DETERMINATION REPORT GLOBAL CARBON B.V.

DETERMINATION OF THE "FUEL SWITCH AT SLAVYANSK SALT-MINING COMPANY LLC, UKRAINE"

REPORT NO. UKRAINE-DET/0441/2012

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BUREAU VERITAS CERTIFICATION

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Client: Global Carbon B.V.	Client ref.: Lennard de Klerk

Summary:

Bureau Veritas Certification has made the determination of JI project "Fuel switch at Slavyansk Salt-Mining Company LLC, Ukraine"of Global Carbon B.V. located in Slavyansk, Donetsk region, Ukraine on the basis of UNFCCC criteria for the JI, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 6 of the Kyoto Protocol, the JI rules and modalities and the subsequent decisions by the JI Supervisory Committee, as well as the host country criteria.

The determination scope is defined as an independent and objective review of the project design document, the project's baseline study, monitoring plan and other relevant documents, and consisted of the following three phases: i) desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final determination report and opinion. The overall determination, from Contract Review to Determination Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

The first output of the determination process is a list of Clarification and Corrective Action Requests (CL and CAR), presented in Appendix A. Taking into account this output, the project proponent revised its project design document.

In summary, it is Bureau Veritas Certification's opinion that the project correctly applies Guidance on criteria for baseline setting and monitoring and meets the relevant UNFCCC requirements for the JI and the relevant host country criteria.

Report No.: UKRAINE-det/0441/2012	Subject Group: JI	
Project title: "Fuel switch at Slavyansk Salt-Mining Company LLC, Ukraine"		
Work carried out by: Olena Manziuk – Lead Verifier Denis Pishchalov – Financial Specialist Vasiliy Kobzar – Technical Specialist		
Work reviewed by: Ivan Sokolov - Internal Technical Reviewer Vyacheslav Yeriomin – Technical Specialist		
Work approved by: Ivan Sokolov - Operational Manager		
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1 INTRODUCTION

Global Carbon B.V. has commissioned Bureau Veritas Certification to determine its JI project "Fuel switch at Slavyansk Salt-Mining Company LLC, Ukraine" (hereafter called "the project") at Slavyansk, Donetsk region, Ukraine.

This report summarizes the findings of the determination of the project, performed on the basis of UNFCCC criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

1.1 Objective

The determination serves as project design verification and is a requirement of all projects. The determination is an independent third party assessment of 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 determined in order to confirm that the project design, as documented, is sound and reasonable, and meets the stated requirements and identified criteria. Determination is a requirement for all JI projects and 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 Article 6 of the Kyoto Protocol, the JI rules and modalities and the subsequent decisions by the JI Supervisory Committee, as well as the host country criteria.

1.2 Scope

The 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.

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.

1.3 Determination team

The determination team consists of the following personnel:

Olena Manziuk

Bureau Veritas Certification Team Leader, Climate Change Lead Verifier

Denis Pishchalov
Bureau Veritas Certification Team Member, Financial Specialist

Vasiliy Kobzar
Bureau Veritas Certification Team Member, Technical specialist

This determination report was reviewed by:

Ivan Sokolov
Bureau Veritas Certification Internal Technical Reviewer

Vyacheslav Yeriomin
Technical Specialist of Internal Technical Reviewer

2 METHODOLOGY

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

In order to ensure transparency, a determination protocol was customized for the project, according to the version 01 of the Joint Implementation Determination and Verification Manual, issued by the Joint Implementation Supervisory Committee at its 19 meeting on 04/12/2009. The protocol shows, in a transparent manner, criteria (requirements), means of determination and the results from determining the identified criteria. The determination protocol serves the following purposes:

- It organizes, details and clarifies the requirements a JI project is expected to meet;
- It ensures a transparent determination process where the determiner will document how a particular requirement has been determined and the result of the determination.

The completed determination protocol is enclosed in Appendix A to this report.

2.1 Review of Documents

The Project Design Document (PDD) submitted by Global Carbon B.V. and additional background documents related to the project design and baseline, i.e. country Law, Guidelines for users of the joint implementation project design document form, Guidance on criteria for baseline setting and monitoring, Kyoto Protocol, Clarifications on Determination Requirements to be Checked by an Accredited Independent Entity were reviewed.

To address Bureau Veritas Certification corrective action and clarification requests, Global Carbon B.V. revised the PDD and resubmitted it.

The determination findings presented in this report relate to the project as described in the PDD version 1.0 dated 01/03/2012, the PDD version 2.0 dated 24/04/2012, and the PDD version 3.0 dated 19/09/2012.

2.2 Follow-up Interviews

On 14/03/2012 Bureau Veritas Certification performed site visit interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of Global Crbon B.V. and Slavyansk Salt-Mining Company LLC were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
Slavyansk Salt-Mining Company LLC	➢ Implementation schedule ➢ Project management organisation ➢ Environmental Impact Assessment ➢ Project monitoring responsibilities ➢ Measurement equipment ➢ Quality control and quality assurance procedures ➢ Environmental impacts affected ➢ Local authorities and public opinion
Global Carbon B.V.	➢ Applicability of methodology ➢ Baseline and Project scenarios ➢ Barriers analysis ➢ Additionality justification ➢ Common practice analysis ➢ Monitoring plan ➢ Conformity of PDD to JI requirements

2.3 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the determination is to raise the requests for corrective actions and clarification and any other outstanding issues that needed to be clarified for Bureau Veritas Certification positive conclusion on the project design.

If the determination team, in assessing the PDD and supporting documents, identifies issues that need to be corrected, clarified or improved with regard to JI project requirements, it will raise these issues and inform the project participants of these issues in the form of:

(a) Corrective action request (CAR), requesting the project participants to correct a mistake in the published PDD that is not in accordance with the (technical) process used for the project or relevant JI project requirement or that shows any other logical flaw;

(b) Clarification request (CL), requesting the project participants to provide additional information for the determination team to assess compliance with the JI project requirement in question;

(c) Forward action request (FAR), informing the project participants of an issue, relating to project implementation but not project design, that needs to be reviewed during the first verification of the project.

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

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

3 PROJECT DESCRIPTION

Slavyansk Salt-Mining Company LLC is the leading manufacturer of vacuum-evaporated salt in Ukraine. The purpose of Joint Implementation project (JI project) “Fuel switch at Slavyansk Salt-Mining Company LLC, Ukraine” is reduction of greenhouse gas emissions into the atmosphere by switching to the fuels that have lower greenhouse potential, and through implementation of energy-efficiency modernization activities.

