kindly supply Sensitivity analysis in separate excel spreadsheet format, plus make description of EUR price parameter precisely(i.e. EUR price, tCO2)

Answer: Please refer to the attached excel format file "Sensitivity analysis" that includes outcomes of modeling (see the file "Economical effectiveness ") considering adverse affects on Project's profitability of such factors as the rise of capital cost and ERU price fall.

Calculations of financial analysis without sale of ERUs in excel spreadsheet format should be added into the excel file Shirokorechenskiy LFG flaring project as a separate sheet.

Answer: Please see the attached file "Economical effectiveness " with sheets "with ERUs sells and "Without ERUs sells")

It is not acceptable to give data references used in other PDD without documentary support of

such records, so please provide sources of the information in terms of the common practice analysis

Answer:
For the documentary support of the data references in other PDD we offer to see the links:
Project 0042: Landfill gas recovery in Moscow – landfill site Dmitrovskij:
http://ji.unfccc.int/JI_Projects/DB/K8MU5S82R2K40HIIRX7JNIRRUEQXA8/PublicPDD/59PKQW69SG3H0FEDJM8TYJ8NXTG97H/view.html
Project 0043: Landfill Gas recovery in Moscow – landfill site Chmet'evo:
http://ji.unfccc.int/JI_Projects/DB/QX1UH955QVSJDC8RYO31AX1H03TVCV/PublicPDD/O3ZKPRUF07VYS4KXRVT3USXQIAF4WV/view.html
Project 0062: Landfill gas recovery in Moscow Region – landfill site Timochovo
http://ji.unfccc.int/JI_Projects/DB/8A99ZRHT02EYG0M1CK41PE6OZ6KWJ6/PublicPDD/2QNLFW67N9O7MUUC0B4LN5NK2RZBEJ/view.html

[Acceptance and close out] CAR 2 is pending

Date: [25-07-2008] – SGS representative – Elena Krasnova/Elton Chen

1. Sensitivity analysis in separate excel spreadsheet format with correct description of EUR price,tCO2 parameter was submitted, however, please add into the table 'Units of measurement for parameters'
2. the attached file "Economical effectiveness " with sheets "With ERUs sells" and "Without ERUs sells" indicate obsolete data on volume of ERUs , please make sure that a cross-check of appropriate excel spreadsheets calculations done.
3. Understanding of the documentary evidence on common practice is not correct. Please supply independent sources/surveys, i.e. articles, local documents etc to support records for LFG sites "Kargashino" LFG and "Dashkova" LFG. The given links to PDDs of JI projects, where both a/m LFG sites are mentioned, cannot be considered as reference documents.
4. Please substantiate a basis of a value of operational costs applied in doc "Shirokorechenskiy LFg flaring", list '*Economy effectiveness'*

[Acceptance and close out] CAR 2 is pending

ANSWERS from NCSF (25.08.08)

1. "Sensitivity analysis in separate excel spreadsheet format with correct description of EUR price,tCO2 parameter was submitted, however, please add into the table 'Units of measurement for parameters'" – Done

2. "the attached file "Economical effectiveness " with sheets "With ERUs sells" and "Without ERUs sells" indicate obsolete data on volume of ERUs , please make sure that a cross-check of appropriate excel spreadsheets calculations done." – Done

3. "Understanding of the documentary evidence on common practice is not correct. Please supply independent sources/surveys, i.e. articles, local documents etc. to support records for LFG sites "Kargashino" LFG and "Dashkovo" LFG. The given links to PDDs of JI projects, where both a/m LFG sites are mentioned, cannot be considered as reference documents." – for the support of the existence of "Kargashino" and "Dashkovo" project experience you can see the link http://www.ogbus.ru/authors/Yagafarova/Yagafarova_1.pdf. The changes were made in PDD in the description of current situation in the sector in section B. (old links were deleted

and new one added) 4. Please substantiate a basis of a value of operational costs applied in doc "Shirokorechenskiy LFg flaring", list '*Economy effectiveness'* – as a basis you can see the document "Preliminary business offer" (attachment 3)
Date: [08-09-2008] – SGS representative – Elena Krasnova/LA PP replies are acceptable. PDD has been updated [Acceptance and close out] CAR 2 is closed out

Date: Raised by: Elton Chen/Elena Krasnova

No.	Type	Issue	Ref
3	NIR	In PDD sections A, table A.2.1 and table A.4.1.4 contains the same information. Please avoid data repetition	1.15
Date: 12/05/2008 [Comments] Corrected			
Date: [27-05-2008] – SGS representative – Elena Krasnova/Elton Chen Please provide revised PDD version [Acceptance and close out] NIR 3 is closed out			

Date: Raised by: Elton Chen/Elena Krasnova/Edgar Salinas

No.	Type	Issue	Ref
4	CAR	A baseline approach has to be set in accordance with Appendix B of the JI Guidelines, that also regulates if the project has decided to use CDM approved methodology, they should follow it precisely. What is not a case for the project. A "Tool to determine methane emissions avoided from dumping waste at a solid waste disposal site" for ex-ante estimation of the amount of methane is not transparent and inconsistent as to: - formula (2) of the Tool is not used correctly. For the sake of clarity, project proponents should elaborate further on the rationale of equation E.4.2 (PDD, page 30) as compared to equation 2 of the tool for calculation of emissions from solid waste disposal. - definition of parameter 'j' is not in line with the Tool - evidence on the selection MCF value is required Please clear up by integrating additional detailed information.	2.1, 2.3
Date: 12/05/2008 [Comments] The latest version of ACM 0001 (v.08) prescribes the use of the latest version of the "*Tool to determine methane emissions avoided from dumping waste at a solid waste disposal site"* for the ex-ante estimation of the amount of methane that would be destroyed/combusted during the year. Furthermore the following guidance should be taken into account: • In the tool x will refer to the year since the landfill started receiving wastes (x runs from the first year of the landfill operation (x=1) to the year for which emissions are calculated (x=y));			

- Sampling to determine different waste types is not necessary, the waste composition can be obtained from the previous studies.

The Tool proposes only second option (sampling) and calculates methane generation based on actual waste streams $\mathbf{W_{j,x}}$ disposed in each year x, starting with the first year after the project activity until the end of the year, for which baseline is calculated (years x with x=1 to x= y).

The formula 2 of the Tool is as follows:

$$\mathbf{W_{j,x} = W_x \cdot \sum p_{n,j,x}/z;}$$

$W_{j,x}$ – amount of organic waste type 'j' prevented from disposal in the SWDS in the year *x* (tons);

W_x – total amount of organic waste prevented from disposed in year x (tons);

$\sum p_{n,j,x}$ – weight fraction of waste type j in the sample n collected during the year;

z – number of samples collected during the year x;

Shirokorechenskiy LFG utilization project uses the first option and baseline emissions are calculated since the landfill started receiving wastes. That option was chosen because the landfill will close by the start of the project activity as it reached the maximal height.

As the Tool contains no explanation on how to adopt the formula 2 to comply with the chosen option the further elaboration of the formula was done.

As composition of the wastes on the landfill site is known from reports on the landfill site there is no need in weight fraction of waste type j in the sample n collected during the year ($\sum p_{n,j,x}$) and in number of samples collected during the year x (z). So the adopted formula for the option is as follows:

$$\mathbf{W_{j,x} = W_x \cdot j/100;}$$

W_y – amount of organic waste disposed at the SWDS in the year *x* (x=1 start of the landfill operation, x=y year for which baseline methane emissions are calculated)

j – fraction of organic waste disposed at the SWDS, %.

This adopted formula was used in the PDD.

- *evidence on the selection MCF value is required*

Comment:

Methane correction factor (MCF) for anaerobic managed solid waste disposal site equal to 1.0 was selected as there is the controlled the placement of waste at Shirokorechenskiy landfill (all incoming sanitation cars are weighted; information is gathered in EMUP office).

The selection of this value must be also subject to, at least one, of the following conditions: (i) cover material; (ii) mechanical compacting; or (iii) levelling of the waste.
Shirokorechensky landfill site satisfies to ii and iii conditions as they have two bulldozers that compacting waste and each level of waste is covered by soil.

Date: [27-05-2008] – SGS representative - Elena Krasnova/Elton Chen
Due to JI mechanism flexibility it is permitted to use own methodological approach taking into account JI Guidelines. However, the below statements should be further cleared up as to:

- '*waste composition can be obtained from the previous studies'*, i.e please make clear the methodological approach of such studies

- It is not clear on the statement given the above '*Shirokorechenskiy LFG utilization project uses the first option' . What is the first option like?*
- The project uses a letter 'j' twice in calculation description :
- in formula 2 it is for waste type - 'j', index
- in formula 4.2 it is fraction of organic waste disposed at the SWDS - 'j', %.

It seems to be confusing, kindly avoid such approach.
Formula 4.2 in PDD is acceptable but should be re-written indicating a correct name of variable.
Generally, please quote the original formulas according to ACM0001, and then eliminate elements which are not applicable to this project with justification.

ANSWERs from NCSF:

- '*waste composition can be obtained from the previous studies', i.e please make clear the methodological approach of such studies*

Answer: The waste quantities and composition is monitored and controlled under day-to-day routine practice at Shirokorechenskiy landfill site. The historical previous data of these is available with EMUE office, the landfill operator company. This practice was described by the chief manager of the landfill site Mr. Tkachuk during the site-visit of SGS representatives.

- It is not clear on the statement given the above 'Shirokorechenskiy LFG utilization project uses the first option' . What is the first option like?

Answer: This is conditional reference we applied to distinguish between approaches towards what is the initial date from which baseline methane emissions start to calculate. The ACM0001 provides " in the tool x will refer to the year since the landfill started receiving wastes (x runs from the first year of the landfill operation (x=1) to the year for which emissions are calculated (x=y)). Whereas the Tool calculates methane generation based on actual waste streams disposed in each year x, starting with the first year after the project activity until the end of the year, for which baseline is calculated (years x with x=1 to x= y).