As per situation, the salt production technology applied at Slavyansk Salt-Mining Company LLC required a large amount of thermal energy, mostly in the form of steam. Before the project implementation, all steam was generated by four boilers type DKVR 10-13 operating on fuel oil. Further, the steam was conveyed from the boiler house to the production facilities through pipeline. The pipeline was outworn and poorly insulated, that is why a large amount of heat was lost during the transportation, especially in the cold period. In addition technological line of salt extraction had outdated technology and aged equipment. Likewise, a considerable amount of thermal energy was lost, and heat of the salted condensate (i.e., waste product obtained during the salt evaporation process) was not utilized. Thus, aggregate energy efficiency of heat generation, distribution and utilization at the enterprise was low that leads to increasing of steam demand associated with higher fuel combustion and greenhouse gas emissions.

According to the developed project design document, continuation of the existing practice of the plant operation is considered as baseline scenario. The chosen baseline scenario presumes to consume fuel oil for steam generation and not to run significant modernization measures in the absence of the JI mechanism incentives by the Slavyansk Salt-Mining Company LLC.

The proposed project includes implementation of two following core measures aimed at reducing greenhouse gas emissions into the atmosphere:

- Switching steam generation to less carbon-intensive fuels. Namely, fuel oil consumption was switched to natural gas and solid biomass (i.e., pellets of sunflower husks and sawdust). This activity includes rehabilitation of previously mothballed boiler type DE-25-14, purchasing and putting into operation of new boiler type DE-25-14, and modernization of existing boilers type DKVR 10-13;
- Improving energy-efficiency of the existing scheme of heat transmission and utilization to reduce steam consumption and fuel combustion. The plant steam pipeline is to be rehabilitated, special scheme enabling to utilize heat of the salt condensate is to be implemented, and energy-efficiency measures at the plant section of vacuum-evaporation are to be introduced.

Based on the project developer estimation that was justified during determination, GHG emission reductions will be achieved due to the fuel switching and implementation of the energy-efficiency measures. The amount of average annual emission reductions at the Slavyansk Salt-Mining Company LLC is 42 502 tonnes CO_2 equivalent for the period 2008-2012 and 59 814 tonnes CO_2 equivalent for the period 2013-2019.

The identified areas of concern as to project description, project participants response and BV Certification's conclusion are described in Appendix A (refer to CAR02, CAR03, and CL01).

4 DETERMINATION CONCLUSIONS

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

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

The Clarification and Corrective Action Requests are stated, where applicable, in the following sections and are further documented in the Determination Protocol in Appendix A. The determination of the Project resulted in eighteen Corrective Action Requests and four Clarification Requests.

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

4.1 Project approvals by Parties involved (19-20)

After finishing JI project determination report, the PDD and Determination Report will be presented to State Environmental Investments Agency of Ukraine (SEIA) for receiving the Letter of Approval (LoA).

The identified areas of concern as to project approvals by Parties involved, project participants response and BV Certification's conclusion are described in Appendix A (refer to CAR01 and CL02).

4.2 Authorization of project participants by Parties involved (21)

The participation of each legal entities listed as project participants in the PDD will be authorized by NFPs (e.g., State Entity of Ukraine) through Letter of Approval that should be issued after determination process. Also, refer to section 4.1 of this report.

4.3 Baseline setting (22-26)

The PDD explicitly indicates that using a methodology for baseline setting and monitoring developed in accordance with appendix B and with further guidance on baseline setting and monitoring developed by the Joint Implementation Supervisory Committee (JISC) (hereinafter referred to as JI specific approach) was the selected approach for identifying the baseline. Due to the fact that there is no approved CDM baseline and monitoring methodology which is applicable in its totality and without any revisions to salt production plant, the JI specific approach is applied.

The PDD provides a detailed theoretical description in a complete and transparent manner, as well as justification, that the baseline is established:

(a) By listing and describing the following plausible future scenarios on the basis of conservative assumptions and selecting the most plausible one:

- ✓ Continuation of the existing situation;
- ✓ Implementation of modernization activities (the proposed project without JI benefits);
- ✓ Reconstruction of only steam pipeline without other modernization activities;
- ✓ Switching from fuel oil to natural gas and biomass without other modernization activities;

- ✓ Modernization of salt producing equipment without other reconstruction or modernization activities;
- ✓ Installation of new coal-fired boilers for steam generation.

(b) Taking into account relevant national and/or sectoral policies and circumstances, such as sectoral reform initiatives, local fuel availability, power sector expansion plans, and the economic situation in the project sector. In this context, the key factors that affect a baseline are taken into account (e.g., sectoral reform policies and legislation, economic situation/growth and socio-demographic factors in the relevant sector as well as resulting predicted demand, suppressed and increasing demand, availability of capital, local availability of technologies, skills and know-how and availability of best available technologies in the future, fuel prices and availability, national and subnational expansion plans for the energy sector)

As a result of the performed analysis of the key factors affected the plausible future scenarios, it can be concluded that the most plausible future scenario is the first scenario: continuation of the existing situation. The scenario assumed to consume fuel oil for steam generation and not to run significant modernization measures in the absence of the JI mechanism incentives by the Slavyansk Salt-Mining Company LLC. Thus, the scenario concerns continuation of the existing situation is the baseline.

For estimation of greenhouse gases emissions according to the baseline, project developer used following parameters: Specific consumption of thermal energy for salt production in the baseline scenario, Quantity of salt produced in the project scenario in year *y*, Carbon oxidation factor of fuel oil in year *y*, and Carbon content of fuel oil in year *y*.

4.4 Additionality (27-31)

JI specific approach is chosen for justification of additionality of considered JI project. The latest version of Guidance on criteria for baseline setting and monitoring (version 03) was used to provide traceable and transparent information showing that the baseline was identified on the basis of conservative assumptions and that the project scenario is not part of the identified baseline scenario. The PDD provides a justification of the applicability of the identified approach. All explanations, descriptions and analyses are made in accordance with the Guidance on criteria for baseline setting and monitoring that is a good practice for additionality justification.

Additionality proofs are provided in the project design documents. Project developers considered six future scenarios to establish a baseline.

However, four of them (i.e., scenarios 3-6) were ruled out at the stage of Sub step 2b of the PDD because were unfavourable for implementation. So, only two realistic and credible alternative scenarios to the project activity which are in compliance with mandatory legislation and regulations were considered by the project developers. Investment analysis and common practice analysis were performed to assess the JI project additionality. Investment analysis consists of benchmark analysis and sensitivity analysis. The JI project benchmark analysis shows that possible project activity results in negative NPV under current conservative discount rate. Hence, the JI project cannot be considered as a financially attractive. Summary of sensitivity analysis performed by project developers justifies that the project does not reach positive NPV under any of the varying assumptions. Concluding, JI project investment analysis provided in the PDD confirms that project activity is unlikely to be financially attractive. Also, common practice analysis was performed. Assessment of situation in Ukraine that can be relevant to the JI project was not widely observed. In addition, the biomass sector and industrial application of biomass boilers in Ukraine are faced a list of different barriers. Based on the analysis, it can be concluded that the JI project activity is not a common practice.