- The project uses a letter 'j' twice in calculation description :
- in formula 2 it is for waste type - 'j', index
- in formula 4.2 it is fraction of organic waste disposed at the SWDS - 'j', %.

Formula 4.2 in PDD is acceptable but should be re-written indicating a correct name of variable.

Answer: OK. We are changing the 'j' variable with 'i' in formula 4.2 so the formula will be:

$$W_{j,x} = W_x \cdot i/100;$$

W_x – total amount of organic waste prevented from disposal in year *x* (tons)

i – fraction of organic waste disposed at the SWDS, %

Concerning the re-written indicating: actually we can't use the same name of variable as they are proposed in the 'Tool to determine methane emissions avoided from dumping waste at a solid waste disposal site'. For the explanation we made a table:

Variable	Name of variable in Tool	Name of variable in our PDD
$W_{j,x}$	Amount of organic waste type j prevented from disposal in the SWDS in the year x (tons)	Amount of organic waste type j disposed in the SWDS in the year x (tons)

W_x	Total amount of organic waste prevented from disposal in year x (tons)	Total amount of organic waste disposed in year x (tons)
i	----	Fraction of organic waste disposed at the SWDS,%

Date: [25-07-2008] – SGS representative – Elena Krasnova/Elton Chen
For auditing of point 1 – 'waste composition' the following documents were tested

- "Technical report for 2007 issued by LFG "SHIROKORECHENSKIY"" (data on quantity of disposed waste during Y2007) dd 08-02-2008/39/
- "2-TP (waste) form, Y2007" dd 30.01.2008 - official reporting on waste disposal by EMUE Specialized Motor-Transport Depot in 2007/33/
- Limits on waste disposal allocated to EMUE Specialized Motor-Transport Depot, #15/03-05-9299 dd 23.11.2006 issued by Federal Services of Ecological, technological and nuclear Control (MTU Rostechnadzor, UFO) /40/
- Guidelines proposed in /34/ 'Sanitation and cleaning of cities directory' issued by Academy of municipal services named after K.D.Pamphilov, 2005 (data referred to the waste composition for public and production areas bearing in mind project geographical location of the region and relevant waste fraction for SWDS)

The analysis of the above documentations have not confirmed the PDD figures on waste morphology at the site.
The project explanations are needed to clear up the approach in determined/indicated waste composition in PDD.

Point 2: so called 'first option' refers to *(See ACM001 v.8 page 10/23)*
Furthermore the following guidance should be taken into account:
In the tool x will refer to the year since the landfill started receiving wastes [x runs from the first year of landfill operation (x=1) to the year for which emissions are calculated (x=y)]; The issue is closed.

Point 3: From the validator's point of view the suggested approach on the formulae 4.2 makes sense:
$W_{i,x} = W_x \cdot i/100$ where i – fraction of organic waste disposed at the SWDS. The approach refers to a simple multiplication based on the information about waste composition.
provided by the landfill's operator. The issue is closed.

CAR 4 is pending for point 1

ANSWER from NCSF (25.08.08)
For the confirmation of the figures on waste morphology in the PDD you can see attached document from landfill management company (attachment 1).

Date: [08-09-2008] – SGS representative – Elena Krasnova/Siddharth Yadav
For the confirmation of the figures on waste morphology in the PDD PP supplied the document from landfill management company signed Director V.A.Akimov dated 10-07-2007
[Acceptance and close out] CAR 4 is closed out

Date: Raised by: Elton Chen/Elena Krasnova

No.	Type	Issue	Ref

5	NIR	According to the methodology the project boundary should include all the power generation sources connected to the grid, meanwhile, the project excluded relevant plants of the grid from the boundary. The project claims on not including emissions from electricity consumption from the grid as these emissions equal 0.17% of total amount of emissions. However, the statement should be supported with calculations made with more conservative approach as per *Initial data* values	2.2

Date: 12/05/2008
[Comments]
The project neglects electricity emissions due to their insignificance. For estimation of emissions from electricity consumption of the grid was used methodological tool "Tool to calculate project emissions from electricity consumption" (version 01).
Gas booster plant with installed capacity 37 kW with electricity consumption 25-37 kWh (according to the document and its translation presented in attachment 5). This plant uses electricity from the grid only. According to the 'Tool to calculate project emissions from electricity consumption' v 01 in the ACM 0001 v8 we should use formula in the Case A. Electricity consumption from the grid:
$PE_{EC,y} = EC_{PJ,y}*EF_{grid,y}* (1+TDL_y)$

$PE_{EC,y}$ – project emissions from electricity consumption by the project activity during the year y (tCO2/year)
$EC_{PJ,y}$ – quantity of electricity consumed by the project activity during the year y (MWh)
$EF_{grid,y}$ – emission factor for the grid in year y (tCO2/MWh)
TDL_y – the average technical transmission and distribution losses in the grid in year y for the voltage level at which electricity is obtained from the grid at the project site

So the average electricity consumption is 31 kWh. During the year the plant will operate 24 hours a day and 365 days a year. Therefore electricity consumption in year y: 31*24*365 = 271 560 kWh (272 MWh).
Emission factor for the grid is 1.3 tCO2/MWh (using a conservative default value from the 'Tool to calculate project emissions from electricity consumption' v 01 in the ACM 0001 v8
The average technical transmission and distribution losses in the grid in year y is 0.2 according the default value in the 'Tool to calculate project emissions from electricity consumption' v 01 in the ACM 0001 v8.
According the above formula project emissions from the electricity consumption are: 423.6 tCO2 per year or 2118 tCO2 for 2008-2012 . (see detailed calculations in Attachment 5. Excel format file 'Calculation of CO2 grid emissions) This amount is 0.59 % of total reductions (358378 tons of CO2-eq). So these emissions are considerably small (less than 1% of total emissions), therefore they are not included in the project's boundaries.

Date: [27-05-2008] – SGS representative - Elena Krasnova/Elton Chen
0.59% is based on the assumption that this project can fully realize the estimated emission reductions (423.6t per year), the uncertainty is high, therefore PP has to follow the "tool to calculate the project emissions from electricity consumption" in the PDD. Generally, please quote the original formulas according to ACM0001, and then eliminate element which not applicable to this project with justification

[Acceptance and close out] NIR5 is open .

Date: [10-06-2008] – SGS Edgar Salinas

Reference is made to the statement "So the average electricity consumption is 31 kWh" How was this estimated?

ANSWERS:

ACM 0001 prescribes (p.12) to use "Tool to calculate project emissions from electricity consumption " and we just followed this Tool.

Reference is made to the statement "So the average electricity consumption is 31 kWh" How was this estimated?

Answer: According to the letter of General Director of JSC "ECOCOM" Oliver Kiser (see attachment 4) Gas booster plant will consume 25-30 kW. We consider the situation when the consumption will be average: (25+37)/2=31 kW

Date: [25-07-2008] – SGS representative – Elena Krasnova/Elton Chen

1. The issue about monitoring of project emissions from electricity consumption was not answered: the quantity of emission reductions in the file "Calculation CO2 grid emissions" as a basis for comparison is obsolete. Please update records.
   The project has accepted to include monitoring of electricity consumption in the NIR07 because this monitoring is neither troublesome nor expensive. Therefore, the answer to NIR05 should be consistent with NIR07.

2. The letter of General Director of JSC "ECOCOM" Mr.Oliver Kaiser dated 03-12-2007 /36/ was submitted: Equipment "Gas booster station for landfill gas with high temperature flare HTN 12.5 with capacity of 2500 nm3/h"

- installed power capacity: 37 kW
- electricity consumption per hour: 25-30 kWh
- annual electricity consumption: 250000 kWh

NIR 5 is pending

ANSWER from NCSF (25.08.08)

All the necessary corrections in the file "Calculation CO2 grid emissions" have been done.

Date: [08-09-2008] – SGS representative – Elena Krasnova/LA
The corrections in the file have been made.
[Acceptance and close out] NIR 5 is closed out

Date: Raised by: Elton Chen/Elena Krasnova

No.	Type	Issue	Ref
6	CAR	The *Baseline emissions* section of ACM0001 ,v 8 are not applied in PDD clearly and transparent. No indication on the option chosen in terms of estimation of destruction efficiency of the system, adjustment factor estimation, no transparent approach in demonstrating formulas used and identification of appropriate parameters. Please make description in B section more comprehensive and consistent.	1.11, 2.3

Date: 12/05/2008
[Comments]
Baseline emissions section of ACM0001 v8 embraces all activities on the landfill whatever they might be in the absence of the project activity including methane destruction, electricity and heat generation utilizing LFG. All these activities are adopted in the formula (1):

$BE_y = (MD_{project,y} - MD_{BL,y})*GWP_{CH4}+EL_{LFG,y}*CEF_{elec,BL,y}+ET_{LFG,y}*CEF_{ther,BL,y}$
Where:
BE_y – baseline emissions in year y (tCO2e);
$MD_{project,y}$ – the amount of methane that would have been destroyed/combusted during the year, in tones of methane in project scenario;
$MD_{BL,y}$ – the amount of methane that would have been destroyed/combusted during the year in the absence of the project due to regulatory and/or contractual requirement, in tones of methane*;
GWP_{CH4} – Global Warming Potential value for methane for the first commitment period is 21 tCO2e/tCH4;
$EL_{LFG,y}$ – net quantity of electricity produced using LFG, which in the absence of the project activity would have been produced by power plants connected to the grid or by an on-site/off-site fossil fuel based captive power generation, during year y, in megawatt hours (MWh);
$CEF_{elec,BL,y}$ – CO2 emissions intensity of the baseline source of electricity displaced, in tCO2e/MWh;
$ET_{LFG,y}$ – the quantity of thermal energy produced utilizing the landfill gas, which in the absence of the project activity would have been produced from onsite/offsite fossil fuel fired boiler, during the year y in TJ;
$CEF_{ther,BL,y}$ – CO2 emissions intensity of the fuel used by boiler to generate thermal energy which is displaced by LFG based thermal energy generation, in tCO2e/TJ

*As no regulatory and/or contractual requirements exist to destruct/combust methane in the absence of the project activity neither estimation of Adjustment Factor nor destruction efficiency of the system was done.