Thus, the proposed project is not the baseline scenario and is additional.

Additionality proofs is demonstrated appropriately as a result of the analysis using the approach chosen.

The identified areas of concern as to additionality, project participants response and BV Certification's conclusion are described in Appendix A (refer to CAR04, CAR05, CAR06, CAR07, CAR08, CAR09, CAR10, and CL03).

4.5 Project boundary (32-33)

As stated in sections above, JI specific approach is used for considered JI project. The GHG emission sources are determined according requirements of the Guidance on criteria for baseline setting and monitoring, version 03.

The project boundary defined in the PDD encompasses all anthropogenic emissions by sources of greenhouse gases (GHGs) that are:

(i) Under the control of the project participants such as steam boilers and salt production facilities that are under the control of the Slavyansk Salt-Mining Company LLC as they are the property of the Company and are directly operated by the Company;

(ii) Reasonably attributable to the project such steam boilers working on fuel, steam boilers working on biomass, electricity consumption devices at the Slavyansk Salt-Mining Company LLC ,etc.; and

(iii) Significant, i.e., as a rule of thumb, would by each source account on average per year over the crediting period for more than 1 per cent of the annual average anthropogenic emissions by sources of GHGs, or exceed an amount of 2,000 tonnes of CO_2 equivalent, whichever is lower.

Also, JI project boundary is presented using the principal scheme (refer to section B.3 of the project design document).

The delineation of the project boundary and the gases and sources included are appropriately described and justified in the PDD

4.6 Crediting period (34)

The PDD states the starting date of the project as the date on which the implementation JI project action has began and the starting date is 08/11/2007, which is after the beginning of 2000. That is the day when works on rehabilitation of natural gas-fired boiler DE-25-14 started.

The PDD states the expected operational lifetime of the project in years and months, which is 12 years or 144 months.

The PDD states the length of the crediting period in years and months, which is 5 years or 60 months, and its starting date as 01/01/2008, which is after the date the first emission reductions are generated by the project. Emission reductions generated after the crediting period may be used in accordance with an appropriate mechanism under the UNFCCC. Under the national regulations, the crediting period can extend beyond 2012. It is the subject to the approval by the Host Party. Thus, taking into consideration that point, project developers stated the length of the crediting period as 12 years and 0 months or 144 months, starting on 01/01/2008 and finishing on 31/12/2019.

The PDD states that the crediting period for the issuance of ERUs starts only after the beginning of 2008 and does not extend beyond the operational lifetime of the project.

The PDD states that the extension of its crediting period beyond 2012 is subject to the host Party approval, and the estimates of emission reductions are presented separately for those until 2012 and those after 2012 in all relevant sections of the PDD.

4.7 Monitoring plan (35-39)

The PDD in its monitoring plan section explicitly indicates that JI specific approach was selected. Identified JI specific approach is applied in accordance with the Guidance on criteria for baseline setting and monitoring (version 03).

The monitoring plan describes all relevant factors and key characteristics that will be monitored, and the period in which they will be monitored, in particular also all decisive factors for the control and reporting of project performance, such as Consumption of fuel oil for production of salt in the project scenario in year y, Consumption of natural gas for production of salt in year y, Specific emission factor of carbon dioxide for electricity consumed from the grid in year *y*, Net calorific value of fuel oil in year y, Net calorific value of natural gas in year y, Quantity of salt produced in the project scenario in year y, etc.

The monitoring plan draws on the list of standard variables indicated in appendix B of "Guidance on criteria for baseline setting and monitoring" developed by the JISC, as appropriate BE_y, PE_y, and $EF_{CO2,ELEC,y}$, $P_{Salt,PJ,y}$, $NCV_{Fuel\_oil,y}$, $NCV_{NG,y}$, and other variables.

The monitoring plan explicitly and clearly distinguishes:

(i) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), and that are available already at the stage of determination, such as Specific consumption of thermal energy for salt production in the baseline scenario ($SHC_{Salt,BL}$).

(ii) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), but that are not already available at the stage of determination, are absent in regarded JI project.

(iii) Data and parameters that are monitored throughout the crediting period, such as Quantity of salt produced in the project scenario in year *y*, Consumption of fuel oil for production of salt in the project scenario in year *y*, Consumption of natural gas for production of salt in year *y*, Specific emission factor of carbon dioxide for electricity consumed from the grid in year *y*, Electricity consumption for biomass handling in the project scenario in year *y*, Carbon oxidation factor of fuel oil in year *y*, Carbon oxidation factor of natural gas in year *y*, Carbon content of fuel oil in year *y*, Carbon content of natural gas in year *y*, and other parameters.

The monitoring plan describes the methods employed for data monitoring (including its frequency) and recording, such as the collection and archiving of all monitoring data and necessary information, the collection and archiving of information on environmental impacts due to the JI project, monitoring frequency of parameters, etc. The respective information for each monitoring parameter is sufficiently described in the section D of the project design document.

The monitoring plan elaborates all algorithms and formulae used for the estimation/calculation of baseline emissions and project emissions from the JI project, and emission reductions, such as:

Baseline emissions calculation:

$$BE_y = SHC_{Salt,BL} * P_{Salt,PJ,y} * EF_{CO2,Fuel\_oil,y}$$

where,

BE_y – Baseline emissions in year *y*, [tCO_2e];

$P_{Salt,PJ,y}$ – Quantity of salt produced in the project scenario in year *y*, [t];

$SHC_{Salt,BL}$ – Specific consumption of thermal energy for salt production in the baseline scenario, [GJ/t];

$EF_{CO2,Fuel\_oil,y}$ – Carbon dioxide emission factor for fuel oil combustion in year *y*, [tCO_2e/GJ].

Calculation of Carbon dioxide emission factor for fuel oil combustion is according to the formula:

$$EF_{CO2,Fuel\_oil,y} = \frac{OXID_{Fuel\_oil,y} \cdot k^{C}_{Fuel\_oil,y} \cdot 44/12}{1000}$$

where,

$EF_{CO2,Fuel\_oil,y}$ – Carbon dioxide emission factor for fuel oil combustion in year *y*, [tCO_2e/GJ];

$OXID_{Fuel\_oil,y}$ – Carbon oxidation factor of fuel oil in year *y*, [ratio];

$k^{C}_{Fuel\_oil,y}$ – Carbon content of fuel oil in year *y*, [tC/TJ];

44/12 – Ratio between molecular mass of CO_2 and C. Reflect oxidation of C to CO_2;

1/1000 – Conversion factor from GJ into TJ.

Project emissions calculation:

$$PE_y = PE_{Fuel,y} + PE_{ELEC,y}$$

where,

PE_y – Project scenario emissions in year *y*, [tCO_2e];

$PE_{Fuel,y}$ – Project emissions due to fossil fuel consumption in year *y*, [tCO_2e];

$PE_{ELEC,y}$ – Project emissions due to electricity consumption for biomass handling in year *y*, [tCO_2e].