In baseline scenario of Shirokorechenskiy LFG utilization project there would be neither capturing nor utilisation of landfill gas for electric or thermal power generation. So the formula (1) in *Baseline emissions* section of ACM0001 ,v 8 shrinks to the equation:

$BE_y=MD_{project,y}*GWP_{CH4}$

BE_y – baseline emissions in the year y, tCO2-eq.;
$MD_{project,y}$ – the amount of methane that would have been destroyed/combusted during the year in the absence of project activity, tCH4;
GWP_{CH4} – Global Warming Potential for methane, tCO2-eq./tCH4

In the approved consolidated baseline methodology ACM0001"Consolidated baseline and monitoring methodology for landfill gas project activities" for ex-ante estimation of the amount of methane that would have been destroyed/combusted during the year, in tones of methane ($MD_{project,y}$) was offered formula (13):
$MD_{project,y}=BE_{CH4,SWDS,y}/GWP_{CH4}$

Date: [27-05-2008] – SGS representative - Elena Krasnova/Elton Chen
The CAR6 pointed out that methodological approach of ACM0001 Ver8 for determining baseline emissions is not followed explicitly in the PDD, actually the determinations of project emissions and leakage have the same flaw, it is caused by directly using the simplified formulas instead of the original ones prescribed in ACM0001 without justification, so please quote the original formulas at first, then eliminate those elements

not applicable to this project with justification.

Concerning calculations of the parameter BE (CH4,SWDW,y) in excel model *Shirokorechenskiy LFG flaring project* the following point should be cleared up:

- allocated value 0.9 for the parameter 'f'

[Acceptance and close out] CAR 6 is pending

ANSWER:

In methodological tool "Tool to determine methane emissions avoided from dumping waste at a solid waste disposal site" parameter f is a fraction of methane captured at the SWDS and flared, combusted or used in another manner. On landfill site "Shirokorechensky" there was no LFG capture and utilization practice in baseline. Therefore this parameter is zero.

Date: [25-07-2008] – SGS representative – Elena Krasnova/Elton Chen
The issue on the value of parameter 'f ' =0 as a fraction of methane captured at the SWDS and flared, combusted or used in another manner from the methodological tool "Tool to determine methane emissions avoided from dumping waste at a solid waste disposal site" is acceptable. Looking further to the BE calculations we need to obtain explanations on the approach how the project arrived to the value of 850,000 t -- average amount waste disposed at the project site since this factor significantly impacts on the estimated amount of baseline emissions.
The simplified mathematical calculations based on the data from /30/ Characteristics of Waste Disposal Object (Shirokorechenskiy SWDS) reported by EMUE Specialized Motor-Transport Depot, on 31.12.2003 indicated this value to be approx around 500 thousand tonnes. The value of 542,000 tonnes of annual dumped waste was selected as more conservative in the document /38/ Survey on biogas composition by Ramensky Regional Environmental Center, 2007 .

Kindly substantiate your data, the adequate/updated excel model of BE calculations is required for the further check.

Please look at the figures in the PDD: it seems that you do not use English format for figures: as example, the table A.4.3. should indicate 217, 689 and not 217689; look at the other figures in the PDD.

[Acceptance and close out] CAR 6 is pending

ANSWER from NCSF (25.08.08)

In our calculations in PDD we used new value 542,000 t – average amount waste disposed at the project site. PDD was updated.

For the substitution of the data we updated excel model of baseline emissions.

All the corrections have been made.

Date: [08-09-2008] – SGS representative – Elena Krasnova/LA
The revised data are conservative, PP reply is acceptable
[Acceptance and close out] CAR 6 is closed out

Date: Raised by: Elton Chen/Elena Krasnova/Edgar Salinas

No.	Type	Issue	Ref
7	NIR	Project participants have omitted the estimation of project emissions due	2.4

		to energy requirements for the implementation of the project activity (i.e. electricity and fossil fuels). Table A.4.2 (PDD, page 7) mentions electrical motors in the description of the pumping equipment. Similarly, Scheme A.4.2. (PDD, page 8) shows a compressor plant run by electricity. ACM0001 v.08 requires the calculation of electricity consumption (ACM0001, eq. 16, p12/22) and they are to be monitored if project participants intend to apply ACM0001 in its current form. Projects proponents have argued that imports of electricity from the grid are negligible as compared to the total amount of emission reductions achieved by the project (PDD, footnote 6, page 16). In the first place, project proponents should bear in mind that the referred amount of emission reductions is based on ex ante estimations and not on verified monitored data, therefore such statement is uncertain. Second, they ignore electricity consumption on the basis of low levels of imports from the grid, yet there is no evidence that demonstrate that electricity requirements for the implementation of the project activity are not met by captive fossil fuelled power plants.	

Date: 12/05/2008
[Comments]
For estimation of the grid emissions during imports of electricity "Tool to calculate project emissions from electricity consumption" (version 01) was used. To eliminate the influence of uncertainty the most conservative assumptions were made (see NIR 5 above):

1/ the gas booster station will operate 24 hours a day and 365 days a year
2/ emission factor for the grid is 1,3 tCO2/MWh (proposed by the Tool). Much less emission factors were developed by the Ministry of Netherlands for Russian grid (the methodology is available on request) and recommended for use under ERUPT tender. The ERUPT factor for the Russian grid is tending to decrease over 2008-2012 and assumes the following values 0.504 tCO2/MWh for 2008, 0.498 tCO2/MWh (for 2009), 0.492 tCO2/MWh (for 2010), 0.486 tCO2 tCO2/MWh (for 2011), 0.479 tCO2/MWh (for 2012).
3/ TDL value - 20% (proposed be the Tool) Very conservative assumption. The average value of TDL for Russian grid is 13.15%. For Sverdlovsk region where the Shirokorechenskiy landfill site situated the TDL value is 9.8%. (The source of information is the article: Decrease of electric power losses in grid transmission lines. Dynamics, structure, analysis methods and actions. V.I. Pyatigor (OAO "Federal Grid Company")et al., 2003 http://www.abok.ru/for_spec/articles.php?nid=2833)

There are no captive power plants that source electricity for Shirokorechenskiy LFG project needs, so they are not taken into account.

Date: [11-06-2008]
[Acceptance and close out]

NIR 7 STILL OPEN: *In the argumentation that project participants have presented against NIR 5, they expressed that project emissions due to electricity consumption are going to be excluded from the calculation of emission reductions. As explain above, it would be premature to say that this emissions account for less percent than the overall estimation. In addition, the instruments and information procedures to keep records of this consumption do not represent a significant investment. Project participants have to include this parameter in the monitoring plan, so it can be monitored in subsequent verifications of this project activity.*

ANSWER :

OK. We'll include this parameter in Monitoring plan of the revised PDD.
Date: [25-07-2008] – SGS representative – Elena Krasnova/Elton Chen The parameter ID8 : $EC_{PJ,y}$, electricity consumed by the project activity is included in PDD, section D . Please replace Russian fonts in Annex 3 – Monitoring Plan ANSWER from NCSF (25.08.08) Fonts in Annex 3 – Monitoring Plan replaced. NIR 7 is closed out

Date: Raised by: Elton Chen/Elena Krasnova

No.	Type	Issue	Ref
8	CAR	Non-modified format of Table 1 of ACM 0001 methodology *'Summary of gases and sources included in the project boundary, and justification/explanation where gases and sources are not included'* should be used. Format of Table B.3, section B.3 in PDD is not correct . Please also distinguish baseline and project sources of emissions.	2.4
Date: 12/05/2008 [Comments] Corrected			
Date: [27-05-2008] – SGS representative - Elena Krasnova/Elton Chen Please provide revised PDD version. [Acceptance and close out] CAR 8 is pending			
[25-07-2008] – SGS representative - Elena Krasnova/Elton Chen The PDD ver 02 dd 07-07-2008 included the revised table B.3 CAR 8 is closed out.			

Date: Raised by: Elton Chen/Elena Krasnova

No.	Type	Issue	Ref
9	CAR	Calculations in Excel –Annex 4, 'project scenario' doc are not clear. Please specify formula, parameters and unit of measurement	4.3
Date: 12/05/2008 [Comments] Formula in 'project scenario' : Calculation of annual project emissions from flaring: $PE_{CO2e,flare} = TM_{LFG,x} \cdot (1-\eta_{flare}) \cdot GWP_{CH4}$ $TM_{LFG,x}$ - mass flow rate of methane in the landfill gas fed to the flare under the Project activity, tones CH_4/year; η_{flare} – flare efficiency; GWP_{CH4} – Global Warming Potential for methane; Mass flow rate of methane in the LFG is the quantity of gas that will be transported into flare device. Not all the methane will be flared as the device hasn't 100% efficiency (we assume flare efficiency is 90% this is conservative). When we multiply these two variables we can find the quantity of methane that wasn't burnt, by multiplying this quantity with GWP of methane we can find project emissions from LFG flaring ($PE_{CO2e, flare}$)			
Date: [27-05-2008] – SGS representative - Elena Krasnova/Elton Chen See comments to CAR 6			

[Acceptance and close out] CAR 9 is open

ANSWERS:
OK. We will follow this recommendation and will make further revision:

Determination of the mass flow rate of the residual gas that is flared:
$FM_{RG,h} = \rho_{RG,n,h} * FV_{RG,h}$
$FM_{RG,h}$ – mass flow rate of the residual gas in hour h;
$\rho_{RG,n,h}$ – density of the residual gas at normal conditions in hour h;
$FV_{RG,h}$ – volumetric flow rate of the residual gas in dry basis at normal conditions in the hour h

Determination of the mass fraction of carbon, hydrogen, oxygen, and nitrogen in the residual gas:
$Fm_{j,h} = \sum fv_{i,h} * AM_j * NA_{j,i} / MM_{RG,h}$
$Fm_{j,h}$ – mass fraction of element j in the residual gas in hour h;
$fv_{i,h}$ – volumetric fraction of component i in the residual gas in the hour h;
AM_j – atomic mass of element j;
$NA_{j,I}$ – number of atoms of element j in component i;
$MM_{RG,h}$ – molecular mass of the residual gas in hour h;
j – the elements carbon, hydrogen, oxygen and nitrogen;
i – the components CH4, CO, CO2, O2, H2, N2;

Determination of the volumetric flow rate of the exhaust gas on a dry basis:
$TV_{n,FG,h} = V_{n,FG,h} * FM_{RG,h}$
$TV_{n,FG,h}$ – volumetric flow rate of the exhaust gas in dry basis at normal conditions in hour;
$V_{n,FG,h}$ – volume of the exhaust gas of the flare in dry basis at normal conditions per kg of residual gas in the hour h;
$FM_{RG,h}$ – mass flow rate of the residual gas in the hour h;
$V_{n,FG,h} = V_{n,CO2,h} + V_{n,O2,h} + V_{n,N2,h}$
$V_{n,FG,h}$ – volume of the exhaust gas of the flare in dry basis at normal conditions per kg of residual gas in the hour h;
$V_{n,CO2,h}$ – quantity of CO2 volume free in the exhaust gas of the flare at normal conditions per kg of residual gas in the hour h;
$V_{n,O2,h}$ - quantity of O2 volume free in the exhaust gas of the flare at normal conditions per kg of residual gas in the hour h;
$V_{n,N2,h}$ - quantity of N2 volume free in the exhaust gas of the flare at normal conditions per kg of residual gas in the hour h;

Determination of methane mass flow rate in the exhaust gas on a dry basis:
$TM_{FG,h} = TV_{n,FG,h} * fv_{CH4,FG,h} / 1000000$
$TM_{FG,h}$ – mass flow rate of methane in the exhaust gas of the flare in dry basis at normal conditions in the hour h;
$TV_{n,FG,h}$ – volumetric flow rate of the exhaust gas in dry basis at normal conditions in hour h;
$fv_{CH4,FG,h}$ – concentration of methane in the exhaust gas of the flare in dry basis at normal conditions in hour h;

Determination of methane mass flow rate in the residual gas on a dry basis:
$TM_{RG,h} = FV_{RG,h} * fv_{CH4,RG,h} * \rho_{CH4,n}$
$TM_{RG,h}$ – mass flow rate of the methane in the residual gas in the hour h;
$FV_{RG,h}$ – volumetric flow rate of the residual gas in dry basis at normal conditions in hour h;
$fv_{CH4,RG,h}$ – volumetric fraction of methane un the residual gas on dry basis in hour h;
$\rho_{CH4,n}$ – density of methane at normal conditions;

Determination of the hourly flare efficiency:
$\eta_{flare,h} = 1- TM_{FG,h}/TM_{RG,h}$
$\eta_{flare,h}$ – flare efficiency in the hour h;
$TM_{FG,h}$ – methane mass flow rate in exhaust gas averaged in a period of time t;
$TM_{RG,h}$ – mass flow rate of methane in the residual gas in the hour h;

Calculation of annual project emissions from flaring:
$PE_{CO2e,flare} = TM_{LFG,x} \cdot (1-\eta_{flare}) \cdot GWP_{CH4}$
$TM_{LFG,x}$ - mass flow rate of methane in the landfill gas fed to the flare under the Project activity, tones CH_4/year;
η_{flare} – flare efficiency;
GWP_{CH4} – Global Warming Potential for methane;
Mass flow rate of methane in the LFG is the quantity of gas that will be transported into flare device. Not all the methane will be flared as the device hasn't 100% efficiency (we assume flare efficiency is 90% this is conservative). When we multiply these two variables we can find the quantity of methane that wasn't burnt, by multiplying this quantity with GWP of methane we can find project emissions from LFG flaring ($PE_{CO2e, flare}$)

[25-07-2008] – SGS representative - Elena Krasnova/Elton Chen
Please provide the updated Excel model 'Shirokorechenkiy LFG flaring project' file to assess the project emissions calculations on the latest data
[Acceptance and close out] CAR 9 is open

ANSWER from NCSF (25.08.08)

Excel model 'Shirokorechenkiy LFG flaring project' has been updated. In our calculations in PDD we used new value 542,000 t – average amount waste disposed at the project site. For the substitution of the data we updated excel model of baseline emissions too.

Date: [08-09-2008] – SGS representative – Elena Krasnova/LA
The revised Excel model 'Shirokorechenkiy LFG flaring project' has been submitted and found acceptable.
[Acceptance and close out] CAR 9 is closed out

Date: Raised by: Elton Chen/Elena Krasnova

No.	Type	Issue	Ref
10	NIR	An appropriate monitoring plan has not been established in accordance with appendix B of JI guidelines and further guidance on monitoring, Annex 3 to PDD is blank. Please document in PDD type of flare, flare efficiency approach, destruction efficiency option and manufacturer's specifications for the operations of the flare and procedures to monitor these specifications.	1.14

Date: 12/05/2008
The following information will be provided in the Annex 3 of the PDD.
Supplier of technology and the equipment for the Shirokorechenskiy LFG utilization project , ECOCOM company, has a wide experience in LFG treatment projects in many countries. In Moscow region it implements three projects where the same equipment is planned to be set. All the equipment has 'Confirmation of Flare efficiency from Pro2 Anlagentechnik GmbH' (see attachment 6) In this document flare efficiency is declared 99%, temperature of the flare >/= 1000^0C with monitoring, retention time >/= 0.3 s with 1000^0C.

Date: [27-05-2008] – SGS representative - Elena Krasnova/Elton Chen
The tool of flare efficiency is not used, this is a deviation from ACM0008, I leave this to Edgar's judgement.

Answers:
The tool of flare efficiency is not used

Answer: We don't need to use the tool of flare efficiency as we have documented data from a supplier of the equipment. Moreover we are taking into account 90% efficiency for it's more conservative approach.
this is a deviation from ACM0008

Answer: We don't use ACM0008 in our PDD at all. On our opinion methodology ACM0001 is more appropriate for this kind of projects.
[Acceptance and close out] NIR 10 is pending

[27-05-2008] – SGS representative - Elena Krasnova/Elton Chen
The default value of 90% attributed to flare efficiency is in line with Tool to determine project emissions from flaring gases containing methane.
it's OK if the project apply a 90% value, which would be below the manufacturer's specifications of 99%. Make sure that even if the project uses the 90% value for the efficiency, this value can only be applicable for the periods where the monitored temperature is above the prescribed levels of best operating conditions. By all means continuous monitoring of compliance with manufacturer's specification of flare must be performed.

It is not meant to use ACM0008, it is a typing error and should be read as ACM0001, v8
NIR 10 is closed out.

Date: Raised by: Elton Chen/Elena Krasnova

No.	Type	Issue	Ref
11	NIR	Monitoring of Sustainable Development Indicators/ Environmental Impacts is not presented, no issues to cover the below points are found in PDD. Please work out and incorporated. 1- Does the monitoring plan provide the collection and archiving of relevant data concerning environmental, social and economic impacts? 2- Is the choice of indicators for sustainability development (social, environmental, economic) reasonable? 3- Will it be possible to monitor the specified sustainable development indicators? 4- Are the sustainable development indicators in line with stated national priorities in the Host Country? The above mentioned questions should be answered and incorporated in the revised PDD	5.1

Date: 12/05/2008

1. *Does the monitoring plan provide the collection and archiving of relevant data concerning environmental, social and economic impacts?*

Comment:
The monitoring of the environmental impacts including control over the state of the ambient air and soil on Shirokorechenskiy landfill site is provided by the Central Laboratory For Analysis and

Engineering Measurements of Ural Federal Okrug (the regional body of the Federal Office for Environmental, Technological and Nuclear Supervision - ROSTECHNAZOR).

Annual control over state of ambient air at the Shirokorechenskiy landfill site, including measurements of surface-level concentration of the following components: suspended solids, ammonia, hydrogen sulphide, carbon dioxide, benzene, trichlormethane and chlorinated carbon. The samples and measurements are taken on the boundary of the control area of Shirokorechenskiy site. Emissions of these substances must not exceed norms established by ROSTECHNADZOR and stated in the permit for such emissions.

The control over the state of soil is carried out for determine the content of metals, mercury, oil products, nitrates, nitrogen ammonium. The assessment of soil contamination within the boundary of the control area is compared against the values of maximum permissible concentrations.

The measurements are filled in the established formats and issued by the Laboratory as environmental control reports. The paper copies of the reports are kept (archived) in the EMUE "Spetsavtobaza" and available on request.

By limiting and monitoring the emissions of hazardous these substances (under the ecological legislation) the Russian state realizes the sustainability concept as uncontrolled emissions will threaten the development of local society and of the environment. Thus the maximum permissible concentrations of such emissions are the sustainability indicators that accommodate environmental, social and economic impacts.

The implementation of LFG utilization project will improve the environmental situation on Shirokorechenskiy landfill site as destruction of LFG will diminish the emissions of above hazard substances and undesired odor. The Lab will monitor the positive effects (that will be brought about by Project) under their routine measurement process on the Shirokorechenskiy landfill site.