Project emissions due to fossil fuel consumption in year *y* is calculated as per formula:

$$PE_{Fuel,y} = FC_{Fuel\_oil,PJ,y} \cdot NCV_{Fuel\_oil,y} \cdot EF_{CO2,Fuel\_oil,y} + FC_{NG,PJ,y} \cdot NCV_{NG,y} \cdot EF_{CO2,NG,y}$$

where,

$PE_{Fuel,y}$ – Project emissions due to fossil fuel consumption in year *y*, [tCO_2e];

$FC_{Fuel\_oil,PJ,y}$ – Consumption of fuel oil for production of salt in the project scenario in year *y*, [t];

$NCV_{Fuel\_oil,y}$ – Net calorific value of fuel oil in year *y*, [GJ/t];

$EF_{CO2,Fuel\_oil,y}$ – Carbon dioxide emission factor for fuel oil combustion in year *y*, [tCO_2e/GJ];

$FC_{NG,PJ,y}$ – Consumption of natural gas for production of salt in year *y*, [1000 m^3];

$NCV_{NG,y}$ – Net calorific value of natural gas in year *y*, [GJ/1000 m^3];

$EF_{CO2,NG,y}$ – Carbon dioxide emission factor for natural gas combustion in year *y*, [tCO_2e/GJ].

Calculation of Carbon dioxide emission factor for fuel oil combustion is according to the formula:

$$EF_{CO2,Fuel\_oil,y} = \frac{OXID_{Fuel\_oil,y} \cdot k^{C}_{Fuel\_oil,y} \cdot 44/12}{1000}$$

where,

$EF_{CO2,Fuel\_oil,y}$ – Carbon dioxide emission factor for fuel oil combustion in year *y*, [tCO_2e/GJ];

$OXID_{Fuel\_oil,y}$ – Carbon oxidation factor of fuel oil in year *y*, [ratio];

$k^{C}_{Fuel\_oil,y}$ – Carbon content of fuel oil in year *y*, [tC/TJ];

44/12 – Ratio between molecular mass of CO_2 and C. Reflect oxidation of C to CO_2;

1/1000 – Conversion factor from GJ into TJ.

Calculation of Carbon dioxide emission factor for natural gas combustion is according to the formula:

$$EF_{CO2,NG,y} = \frac{OXID_{NG,y} \cdot k^{C}_{NG,y} \cdot 44/12}{1000}$$

where,

$EF_{CO2,NG,y}$ – Carbon dioxide emission factor for natural gas combustion in year *y*, [tCO_2e/GJ];

$OXID_{NG,y}$ – Carbon oxidation factor of natural gas in year *y*, [ratio];

$k^{C}_{NG,y}$ – Carbon content of natural gas in year *y*, [tC/TJ];

44/12 – Ratio between molecular mass of CO_2 and C. Reflect oxidation of C to CO_2;

1/1000 – Conversion factor from GJ into TJ.

Project emissions due to electricity consumption for biomass handling in year *y* is calculated as per formula:

$$PE_{ELEC,y} = EC_{Biomass,PJ,y} \cdot EF_{CO2,ELEC,y}$$

where,

$PE_{ELEC,y}$ – Project emissions due to electricity consumption for biomass handling in year *y*, [tCO_2e].

$EC_{Biomass,PJ,y}$ – Electricity consumption for biomass handling in the project scenario in year *y*, [MWh];

$EF_{CO2,ELEC,y}$ – Specific emission factor of carbon dioxide for electricity consumed from the grid in year *y*, [tCO_2e/MWh].

Taking into account the requirement of the “Guidance on Criteria for Baseline Setting and Monitoring” version 03 (paragraph 18), project developers made an assessment of the potential leakage of regarded JI project. As per Guidance, only those emission sources that account for, on average per year over the crediting period, more than 1 per cent of the difference between project and baseline emissions, or which exceed an amount of 2 000 tonnes of CO_2 equivalent, whichever is lower, shall be included. Results of assessment described in the PDD section D.3 illustrates that the leakages are below the consideration level, and they will be excluded from the calculation of emission reductions. Thus, No significant leakages are to be occur during the JI project activity implementation and $LE_y = 0$.

JI project Emission Reductions calculation:

$$ER_y = BE_y - PE_y - LE_y$$

where,

ER_y – Carbon dioxide emission reductions in JI Project in year *y*, [tCO_2e];

BE_y – Baseline emissions in year *y*, [tCO_2e];

PE_y – Project scenario emissions in year *y*, [tCO_2e];

LE_y – Leakages in year *y*, [tCO_2e].

As a fact, more detailed information about formulae used for calculations provided in section D of the PDD.

The monitoring plan presents the quality assurance and control procedures for the monitoring process. As PDD describes, measuring devices are calibrated in compliance with the state regulation and plant internal procedure. This includes, as appropriate, information on calibration and on how records on data and accuracy are kept and made available on request.

The monitoring plan clearly identifies the responsibilities and the authority regarding the monitoring activities. As a matter of fact, chief engineer is responsible for supervision of monitoring procedure at the Slavyansk Salt-Mining Company LLC. All company departments that are involved in data monitoring such as technical department, energy department, environmental and labour protection department, and other departments report to chief engineer. And finally the company documentation is to be sent to representatives of Global-Carbon B.V. for processing and periodic monitoring report preparation. The detailed scheme of the monitoring data collection, delivery and processing is provided in section D of the project design document.

The monitoring plan provides, in tabular form, a complete compilation of the data that need to be collected for its application, including data that are measured and recorded and data that are collected from other sources (e.g. official statistics, national inventory report, national orders, plant records from the measurement equipment, etc.) but not including data that are calculated with equations.

The monitoring plan indicates that the data monitored and required for verification are to be kept for two years after the last transfer of ERUs for the project.

The identified areas of concern as to monitoring plan, project participants response and BV Certification's conclusion are described in Appendix A (refer to CAR11, CAR12, CAR13, CAR14, CAR15, CL04, and CAR18).

4.8 Leakage (40-41)

According to the "Guidance on Criteria for Baseline Setting and Monitoring" version 03 (paragraph 18), only those emission sources that account for, on average per year over the crediting period, more than 1 per cent of the difference between project and baseline emissions, or which exceed an amount of 2 000 tonnes of CO_2 equivalent, whichever is lower, shall be included. The PDD appropriately describes an assessment of the potential leakage of the project and appropriately explains which sources of leakage are to be calculated, and which can be neglected, such as carbon dioxide emissions from fuel combustion during the biomass transportation from a supplier to the plant.