Apart from that the Project will prevent inner combustion of methane in the waste body and causing thus formations of fires and smoke. This will also contribute to the improvement of environment situation and of living and health conditions of local inhabitants.

Considering all above, the Projects will bear its social and economic function the monitoring of which is implemented via the control over the level of hazardous emissions.

2- Is the choice of indicators for sustainability development (social, environmental, economic) reasonable? 3. Will it be possible to monitor the specified sustainable development indicators? 4- Are the sustainable development indicators in line with stated national priorities in the Host Country?

The sustainable development concept is adopted by the Russian environmental legislation. To ensure that the maximum permissible emissions and concentrations of hazardous substances are developed for each emission source of domestic industrial sectors. So are for Shirokorechenskiy landfill site. As was presented above the environmental indicators (maximum permissible emissions of hazardous substances) step forth as sustainability indicators. From that point, they are reasonable and are in line with stated national priorities of the Host Country.

Date: [27-05-2008] – SGS representative - Elena Krasnova/Elton Chen

OK, please provided revised PDD [Acceptance and close out] NIR 11 is closed out
[25-07-2008] – SGS representative - Elena Krasnova/Elton Chen The PDD ver 02 dd 07-07-2008 included the above information. CAR 11 closed out

Date: Raised by: Elton Chen/Elena Krasnova

No.	Type	Issue	Ref
12	CAR	Project monitoring procedures are not properly prepared to address the below issues. Please develop and integrate in the revised PDD 1- the authority and responsibility of project management 2- the authority and responsibility for data registration, monitoring, measurement and reporting 3- procedures identified for training of monitoring personnel 4- procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions 5- procedures identified for calibration of monitoring equipment 6- procedures identified for maintenance of monitoring equipment and installations 7- procedures identified for monitoring, measurements and reporting 8- procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation) 9- procedures identified for dealing with possible monitoring data adjustments and uncertainties 10- procedures identified for review of reported results/data 11- procedures identified for internal audits of GHG project compliance with operational requirements where applicable 12- procedures identified for project performance reviews before data is submitted for verification, internally or externally 13- procedures identified for corrective actions in order to provide for more accurate future monitoring and reporting	5.2

Date: 12/05/2008

[Comments] *1- the authority and responsibility of project management*

2- the authority and responsibility for data registration, monitoring, measurement and reporting

Operational and management structure the project operator will implement in order to monitor emission reductions and any leakage effects, generated by the project activity. The following monitoring activities will be established:

- Data handling. The proven and qualified monitoring equipment including flow meter and gas analyser will be installed in place. The systems will allow automated and continuous recording and reporting of data. These readings will be checked for any anomalies before being field for future reference.
- Quality assurance. "Centre of environmental projects" will designate a LFG system manager to be in charge of and accountable for the generation of ERs including monitoring, record keeping, computation and recording of ERs, audits and verification. The general director will officially sign off on all worksheets used for the recording and calculation of ERs.
  Well-defined protocols and routine procedures, with good, professional data entry, extraction and reporting procedures will make it considerably easier for the auditor and verifier to do their work.
  Proper management processes and systems records will be kept by the project. The

auditors can request copies of such records to judge compliance with the required management systems.

- Reporting. The local LFG capture and utilization system operator will report to "Centre of environmental projects" and also to the Emissions Buyer as per the Emission reduction Purchase Agreement with the Buyer.
  The local LFG capture and utilization system operator will prepare reports as needed for audit and verification purposes.

3- procedures identified for training of monitoring personnel

ECOCOM company will provide the following: a training program for each operator before assuming responsibility for the LFG capture and utilization operations. This training program will cover:

- General technology of LFG generation, safety of gas handling in equipment and problems with uncontrolled emissions;
- General knowledge regarding the equipment at each individual site and operation techniques;
- Reading, recording and interpreting data on site;
- Control system function and emergency situations;
- Maintenance procedures and actions;
- Calibration methodology

Each site will have a comprehensive operating guide for LFG capture and utilization system operation in English and in Russian that will contain details on the following: operation manual, maintenance manual, drawings and specifications, equipment supplier manuals, parameters for landfill gas composition, temperature and pressure and corrective actions if the parameter limits are violated.

4- procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions

Emergency cases:

No electrical power:

When no electrical power is available the blower of the degassing installation cannot operate. So no LFG-stream is available. The flow-meter detects no LFG-stream and no CO2-eq. will be counted. No special actions are possible to avoid this.

Failure flow meter:

To limit the time of operating with no flow signal in case of failure, the flow meter will be exchanged by a spare flow meter as soon as possible. Despite this quick exchange the degassing installation operates a short time without flow signal and CO2-eq. values. To determine the flow during this time span the average flow of the last seven days will be used and so it is possible to calculate the reduced CO2-eq. (the chance of failure of the flow meter is very small).

Failure methane analyzer (Ultramat 23):

To limit the time operating with no kWh meter in case of failure, this kWh meter will be exchanged by a spare kWh meter as soon as possible. Despite this quick exchange the degassing installation operates a short time without measuring the electrical power consumption. To determine the consumed electrical power consumption during this time span the average electrical power consumption of the last 7 days will be used. (the chance of a failure of the kWh meter is very small).

5- procedures identified for calibration of monitoring equipment;

6- procedures identified for maintenance of monitoring equipment and installations;

LFG quantity: According to the specifications of flow meter, every four years the flow meter has to be calibrated. The flow meter will be sent to the supplier for calibration. Meanwhile, during calibration, the flow will be measured by means of temporary flow meter (same type). The results of the 2 flow meters and the beginning and ending gas quantity will be stored separately in the

data base. Calibration reports of the supplier with the beginning and ending gas quantities will be sent to buyer of the certificates.
The condition of correct logged CH4-values is the calibration of the Ultramat 23 according the calibration protocol. In the calibration protocol 3 main issues are important for correct calibration:

- The calibration frequency has to be correct;
- The quality of the calibration gas has to be according the standard;
- The calibration procedure carried out by the operator has to be correct;

The calibration frequency can easily be checked in the database. Before calibration the analyzing system has to be switched in position calibration. This status of switch calibration will be stored in the database.
During the calibration LFG will not be sampled because calibration gas streams through the Ultramat 23 instead of LFG. To calculate the CO2-eq. during calibration the average CH4-content of the last hour will be used.
The calibration gases will be purchased from certified gas suppliers. All in gas bottles stored calibration gases will be provided with a quality certificate. The quality certificate indicates the quality of calibration gas is according the standard.
To prove the calibration procedure will be carried out correctly, the skilled operator demonstrates this procedure to the authorized validator at the installation. The operators are well trained and possess the necessary certificate.

7- procedures identified for monitoring, measurements and reporting
8- procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)
All the parameters are monitored every hour and saved on the control panel of operation system and in data registration device of equipment. Once a day all the data send to the monitoring station. The monitoring station is a personal computer equipped with:

- Modem;
- System of visualization for operating purposes;
- Data base for saving process' data;
- Alarm emergency system for operators;

Monitoring system can be placed all over the world.

9- procedures identified for dealing with possible monitoring data adjustments and uncertainties
The proven and qualified monitoring equipment including flow meter and gas analyser will be installed in place. The systems will allow automated and continuous recording and reporting of data. These readings will be checked for any anomalies before being filed for future reference.

10- procedures identified for review of reported results/data
11- procedures identified for internal audits of GHG project compliance with operational requirements where applicable
"Centre of environmental projects" will designate a LFG system manager to be in charge of and accountable for the generation of ERs including monitoring, record keeping, computation and recording of ERs, audits and verification.
The general director will officially sign off on all worksheets used for the recording and calculation of ERs.
Well-defined protocols and routine procedures, with good, professional data entry, extraction and reporting procedures will make it considerably easier for the auditor and verifier to do their work. Proper management processes and systems records will be kept by the project. The auditors can request copies of such records to judge compliance with the required management systems.

12- procedures identified for project performance reviews before data is submitted for verification, internally or externally
As described earlier the following parameters and items will be checked by the authorized validator once a year at the installation (LFG quantity, methane content LFG, calibration procedure methane analyzer, log book operating and maintenance).
The parameters will be written down on a special document by the validator. Additional the statement 'the calibration protocol is carried out correctly' will be mentioned on this document. This document will be signed by the validator and sent to the buyer of the certificate.

13- procedures identified for corrective actions in order to provide for more accurate future monitoring and reporting
Ecocom company will provide necessary training program for each operator before assuming responsibility for the LFG capture and utilization operations. This program includes also: reading, recording and interpreting data on site; control system function and emergency situations; maintenance procedures and actions;
Moreover, each site will have a comprehensive operating guide for LFG capture and utilization system operation in English and in Russian that will contain details on the following: operation manual, maintenance manual, drawings and specifications, equipment supplier manuals, parameters for landfill gas composition, temperature and pressure and corrective actions if the parameter limits are violated.