Analysis performed by project developers proves that the leakages of the JI project are 300 tonnes of CO_2 equivalent. Annual average difference between project and baseline emissions is over 40 000 tonnes of CO_2 equivalent. One percent of them is 400 tonnes of CO_2 equivalent. That is why the leakages are below the consideration level, and they are excluded from the calculation of emission reductions for simplification. Furthermore, fuel oil delivery to the plant in the baseline scenario is also associated with leakages, such as power and diesel consumption for railway delivery. This leakage was also not taken into account, which is conservative.

The estimation shows that leakage is insignificant and can be neglected (i.e., $LE_y = 0$).

4.9 Estimation of emission reductions or enhancements of net removals (42-47)

The PDD indicates assessment of emissions in the baseline scenario and in the project scenario as the approach chosen to estimate the emission reductions generated by the JI project.

The PDD provides the ex ante estimates of:

(a) Emissions for the project scenario (within the project boundary), which are 189 248 tonnes of CO_2 eq. for the first commitment period (2008-2012) and 130 102 tonnes of CO_2 eq. that will be achieved after the first commitment period (2013-2019);

(b) No significant leakages will occur during the project lifetime, $LEy = 0$;

(c) Emissions for the baseline scenario (within the project boundary), which are 401 756 tonnes of CO2eq for the first commitment period (2008-2012) and 548 800 tonnes of CO_2 eq. that will be achieved after the first commitment period (2013-2019);

(d) Emission reductions adjusted by leakage (based on (a)-(c) above), which are 212 508 tonnes of CO_2 eq for the first commitment period (2008-2012) and 418 698 tonnes of CO_2 eq. that will be achieved after the first commitment period (2013-2019).

The estimates referred to above are given:

(a) On a annual basis;

(b) From 01/01/2008 to 31/12/2019, covering the whole crediting period;

(c) On a source-by-source basis;

(d) For GHG gas, which are CO_2;

(e) In tonnes of CO2 equivalent, using global warming potentials defined by decision 2/CP.3 or as subsequently revised in accordance with Article 5 of the Kyoto Protocol;

The formula used for calculating the estimates referred above, which are for baseline emissions, project emissions, and emission reductions, are consistent throughout the PDD.

For calculating the estimates referred to above, key factors such as sectoral reform policies and legislation, economic situation/growth and socio-demographic factors in the relevant sector as well as resulting predicted demand, suppressed and increasing demand, availability of capital, local availability of technologies, skills and know-how and availability of best available technologies in the future, fuel prices and availability, national and subnational expansion plans for the energy sector influencing the baseline emissions and the activity level of the project and the emissions as well as risks associated with the project were taken into account, as appropriate.

Data sources used for calculating the estimates referred to above, such as official statistics, national inventory report, national orders, technical reports, plant records from the measurement equipment are clearly identified, reliable and transparent.

Emission factors, such as $EF_{CO2,Fuel\_oil,y}$, $EF_{CO2,NG,y}$, $EF_{CO2,ELEC,y}$ were selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice.

The estimation referred to above is based on conservative assumptions and the most plausible scenarios in a transparent manner.

The estimates referred to above are consistent throughout the PDD.

The annual average of estimated emission reductions over the crediting period is calculated by dividing the total estimated emission reductions over the crediting period by the total months of the crediting period, and multiplying by twelve.

The PDD, on its version 3.0, includes an illustrative ex ante emissions calculation.

4.10 Environmental impacts (48)

The PDD lists and attaches documentation on the analysis of the environmental impacts of the project, including transboundary impacts, in accordance with procedures as determined by the host Party, such as the Ukrainian State Construction Standard DBN A.2.2.-1-2003.

Environmental Impact Assessment (EIA) was carried out for JI project. Company Ekotehnologiya LLC (Donetsk) conducted all works associated with EIA in accordance with the Ukrainian. The documentation of EIA was provided to the verification team. The EIA considers various aspects of environmental protection with regard to the project implementation.

In summary, the project impact on land, soil, water resources, flora and fauna is minimal. The social impact of the project is positive as if the project creates job opportunities for local residents. Since the project has been implemented within the plant territory and does not require additional allotment of land, it will not cause negative impact on anthropogenic environment.

Moreover, the level of hazardous substance emissions into the surface air caused by the project has been thoroughly analyzed in course of EIA development. It has been assessed that the level of hazardous substances does not exceed the maximal allowable level. According to the provided information, the project does not lead to negative transboundary effect.

The PDD provides conclusion and all references to supporting documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party.

The identified areas of concern as to environmental impacts, project participants response and BV Certification's conclusion are described in Appendix A (refer to CAR16 and CAR17).

4.11 Stakeholder consultation (49)

Based on provided documentations, there is concluded that stakeholder consultation was not undertaken as it is not required by the host party legislation.

4.12 Determination regarding small scale projects (50-57)

Not applicable.

4.13 Determination regarding land use, land-use change and forestry (LULUCF) projects (58-64)

Not applicable.

4.14 Determination regarding programmes of activities (65-73)

Not applicable.

5 SUMMARY AND REPORT OF HOW DUE ACCOUNT WAS TAKEN OF COMMENTS RECEIVED PURSUANT TO PARAGRAPH 32 OF THE JI GUIDELINES

No comments, pursuant to paragraph 32 of the JI Guidelines, were received.

6 DETERMINATION OPINION

Bureau Veritas Certification has performed a determination of the JI project "Fuel switch at Slavyansk Salt-Mining Company LLC, Ukraine" in Ukraine. The determination was performed on the basis of UNFCCC criteria and host country criteria and also on the criteria given to provide for consistent project operations, monitoring and reporting.

The determination consisted of the following three phases: i) a desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) the resolution of outstanding issues and the issuance of the final determination report and opinion.

Project participant used the latest tool for demonstration of the additionality. In line with this tool, the PDD provides investment analysis and common practice analysis to determine that the project activity itself is not the 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 and maintained as designed, the project is likely to achieve the estimated amount of emission reductions.

The determination revealed one pending issue related to the current determination stage of the project: the issue of the written approval of the project and the authorization of the project participant by the host Party. If the written approval with the authorization by the host Party is awarded, it is our opinion that the project as described in the Project Design Document, version 3.0 meets all the relevant UNFCCC requirements for the determination stage and the relevant host Party criteria.

The review of the project design documentation (version 3.0) and the subsequent follow-up interviews have provided Bureau Veritas Certification with sufficient evidence to determine the fulfillment of stated criteria. In our opinion, the project correctly applies and meets the relevant UNFCCC requirements for the JI and the relevant host country criteria.

The determination is based on the information made available to us and the engagement conditions detailed in this report.

7 REFERENCES

Category 1 Documents:
Documents provided by Global Carbon B.V. that relate directly to the GHG components of the project.