Date: [27-05-2008] – SGS representative - Elena Krasnova/Elton Chen
OK, please provided revised PDD
[Acceptance and close out] CAR 12 is closed out
The PDD ver 02 dd 07-07-2008 included the above information

Date: Raised by: Elton Chen/Elena Krasnova

No.	Type	Issue	Ref
13	NIR	1. No indication on monitoring of the required parameters in PDD as per the selected methodology: - PE flare, y – project emissions from flaring of the residual gas stream in year, y (tCO2) - PE ec,y – project emissions from electricity consumption by the project activity during the year, y (tCO2) - MG pr,y – Amount of methane generated during year y of the project activity, (tCH4) Absence of these parameters should be justified.	1.14

Date: 12/05/2008
[Comments]
PE flare, y – project emissions from flaring of the residual gas stream in year, y (tCO2)
ACM 0001 order to use 'Tool to determine project emissions from flaring gases containing methane'. In this tool $PE_{flare,y}$ is calculated by the formula 15. Emissions from LFG flaring are emissions from incomplete flaring of methane and for their estimation there is formula in PDD:

$$\mathbf{PE_{CO2e,flare,y} = \Sigma TM_{LFG,h} \cdot (1-\eta_{flare}) \cdot GWP_{CH4}/1000}$$

Where:

$PE_{CO2e,flare}$ – Project methane emissions due to incomplete combustion at the flare, tones of CO_2e equivalent

$TM_{LFG,x}$ – mass flow rate of methane in the landfill gas fed to the flare under the Project activity,

tones CH_4/year

$TM_{LFG,h}$ – mass flow rate of methane in the LFG in an hour *h,* kg/h

η_{flare} – flare efficiency per hour *h*

GWP_{CH4} – Global Warming Potential of methane, tCO_2/tCH_4
$TM_{LFG,h}$ is calculated by the formula:

$$\mathbf{TM_{LFG,h} = FV_{LFG,h} \cdot fv_{CH4,LFG,h} \cdot \rho_{CH4,n}}$$

Where:

$FV_{LFG,h}$ – volumetric flow rate of the landfill gas in dry basis at normal conditions fed to the flare, m^3/h ;

$fv_{CH4,RG,h}$ – volumetric fraction of methane in the LFG on dry basis in an hour,

ρ_{CH4} – methane density at normal conditions, kg/m^3·(0.716)

In section D it is planned to monitor fraction of methane in LFG (w_{CH4}), methane density (D_{CH4}), quantity of landfill gas burnt at the flare ($LFG_{flare,y}$). Therefore $PE_{CO2e,flare}$ is calculated from the monitored parameters and there is no need for its direct monitoring.

PE ec,y – project emissions from electricity consumption by the project activity during the year, y (tCO2)
Is not monitored as electricity consumption is small and emissions are negligibly small too. For the detailed explanation see NIR 5.

MG pr,y – Amount of methane generated during year y of the project activity, (tCH4).
The ACM 0001 prescribes to estimate this parameter using actual amount of waste disposed in the landfill as per the latest version of the Tool to determine methane emissions avoided from dumping waste at a solid waste disposal site.
According this Tool, the formula (2) is used for the estimation of the amount of methane produced in the year y ($BE_{CH4,SWDS,y}$).
Based on this formula the EXCEL format calculation model was developed (please see attachment 6. Shirokorechenskiy LFG flaring project). The cell range BA4 : BE4 in the list called 'total baseline' of this model presents methane emissions generated during year y of the project activity, (tCH4).

Date: [27-05-2008] – SGS representative - Elena Krasnova/Elton Chen
See comments to CAR6, if PDD can quote the original formulas according to ACM0001, and then eliminate element which not applicable to this project with justification, then this NIR can be closed.
[Acceptance and close out] NIR 13 is pending

ANSWER:

OK. We will follow in the PDD your recommendation and will provide the further development of original formula :

Determination of the mass flow rate of the residual gas that is flared:
$FM_{RG,h} = \rho_{RG,n,h} * FV_{RG,h}$
$FM_{RG,h}$ – mass flow rate of the residual gas in hour h;
$\rho_{RG,n,h}$ – density of the residual gas at normal conditions in hour h;
$FV_{RG,h}$ – volumetric flow rate of the residual gas in dry basis at normal conditions in the hour h

Determination of the mass fraction of carbon, hydrogen, oxygen, and nitrogen in the residual gas:
$Fm_{j,h} = \sum fv_{i,h} * AM_j * NA_{j,i} / MM_{RG,h}$
$Fm_{j,h}$ – mass fraction of element j in the residual gas in hour h;
$fv_{i,h}$ – volumetric fraction of component i in the residual gas in the hour h;
AM_j – atomic mass of element j;
$NA_{j,I}$ – number of atoms of element j in component i;
$MM_{RG,h}$ – molecular mass of the residual gas in hour h;
j – the elements carbon, hydrogen, oxygen and nitrogen;
i – the components CH4, CO, CO2, O2, H2, N2;

Determination of the volumetric flow rate of the exhaust gas on a dry basis:
$TV_{n,FG,h} = V_{n,FG,h} * FM_{RG,h}$
$TV_{n,FG,h}$ – volumetric flow rate of the exhaust gas in dry basis at normal conditions in hour;
$V_{n,FG,h}$ – volume of the exhaust gas of the flare in dry basis at normal conditions per kg of residual gas in the hour h;
$FM_{RG,h}$ – mass flow rate of the residual gas in the hour h;
$V_{n,FG,h} = V_{n,CO2,h} + V_{n,O2,h} + V_{n,N2,h}$
$V_{n,FG,h}$ – volume of the exhaust gas of the flare in dry basis at normal conditions per kg of residual gas in the hour h;
$V_{n,CO2,h}$ – quantity of CO2 volume free in the exhaust gas of the flare at normal conditions per kg of residual gas in the hour h;
$V_{n,O2,h}$ - quantity of O2 volume free in the exhaust gas of the flare at normal conditions per kg of residual gas in the hour h;
$V_{n,N2,h}$ - quantity of N2 volume free in the exhaust gas of the flare at normal conditions per kg of residual gas in the hour h;

Determination of methane mass flow rate in the exhaust gas on a dry basis:
$TM_{FG,h} = TV_{n,FG,h} * fv_{CH4,FG,h} / 1000000$
$TM_{FG,h}$ – mass flow rate of methane in the exhaust gas of the flare in dry basis at normal conditions in the hour h;
$TV_{n,FG,h}$ – volumetric flow rate of the exhaust gas in dry basis at normal conditions in hour h;
$fv_{CH4,FG,h}$ – concentration of methane in the exhaust gas of the flare in dry basis at normal conditions in hour h;

Determination of methane mass flow rate in the residual gas on a dry basis:
$TM_{RG,h} = FV_{RG,h} * fv_{CH4,RG,h} * \rho_{CH4,n}$
$TM_{RG,h}$ – mass flow rate of the methane in the residual gas in the hour h;
$FV_{RG,h}$ – volumetric flow rate of the residual gas in dry basis at normal conditions in hour h;
$fv_{CH4,RG,h}$ – volumetric fraction of methane un the residual gas on dry basis in hour h;
$\rho_{CH4,n}$ – density of methane at normal conditions;

Determination of the hourly flare efficiency:
$\eta_{flare,h} = 1 - TM_{FG,h} / TM_{RG,h}$
$\eta_{flare,h}$ – flare efficiency in the hour h;
$TM_{FG,h}$ – methane mass flow rate in exhaust gas averaged in a period of time t;
$TM_{RG,h}$ – mass flow rate of methane in the residual gas in the hour h;

Calculation of annual project emissions from flaring:
$PE_{CO2e,flare} = TM_{LFG,x} \cdot (1-\eta_{flare}) \cdot GWP_{CH4}$
$TM_{LFG,x}$ - mass flow rate of methane in the landfill gas fed to the flare under the Project activity,

tones CH_4/year; η_{flare} – flare efficiency; GWP_{CH4} – Global Warming Potential for methane; Mass flow rate of methane in the LFG is the quantity of gas that will be transported into flare device. Not all the methane will be flared as the device hasn't 100% efficiency (we assume flare efficiency is 90% this is conservative). When we multiply these two variables we can find the quantity of methane that wasn't burnt, by multiplying this quantity with GWP of methane we can find project emissions from LFG flaring ($PE_{CO2e, flare}$) [Acceptance and close out] NIR 13 is pending
[25-07-2008] – SGS representative - Elena Krasnova/Elton Chen Monitoring procedures (as a basis on Monitoring reports) are not always referring to direct monitoring but to calculated parameters included in monitoring plan as well. As per NIR 7 the conclusion was worked out to monitor the parameter $EC_{PJ,y}$, electricity consumed, therefore, PE ec,y – project emissions from electricity consumption by the project activity during the year, y (tCO2) should be properly calculated and presented in Monitoring report before verification process start. The same procedure applied to PE flare, y – project emissions from flaring of the residual gas stream in year, y (tCO2), thus please include in PDD section D. [Acceptance and close out] NIR 13 is pending ANSWER from NCSF (25.08.08) In the section D of the PDD was added ID 9 project emissions from LFG flaring ($PE_{CO2e, flare}$)
Date [08-09-2008] – SGS representative - Elena Krasnova/LA Parameter ID 9: project emissions from LFG flaring ($PE_{CO2e, flare}$) was added in monitoring plan [Acceptance and close out] NIR 13 is closed out

Date: Raised by: Elton Chen/Elena Krasnova

No.	Type	Issue	Ref
14	NIR	Evidence on EIA of the project activity shall be submitted, including transboundary impacts, ensuring their compliance with procedures as determined by the host Party	1.10, 6.1-6.6

Date: 12/05/2008 [Comments] The EIA of the Shirokorechenskiy LFG utilization project № 880-08-Д1650 was developed by a Moscow-based institute, *Mosvodokanalniiproject,* in conformity with the Russian environmental legislation in 2008. The EIA addresses the issues related to a possible negative impact of the project activities on the environment. The copy in Russian language is available on request.
Date: [27-05-2008] – SGS representative - Elena Krasnova/Elton Chen Environmental impact section is an integral part of technical documentation according to current legislation. Official EIA for the project was presented by the project and found in compliance with RU requirements. To have the project finalized a State conclusion on the project activity is mandatory that is still in the process. However, it is quite obvious that a result of the project implementation will decrease the negative environmental impacts on the surroundings. Meanwhile, relevant estimations, analysis of the environmental impacts should be provided in section F of the revised PDD for overall comprehension. [Acceptance and close out] NIR 14 is pending ANSWERS:

OK. We will include conclusion from EIA in section F.
[27-05-2008] – SGS representative - Elena Krasnova/Elton Chen The relevant Section F was updated in the PDD ver 02 dd 07-07-2008 NIR 14 is closed out NIR 14 was re-open and transformed to FAR1: FAR 1: Respond to FAR 1 has to be verified before Final Determination report release. The project should get the State Expert's Conclusion on the project activity.

Date: Raised by: Elton Chen/Elena Krasnova

No.	Type	Issue	Ref
15	NIR	It is not clear whether relevant stakeholders have been consulted? Has appropriate media been used to invite comments by local stakeholders? has the stakeholder consultation process been carried out in accordance with such regulations/laws? Is a summary of the stakeholder comments received and any comments have been taken into account? Please clarify	7.1-7.5
Date: 12/05/2008 [Comments] Stakeholders comments process have been carried out in conformity with Russian official consultation procedure. The letter signed by the Chairman of Committee for Environment and Nature Management of the Ekaterinburg City states that information on the project activity at Shirokorechenskiy project was published in the local newspaper "Vecherny Ekaterinburg" #42 27.02.2008. There were no comments received. The letter and newspaper was given to Vladimir Lukin during the site visit. (see in attachment 8)			
Date: [27-05-2008] – SGS representative - Elena Krasnova/Elton Chen OK accepted, please update the relevant section G in the revised PDD [Acceptance and close out] NIR 15 closed out			

Date: Raised by: Elton Chen/Elena Krasnova

No.	Type	Issue	Ref
16	NIR	As per information from our local staff, In order to have the project comply with all the legal requirements of RF, it is necessary to get Certificate of Conformity for the project equipment to get it imported to RF territory (RF Customs regulations) and for its usage (as per environmental legislation). As the project activities will use high temperature technology (1000 C) and explosive gases, therefore, as per Federal law # 116-FZ ("About industrial safety") dd 21.07.1997 the project installation falls under a category "Dangerous production unit". This fact requires getting the Conclusion and Registration in the Federal ministry of ecological, technological and nuclear control (the same ministry as for ecological expertise but in terms of technological control). After project implementation it is necessary to conduct correction of the permits granted to the landfill site on the environmental impacts. Have steps been taken to obtain these permits?	1.15
Date: 12/05/2008 [Comments] At present, negotiation on delivery of LFG capture and destruction equipment is in progress. The			

Certificate of Conformity will be issued when the equipment will be produced and ready for delivery (July 2008). This equipment will be the same which have been produced for Timochovo, Chmetievo and Dmitrovsky LFG utilization projects under the delivery contract with Ecocom. The Certificate for that has been issued (Certificate number is №РОСС DE.ГБ05.A00285). The copy is available on request. Therefore the issuance of the Certificate for equipment bound for Shirokorechenskiy project will not be problematic. All the next steps concerning the correction, permissions obtaining, safety requirements will be done in the process of exploitation.
Date: [27-05-2008] – SGS representative - Elena Krasnova/Elton Chen OK accepted [Acceptance and close out] NIR 16 is closed out

Date: Raised by: Elton Chen/Elena Krasnova

No.	Type	Issue	Ref
17	NIR	Please clarify on land owner of landfill site. If the company is different from a site owner and an operator does this impact on the ownership of the gas rights and the ERU rights? Is there an agreement with landowner to prevent ownership disputes over the ERUs once project is realized.	1.15

Date: 12/05/2008 [Comments] There will be no ownership disputes over the ERUs. The land owner of landfill site is EMUE “Spetsavtobaza”. Centre of Environmental Projects as Investor has entered with EMUE in the investment agreement under which the Project activities will be implemented. All cash inflows from ERU sales will be addressed to CEP as a return on investment under this agreement.
Date: [27-05-2008] – SGS representative - Elena Krasnova/Elton Chen OK accepted. Please provide the Investment Agreement between EMUE Specialized Motor-Transport Depot (EMUE “Spetsavtobaza”) and Center of Environmental projects to support the statement ANSWER: This preliminary investment agreement was signed in August 2007. See attached letter from CEP. And it will be provided after the final determination. [Acceptance and close out] NIR 17 is pending
[25-07-2008] – SGS representative - Elena Krasnova/Elton Chen The Investment Agreement between EMUE Specialized Motor-Transport Depot (EMUE “Spetsavtobaza”) and Center of Environmental Projects should be presented before Final Determination report is released, at the stage of Expert Conclusion issuance to Russian DFP on the basis of Draft Determination report. NIR 17 is pending. ANSWER from NCSF (25.08.08) Yes. The investment agreement between EMUE specialized Motor-Transport Depot (EMUE “Spetsavtobaza”) and Center of Environmental Projects will be presented on the basis of Draft Determination report.
Date [09-08-2008] – SGS representative - Elena Krasnova/LA NIR 17 was transformed to FAR 2 FAR 2: the submission of Investment agreement between EMUE specialized Motor-Transport

Depot (EMUE "Spetsavtobaza") and Center of Environmental Projects should be followed up on the basis of Final Determination report release. [Acceptance and close out]

Date: Raised by: Elton Chen/Elena Krasnova

No.	Type	Issue	Ref
18	NIR	A proof on project design engineering to be current good practice for LFG projects should be provided.	8.2.1
Date: 12/05/2008 [Comments] ECOCOM company finalizes the technical project for landfill site "Shirokorechenskiy". This company was established in 1999 and has a wide experience in LFG capture/utilization projects in many countries such as the Ukraine, the Slovac Republic, Germany, Latvia and Russia. As for Russia, Ecocom is pioneering LFG utilization projects in the country and bringing about state of the art technologies and new culture in waste management. Hence, the project design engineering for Shirikorechenskiy LFG utilization project to be of good practice.			
Date: [27-05-2008] – SGS representative - Elena Krasnova/Elton Chen Please provide documentary evidence to support the statement ANSWER : For more information concerning the ECOCOM one can see the company's site: www.ecocom.at [Acceptance and close out] NIR 18 is pending			
[25-07-2008] – SGS representative - Elena Krasnova/Elton Chen ECOCOM company's site: www.ecocom.at is not working. Please give us appropriate documentary reference/sources NIR 18 is pending ANSWER from NCSF (25.08.08) ECOCOM company's site: http://ecocom.at/			
Date [09-08-2008] – SGS representative - Elena Krasnova/LA Connection to ECOCOM company's site: www.ecocom.at is not stable, but the web site is workable. It was learned form the source about a number of partners of the company and particular about Haase Energietechnik Plc. This firm is a designer and a producer of landfill gas to energy systems, leachate treatment systems and systems for treatment of industrial gases. The German company, which has been producing and operating landfill gas equipment for more than 20 years. The company is the best on today's landfill gas equipment market meeting environment's requirements in Germany (TA-Luft), UK Emission Standards for Landfill Gas Flares. A proof on project design engineering to be current good practice for the current LFG project is acceptable [Acceptance and close out] NIR 18 is closed out			

Date: Raised by: Elton Chen/Elena Krasnova

No.	Type	Issue	Ref
19	NIR	Is the project technology likely to be substituted by other or more efficient technologies within the project period? Please explain.	8.2.3
Date: [Comments] No. The CEP is on signing the delivery contract with Ecocom. The equipment that will be installed under the contract is new, very efficient (flare efficiency 99% at 1000 ^{o}C of flare temperature) and expensive (app. 2 mln. euro). Therefore it is highly unlikely that CEP will shift to other technology within the project period.			

Date: [27-05-2008] – SGS representative - Elena Krasnova/Elton Chen Please provide the signed delivery contract as soon as it comes in force. [Acceptance and close out] NIR 19 is pending ANSWERS: The contract will be signed after the final determination of the project. After that we will be able to provide it, so it is impossible to do it now.
[25-07-2008] – SGS representative - Elena Krasnova/Elton Chen An absent of Contract with Supplier of LFG utilization equipment increases risks and will cause delays in the project implementation start planned from July-08 and consequently the start of crediting period from 1st August 2008. This factor should be taking into account in the final version of PDD, Section C NIR 19 is pending ANSWER from NCSF (25.08.08) The start date of the project was corrected.
Date [09-08-2008] – SGS representative - Elena Krasnova/LA NIR 19 was transformed to FAR 3. FAR 3: Respond to FAR 3 has to be verified before Initial verification start. The project should present Contract with the Supplier to support planned technological processes and to meet manufacture's requirements. [Acceptance and close out]

Date: Raised by: Elton Chen/Elena Krasnova

No.	Type	Issue	Ref
20	NIR	It was not clear in the PDD whether project activity will require extensive initial training and maintenance efforts. Please clarify the same in the PDD.	8.2.4

Date: 12/05/2008 The training of the staff is necessary. Under the pending contract supplier will provide training for local project staff (technicians and operators) to enable them to undertake the tasks required for both proper operation of the Project facilities and implementation of the monitoring plan before the Project become operational. Also the supplier will perform the necessary supervising of equipment maintenance.
Date: [27-05-2008] – SGS representative - Elena Krasnova/Elton Chen Please provide the signed delivery contract to support the statement on the training obligation by the equipment suppler as soon as it comes in force. [Acceptance and close out] NIR 20 is pending ANSWERS: See answer for NIR19
[27-05-2008] – SGS representative - Elena Krasnova/Elton Chen If the final delivery contract with a clause on 'Training needs' is not available at the moment, please consider another appropriate documents to confirm Preliminary Planning on Training for demonstrating it is significantly considered by the parties to have the project properly functioning.