/1/ Project Design Document of JI project “Fuel switch at Slavyansk Salt-Mining Company LLC, Ukraine” version 1.0 dated 01/03/2012
/2/ Project Design Document of JI project “Fuel switch at Slavyansk Salt-Mining Company LLC, Ukraine” version 2.0 dated 24/04/2012
/3/ Project Design Document of JI project “Fuel switch at Slavyansk Salt-Mining Company LLC, Ukraine” version 3.0 dated 19/09/2012
/4/ Guidelines for Users of the Join Implementation Project Design Document Form, version 04, JISC
/5/ Joint Implementation Project Design Document Form, version 01
/6/ Glossary of JI terms version 03, JISC.
/7/ Guidance on Criteria for Baseline Setting and Monitoring, version 03, JISC.
/8/ “Tool for the demonstration and assessment of additionality” version 05.2.1

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

/1/ Permit # 1414100000-28 dated 09/04/2008 on stationary sources air pollution issued by Slavyansk Salt-Mining Company LLC. Valid for the period of 5 years from 09/04/2008 till 09/04/2013
/2/ Certificate # 11760 on labour protection knowledge testing issued to Olena Syrotina
/3/ Certificate dated 27/01/2012 on knowledge testing
/4/ Certificate dated on knowledge testing for 2010
/5/ Protocol # 5 dated 03/03/2011 on labour protection knowledge testing commission session
/6/ Statement dated 20/02/2010 on execution of works, Budenerho LLC
/7/ Protocol dated 20/02/2010 on commission session of testing the operational skills of DKVR 10-13 boilers overhauled for solid fuel (husk pellets) combustion
/8/ Protocol dated 20/02/2010 on labour protection knowledge testing commission session of steam boiler-house serviced by DKVR 10-13 boilers operating on solid fuel (pellets), Slavyansk Salt-Mining Company LLC
/9/ Instruction # 3 dated 16/04/2009 on labour protection for boiler-house personnel which service DKVR 10-13 boilers operating on solid fuel (pellets)

/10/ Job instruction for mechanic of control and measurement unit dated 2009
/11/ Job instruction for 5 category boiler operator of boiler-house (code 8162.2-15643)
/12/ Statement on environmental impact by rehabilitation of DKVR 10-13 boiler overhauled for solid fuel combustion at Slavyansk Salt-Mining Company LLC, published in Slavyansk city Vesti newspaper # 32(15036) dated 11/08/2011
/13/ Environmental Impact Assessment developed by "Ekotehnologiya" LLC in 2011. Intention statement.
/14/ Conclusions of the study # 14.-02.-11.-2845.09 dated 28/07/2009 on conformity of the project design to the regulations on labour protection and industrial safety of the *Mehapolis Ltd. Boiler-house (33 Sovremennaia st., Slavyansk city, Donetsk region) Technical Revamping* working project
/15/ Conclusions of the study # 14.-02.-13.-4942.11 dated 08/11/2011 on conformity of the project design to the regulations on labour protection and industrial safety of the *Water Economizer Installation for DKVR 10-13 Boilers, Fabrication # 1001, # 6787, # 1444* working project, Slavyansk Salt-Mining Company LLC
/16/ *Mehapolis Ltd. Boiler-house (33 Sovremennaia st., Slavyansk city, Donetsk region) Technical Revamping* working project dated 07/05/2009
/17/ Protocol # 4 dated 30/04/2009 of the technical meeting on issues of boiler DKVR 10-13 # 1, Slavyansk Salt-Mining Company LLC
/18/ Protocol # 5 dated 12/05/2009 of the technical meeting on issues of boiler DE-25-14 # 2 commissioning
/19/ Agreement # 1008/10-1 dated 10/08/2010 on goods (solid fuel) supply from JSC "Slavyanskoliya"
/20/ Agreement # 08/04-01 dated 04/08/2010 on goods (solid fuel) supply from Greenwood Ukraine LLC
/21/ Agreement # CVS12318 dated 19/11/2010 on goods (solid fuel) supply from Cargill CJSC
/22/ DSTU 7124:2009 Technical conditions. Pressed granulated sunflower husk
/23/ Certificate ТП # 47 dated 15/07/2011 on fuel being alternative issued by the “Bio Agro” LLC, valid till 15/07/2013
/24/ Commercial proposal on pressed granulated sunflower husk supply by the “Bio Agro” LLC
/25/ Protocol # UA 5534/2011/3/1 dated 15/09/2011 on products (pellets) testing. Ordered by “Agro-Tekhnopark” LLC
/26/ Office memorandum dated 27/09/2006 to the Slavyansk Salt-Mining Company LLC director, A. Skyba from the chief engineer A. Maliuta on considering the participation of the enterprise within the Kyoto protocol activity, i. e. JI project
/27/ Order # 1 dated 01/01/2008 on bringing into operation of repaired gas boiler DE-25-14 (index # 5), Slavyansk Salt-Mining Company

LLC
/28/ Order # 387 dated 08/11/2007 on repair of boiler DE-25-14 (index # 5), Slavyansk Salt-Mining Company LLC
/29/ Commissioning statement dated 30/09/2009 on steam boiler DE-25-14, Mehapolis Ltd.
/30/ Slavyansk Salt-Mining Company LLC boiler-house energy scheme
/31/ Commissioning statement dated 31/03/2010 on DKVR 10-13 boiler (index # 2, inventory # 1043008) overhauled for operation on biofuel
/32/ Commissioning statement dated 31/03/2010 on DKVR 10-13 boiler (index # 1, inventory # 1043007) overhauled for operation on biofuel
/33/ Commissioning statement dated 31/03/2010 on DKVR 10-13 boiler (index # 3, inventory # 1043009) overhauled for operation on biofuel
/34/ Order # 96 dated 02/04/2010 on water pipeline reconstruction
/35/ Order # 103 dated 08/04/2010 on salted condensate heat consumption for preheating of salt solution (technological decision design stage)
/36/ Order # 174 dated 08/07/2010 on salted condensate heat consumption for preheating of salt solution (stage of salt solution preheating tank plug-in to power from salted condensate)
/37/ Order # 332 dated 01/10/2011 on elaboration of vacuum evaporating systems (technological decision design stage)
/38/ Order # 76 dated 06/02/2012 on elaboration of vacuum evaporating systems (finishing stage of vacuum evaporating systems modernization)
/39/ Actual fuel consumption for production of specific goods and services for 2010 (Form 11-МТП)
/40/ Actual fuel consumption for production of specific goods and services for 2005 (Form 11-МТП)
/41/ Actual fuel consumption for production of specific goods and services for 2006 (Form 11-МТП)
/42/ Actual fuel consumption for production of specific goods and services for 2007 (Form 11-МТП)
/43/ Actual fuel consumption for production of specific goods and services for 2008 (Form 11-МТП)
/44/ Actual fuel consumption for production of specific goods and services for 2009 (Form 11-МТП)
/45/ Actual fuel consumption for production of specific goods and services for 2011 (Form 11-МТП)
/46/ Technical report on boiler-house operation results for 2007, Slavyansk Salt-Mining Company LLC
/47/ Technical report on boiler-house operation results for 2008, Slavyansk Salt-Mining Company LLC
/48/ Technical report on boiler-house operation results for 2009, Slavyansk Salt-Mining Company LLC