NIR 20 is pending ANSWER from NCSF (25.08.08) The agreement of equipment supply will contain information of 'Training needs' The necessary agreement can be signed between the supplier and the Center of Ecological Projects but only after the getting of Draft Determination report. The necessary substitutions will be presented on the stage of first verification report at 2009.
Date [09-08-2008] – SGS representative - Elena Krasnova/LA NIR 20 was transformed to FAR 3. FAR 3: Respond to FAR 3 has to be verified before Initial verification start and/or 1st periodic. The project should present Contract with the Supplier to support planned technological processes and to meet manufacture's requirements and demonstrate compliance with training needs. [Acceptance and close out]

Date: Raised by: Elton Chen/Elena Krasnova

No.	Type	Issue	Ref
21	NIR	A crediting time should be clearly defined, period from August 2008 to December 2012 is not full five years. Please correct	8.3.2
Date: [Comments] Corrected			
Date: [27-05-2008] – SGS representative - Elena Krasnova/Elton Chen Please provide the revised PDD [Acceptance and close out] NIR 21 is pending			
[25-07-2008] – SGS representative - Elena Krasnova/Elton Chen The PPD ver 02 dd 07-07-2008 specified crediting period to be from 01 August 2008 to 31 December 2008 NIR 21 is closed out.			

Date: Raised by: Edgar Salinas

No.	Type	Issue	Ref
22	CAR	Project participants should bear in mind that the calculation of baseline emissions are a mathematic expression of what has been phrased in the identification of the baseline scenario. Table D.1.1.3. presents the parameter ID9: legislative and regulative requirements relating to the LFG projects. This is a discussion that should rather appear in section B.1 Description and justification of the baseline chosen. That is to say, project participants shall include the following alternative in the analysis: *"Complete or partial capture of landfill gas and destruction to comply with local regulations, contractual requirements, or to address safety and odour concerns"*. While doing so, project participants should demonstrate that there is no legal or contractual obligation to burn landfill gas if they want to use and adjustment factor (AD) of zero in their calculations.	3.1
Date: [Comments]			
Date: 11-06-2008- SGS Edgar Salinas			

ANSWERS:

We are agree with you. ID 9: legislative and regulative requirements relating to the LFG projects could be deleted from the Table D.1.1.3. But in that case there will be no need in use of option 1, in section D it can be substituted by option 2. If it is possible we offer to use this approach in section D.

Date: 06-08-2008- SGS Edgar Salinas
Project proponents must understand that CAR22 did not suggest deleting any text from the PDD. Option 2 "The project itself" implies that the project would be undertaken anyway without the benefits of carbon credits; the description of Option 2 does not address directly the situations whereby the project is rather implemented because of local regulations. However, if one reads Option 2 in conjunction with *Sub-step 1b. Compliance of alternatives chosen with current legislation and regulation,* the analysis could indirectly demonstrate whether the project is or not driven by legal requirements. Having this said, this CAR22 can be closed out.

Date: Raised by: Edgar Salinas

No.	Type	Issue	Ref
23	NIR	The flaring tool indicates that project participants should document in the PDD, which type of flare and which approach will be used to determine the flare efficiency (i.e. flaring tool page 3). To this extent, it is clear that the project in question is about an enclosed flare, however project participants should be more explicit in this regard in both the description of the project and technology to be employed (i.e. sections A.2 and A.4.2 of the PDD respectively). Further and more important, project participants should be more explicit with respect to the method applied to determine the efficiency of the flare. Based on footnote 7, it can be inferred that they will follow the manufacturers default values. However, although missing from the parameters listed in table D.1.1.1, the monitoring plan states that temperature of the exhaust gas of the flare will be measured to determine its efficiency, which may be interpreted as a continuous monitoring of the flare efficiency. Please, clarify which approach will be applied (i.e. see page 10 of the flaring tool)	2.4

Date: 12/05/2008
In project equipment there will be applied enclosed flare.
So we use approach that default value of flare efficiency should be used. In 'Tool to determine project emissions from flaring gases containing methane's flare efficiency in the hour *h* is 90% if the temperature in the exhaust gas of the flare (T_{flare}) is above 500^0 C for more than 40 minutes during the hour *h* and the manufacturer's specification on proper operation of the flare are met continuously during the hour h.
In our case ECOCOM performs technical project. The company has a wide experience in LFG treatment projects in many countries (Latvia, the Ukraine, Russia). In Moscow region it implements three projects where the same equipment is planned to be set. All the equipment has 'Confirmation of Flare efficiency from Pro2 Anlagentechnik GmbH' (see attachment ~~5~~ (6)) In this document flare efficiency is declared 99%, temperature of the flare >/= 1000^0C with monitoring, retention time >/= 0.3 s with 1000^0C.
So we use default value 90% as the equipment satisfies all the conditions (T_{flare} >/= 500^0C for more than 40 minutes during the hour h).

Date: [11-06-2008]
[Acceptance and close out]

NIR 23 CLOSED. New information was requested from the project participants in order to clarify which method for the determination of the flare efficiency was being used in the project activity as this was not clear in the PDD. Considering that according the manufacturers specifications the operating conditions of temperature and efficiency of the flare, being installed by the project, exceed the threshold set in the "Tool to determine project emissions from flaring gases containing methane"; the project participants will apply a 90% flare efficiency as suggested by the tool, which is acceptable. Provided that this is reflected in an unambiguous manner in the PDD, this NIR can be closed.

ANSWERS:

This information was added in the PDD in A 4.2. Technology(ies) to be employed, or measures, operations or actions to be implemented by the project

Date: Raised by: Edgar Salinas

No.	Type	Issue	Ref
24	CAR	Include in the description of the monitoring plan the following text: *"While implementing this project the monitoring procedures of the tools referred into this PDD will be also followed. This means that establishment of data not monitored and monitoring of parameters to be monitored will be performed as prescribed in these tools".*	4.3

Date: 12/05/2008
Could you clarify on how it comes along with the approach we used for estimation of methane emissions avoided from dumping waste at a solid waste disposal sites? Based on the guidance provided in ACM 0001 we used option where " in the tool x will refer to the year since the landfill started receiving wastes (x runs from the first year of the landfill operation (x=1960) to the year for which emissions are calculated (x=y))", whereas the Tool proposes to monitor amount of waste prevented from disposal starting with the first year after the project activity (x=2008). Therefore the Tool prescribes to make sampling to determine fraction of waste prevented from disposal and includes such data as $p_{n,j,x}$ (weight fraction of waste type j in the sample n collected during the year x) and z –number of samples collected during the year x. As we used historical data for determination of waste fractions we do not need to monitor such parameters.

As a compromise we propose the following wording *" The data to be monitored are established in conformity with the ACM 0001, the monitoring procedures of the tools referred to in the PDD that lay in conformity with the ACM 0001 also are followed ".*

Date: [11-06-2008]
[Acceptance and close out]

CAR 24 is CLOSED OUT: this corrective action request was raised in order to ensure the project activity follows accordingly the monitoring procedures of the tools that are applied in the PDD. In their response, project participants have expressed their concern regarding monitoring of waste prevented from disposal, which is monitored through sampling methods as per the "Tool to determine methane emissions avoided from dumping waste at a solid waste disposal site" because in their case they only need to use historical data for determination of waste fractions. Considering that the use of this tool, within ACM0001 v.8, applies only for the ex-ante estimation of baseline emissions and taking into account what the methodology says in this regard: "Sampling to determine the different waste types is not necessary, the waste composition can be obtained from previous studies"; we accept the proposition made by the project participants and

hereby close this CAR provided that the required modification is reflected in the new version of the PDD.

Date: [08-08-2008] Raised by: Elena Krasnova/Edgar Salinas

No.	Type	Issue	Ref
25	CAR	The project did not discuss anything about fugitive methane emissions in form of LFG not captured. As per the delivery contract from Ecocom company the contracted equipment will cover only 16 ha out of 20 ha, so it is assumed that gas collection system will be able to capture LFG with the efficiency of 80 %, i.e. LFG extraction wells can be providing coverage of 80 % of waste accumulated.	3.1

Date: ANSWER from NCSF (25.08.08)
According to the Preliminary business offer (see att.3) total area of landfill is 22 ha. But this is the area with slopes. The installation of the gas pumping equipment on the slopes is technically difficult as there is possibility for air "poisoning" of LFG. It may cause the reduction in LFG's methane concentration. So it will pose bad flaring. Therefore ECOCOM decided to install the equipment only on 16 ha.
But for the sake of being conservative we decided to change our calculations.
As only 80 % of the territory will be covered by the equipment we reduced our calculations.
Essential changes have been made in PDD and in Annex 4 ("Shirokorechensky calculation model") xls. file. Changes were made in the text of PDD. And in section E was added additional information:
Moreover, as per the Preliminary business offer from Ecocom company the contracted equipment will cover only 16 ha out of 22 ha, so it is assumed that gas collection system will be able to capture LFG with the efficiency of 80 %, i.e. LFG extraction wells can be providing coverage of 80 % of waste accumulated. Both factors were taken into account in the evaluation process.
So we use data from the table E 6 in the following formulas:
PE(table 8) = PE (table 6)*0.63*0.8
BE(table 8) = BE (table 6)*0.63*0.8
ER(table 8) = ER (table 6)*0.63*0.8

The evaluation results are provided in table E.8.

Table E.8. Results of estimated emission reductions

Year	Estimated project emissions (tCO_2-eq.)	Estimated baseline emissions (tCO_2-eq.)	Estimated emission reduction (tCO_2-eq.)
2009	44,754	255,098	210,344
2010	45,078	256,945	211,867
2011	45,391	258,731	213,340
2012	45,695	260,460	214,766
Total	**180,918**	**1,031,234**	**850,316**

Date: [09-08-2008] – SGS representative - Elena Krasnova/LA
PP approach is acceptable, meanwhile, the ERs were again re-calculated and the corrected data were indicated in the revised PDD , v.3 dated 19-09-2008
[Acceptance and close out] CAR 25 is closed out

Observations:
1. At this point in time it is not possible to confirm if the sponsor Party is in compliance with its obligations under Articles 5 & 7 of the Kyoto Protocol. This will need to be confirmed before the project can officially be recognized as JI project.

Information of the eligibility of Host Party is not available yet on UNFCCC website as per 25 March'08, refer to http://ji.unfccc.int/Eligibility