/49/ Technical report on boiler-house operation results for 2010, Slavyansk Salt-Mining Company LLC
/50/ *Mehapolis Ltd. Boiler-house (33 Sovremennaia st., Slavyansk city, Donetsk region) Technical Revamping* working project. Chapter 1. Explanatory note dated 2009
/51/ Record sheet АЧЦА 407251.001ФО on ultrasound gas meter Курс-01
/52/ Passport on gas flow-meter, fabrication # 5705. Last calibration date–19/06/2009
/53/ Passport on ultrasound gas meter Курс-01, fabrication # 1887. Last calibration date–15/12/2009
/54/ Passport on drier gas pressure meter type КСД-3, fabrication # 284200. Last calibration date–20/10/2010
/55/ Passport on drier gas pressure meter type КСД-3, fabrication # 289692. Last calibration date–10/09/2009
/56/ Passport on drier gas pressure meter type КСД-3, fabrication # 289692. Last state periodical calibration date–20/10/2010
/57/ Passport on drier gas pressure meter, fabrication # 162352. Last state periodical calibration date–20/10/2010
/58/ Billing statement # 35/30242000/1П dated 01/03/2012 on active energy consumption by Slavyansk Salt-Mining Company LLC
/59/ Photo–premise where biofuel (pellets) are stored, processed and prepared for consumption
/60/ Photo–system of solid biofuel feeding to the boilers
/61/ Photo–boiler, inventory # 1043007
/62/ Photo– boiler # 2 DE 25-14
/63/ Photo– boiler # 5 DE 25-14, inventory # 1364
/64/ Shift logbook on goods (salt) production monitoring
/65/ Photo–finished product warehouse
/66/ Photo–premise where finished product is packed
/67/ Administrative note # 812 dated 11/05/2012
/68/ Order # 125 on period of storage of monitoring documents dated 28/04/2012

Persons interviewed:

List persons interviewed during the determination or persons that contributed with other information that are not included in the documents listed above.

/1/ Anatoliy Skiba – Director of Slavyansk Salt-Mining Company LLC
/2/ Iurii Petruk - JI Consultant of Global Carbon B.V.
/3/ Vladislav Antipov - JI Consultant of Global Carbon B.V.

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APPENDIX A: DETERMINATION PROTOCOL

Table 1 Check list for determination, according JOINT IMPLEMENTATION DETERMINATION AND VERIFICATION MANUAL (Version 01)

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
General description of the project				
Title of the project				
-	Is the title of the project presented?	The title of the JI project is "Fuel switch at Slavyansk Salt-Mining Company LLC, Ukraine".	OK	OK
-	Is the sectoral scope to which the project pertains presented?	Sectoral scopes of the project, such as the sectoral scope (3) Energy demand and the sectoral scope (8) Mining/mineral production are provided in the PDD.	OK	OK
-	Is the current version number of the document presented?	The current version and date of the PDD are stated (e.g., the PDD version 1.0 dated 01/03/2012).	OK	OK
-	Is the date when the document was completed presented?	The current version and date of the PDD are stated.	OK	OK
Description of the project				
-	Is the purpose of the project included with a concise, summarizing explanation (max. 1-2 pages) of the: a) Situation existing prior to the starting date of the project;	The purpose of the project is to reduce of greenhouse gas emissions into the atmosphere by switching to the fuels that have lower greenhouse potential, and through implementation of energy-efficiency modernization activities.		OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	b) Baseline scenario; and c) Project scenario (expected outcome, including a technical description)?	Situation existing prior to the starting date of the project, baseline scenario, project scenario as well as historical details of the JI project implementation (including its JI component) are described in the PDD. The in formation does not exceed 2 pages. Corrective Action Request 02 (CAR02). Please, bring into conformity the name of the plant through the PDD. Clarification Request 01 (CL01). In some documented evidences Mehapolis Ltd. Boiler-house was mentioned by the address 33 Sovremennaia st., Slavyansk city, Donetsk region, Ukraine. The same address is indicated in Annex 1 of the PDD where the contact data of Slavyansk Salt-Mining Company LLC (one of the project participant of the JI project). Please, clarify the situation.	CAR02 CL01	OK OK
-	Is the history of the project (incl. its JI component) briefly summarized?	The history of the project including its JI component is briefly summarized. The main dates are provided in the document and justified by documented evidence.	OK	OK
Project participants				
-	Are project participants and Party(ies) involved in the project listed?	Project participants and Party(ies) involved in the project are listed. As for details, Slavyansk Salt-Mining Company LLC is the project participant of	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		the Host party (Ukraine), and Global Carbon B.V. is the project participant of the second Party (the Netherlands) involved in the JI project.		
-	Is the data of the project participants presented in tabular format?	In the PDD the data of the project participant is provided in tabular format.	OK	OK
-	Is contact information provided in Annex 1 of the PDD?	In Annex 1 of the PDD there is provided contact information on project participant of all Parties involved in the JI project.	OK	OK
-	Is it indicated, if it is the case, if the Party involved is a host Party?	Yes, Ukraine is indicated as a Host Party.	OK	OK
Technical description of the project				
Location of the project				
-	Host Party(ies)	Ukraine	OK	OK
-	Region/State/Province etc.	Donetsk Region	OK	OK
-	City/Town/Community etc.	Slavyansk	OK	OK
-	Detail of the physical location, including information allowing the unique identification of the project. (This section should not exceed one page)	The project is being implemented within Slavyansk Salt-Mining Company LLC located in the city of Slavyansk, Donetsk region, Ukraine. The site co-ordinates are: 37°40′34″ E and 48°50′54″ N.	OK	OK
Technologies to be employed, or measures, operations or actions to be implemented by the project				
-	Are the technology(ies) to be employed, or measures, operations or actions to be implemented by the project, including all relevant technical data and the implementation schedule	Project developer presented in the PDD description of technologies to be employed and measures implemented by the project, including all relevant technical data and the implementation schedule. For instance, technical details of salt		OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	described?	manufacturing process at Slavyansk Salt-Mining Company LLC are provided. Also, the PDD describes the project activity connected to the rehabilitation of old boiler DE 25-14 and installation of new boiler DE 25-14, reconstruction of boiler DKVR 10-13, the steam pipeline reconstruction, and the salt extraction facilities modernization. Corrective Action Request 03 (CAR03). During the site visit there was observed that three boilers type DKVR 10-13 and two boiler type DE 25-14 are operational at the Slavyansk Salt-Mining Company LLC boiler house. In section A.4.2 of the PDD one boiler type DE 25-14 is mentioned. Please, clarify and correct if it is necessary.	CAR03	OK
Brief explanation of how the anthropogenic emissions of greenhouse gases by sources are to be reduced by the proposed JI project, including why the emission reductions would not occur in the absence of the proposed project, taking into account national and/or sectoral policies and circumstances				
-	Is it stated how anthropogenic GHG emission reductions are to be achieved? (This section should not exceed one page)	As stated in the PDD, within the project activity the plant measures aimed at reduction of greenhouse gas emissions due to switching from fuel oil to natural gas and solid biomass which are less carbon-intensive fuels, reconstruction of the steam pipeline to decrease transmission losses of thermal energy, and modernization of salt-producing facilities to improve heat consumption	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		scheme. Concluding, the greenhouse gas emission reductions will be achieved by the project by decreasing fuel consumption and switching to less carbon-intensive fuels. This section did not exceed one page.		
-	Is it provided the estimation of emission reductions over the crediting period?	In section A.4.3.1 of the PDD the estimation of emission reductions over the crediting period is provided. The crediting period of regarded JI project is divided into two periods, such as the commitment period 2008-2012 and the period after the commitment period 2013-2019.	OK	OK
-	Is it provided the estimated annual reduction for the chosen credit period in tCO2e?	It is presented the estimation of annual reduction for chosen crediting period (2008-2019) in tonnes CO_2 equivalent.	OK	OK
-	Are the data from questions above presented in tabular format?	The data of estimated emission reductions over the crediting period provided in the tabular format in section A.4.3.1 of the PDD.	OK	OK
Estimated amount of emission reductions over the crediting period				
-	Is the length of the crediting period Indicated?	The length of the crediting period is indicated in years and months.	OK	OK
-	Are estimates of total as well as annual and average annual emission reductions in tonnes of CO2 equivalent provided?	All requested information provided in section A.4.3.1 of the PDD. Also, please, see section above in this protocol.	OK	OK
Project approvals by Parties				
19	Have the DFPs of all Parties listed as	Based on the JISC Glossary of JI terms, the	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	"Parties involved" in the PDD provided written project approvals?	procedure is as follows: a) At least the written project approval(s) by the host Party(ies) should be provided to the AIE and made available to the secretariat by the AIE when submitting the determination report regarding the PDD for publication in accordance with paragraph 34 of the JI guidelines; (b) At least one written project approval by a Party involved in the JI project, other than the host Party(ies), should be provided to the AIE and made available to the secretariat by the AIE when submitting the first verification report for publication in accordance with paragraph 38 of the JI guidelines, at the latest. So after finishing of the project determination report, the PDD and Determination Report will be presented to the State Environmental Agency of Ukraine for receiving the Letter of Approval.		
19	Does the PDD identify at least the host Party as a "Party involved"?	In the PDD is identified Ukraine as a Host Party.	OK	OK
19	Has the DFP of the host Party issued a written project approval?	Corrective Action Request 01 (CAR01). The project has no approval of the host Party. Please, provide the Letter of Approval. Clarification Request 02 (CL02). Please, clarify whether Letter of Endorsement is issued for the JI project "Fuel switch at Slavyansk Salt-Mining	CAR01 CL02	CAR01 is pending OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		Company LLC, Ukraine". If yes, please, provide the LoE to verification team.		
20	Are all the written project approvals by Parties involved unconditional?	Please, see section 19 of this protocol above.	OK	OK
Authorization of project participants by Parties involved				
21	Is each of the legal entities listed as project participants in the PDD authorized by a Party involved, which is also listed in the PDD, through: − A written project approval by a Party involved, explicitly indicating the name of the legal entity? or − Any other form of project participant authorization in writing, explicitly indicating the name of the legal entity?	After finishing of project determination report, the PDD with supporting documents and Determination Report will be presented to the State Environmental Agency of Ukraine for receiving the Letter of Approval that will authorized project participants. Also, see section 19 and section 20 of this protocol.	OK	OK
Baseline setting				
22	Does the PDD explicitly indicate which of the following approaches is used for identifying the baseline? − JI specific approach − Approved CDM methodology approach	In the PDD explicitly indicated that the JI specific approach is used for description and justification of the baseline.	OK	OK
JI specific approach only				
23	Does the PDD provide a detailed theoretical description in a complete	Project design document provides detailed description of six plausible future scenarios.	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	and transparent manner?	Considered information provided in section B.1 of the PDD.		
23	Does the PDD provide justification that the baseline is established: (a) By listing and describing plausible future scenarios on the basis of conservative assumptions and selecting the most plausible one? (b) Taking into account relevant national and/or sectoral policies and circumstance? − Are key factors that affect a baseline taken into account? (c) In a transparent manner with regard to the choice of approaches, assumptions, methodologies, parameters, date sources and key factors? (d) Taking into account of uncertainties and using conservative assumptions? (e) In such a way that ERUs cannot be earned for decreases in activity levels outside the project or due to force majeure? (f) By drawing on the list of standard variables contained in appendix B to	In the PDD six plausible future scenarios are described in a complete and transparent manner. Plausible future scenario #1 (i.e., continuation of the existing situation) is selected as the most plausible one and regarded as baseline. Furthermore, listing six plausible future scenarios are analysed taking into account key factors of national and/or sectoral policies and barriers that affect the implementation of the plausible future scenarios. Also, in section B.1 all baseline data and parameters are presented in a tabular format with detailed explanation of each ones as well as formula.	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	"Guidance on criteria for baseline setting and monitoring", as appropriate?			
24	If selected elements or combinations of approved CDM methodologies or methodological tools for baseline setting are used, are the selected elements or combinations together with the elements supplementary developed by the project participants in line with 23 above?	According to the project design documents, the approved CDM methodologies are not used for choice, justification and setting of the baseline. The latest version of "Guidance on Criteria for Baseline Setting and Monitoring" is applied for baseline assessment.	OK	OK
25	If a multi-project emission factor is used, does the PDD provide appropriate justification?	Carbon dioxide emission factor for fuel oil combustion is used.	OK	OK
Approved CDM methodology approach only				
26 (a)	Does the PDD provide the title, reference number and version of the approved CDM methodology used?	Not applicable because JI specific approach was selected for identifying the baseline.	N/A	N/A
26 (a)	Is the approved CDM methodology the most recent valid version when the PDD is submitted for publication? If not, is the methodology still within the grace period (was the methodology revised to a newer version in the past two months)?	Not applicable	N/A	N/A
26 (b)	Does the PDD provide a description of	Not applicable	N/A	N/A

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	why the approved CDM methodology is applicable to the project?			
26 (c)	Are all explanations, descriptions and analyses pertaining to the baseline in the PDD made in accordance with the referenced approved CDM methodology?	Not applicable	N/A	N/A
26 (d)	Is the baseline identified appropriately as a result?	Not applicable	N/A	N/A
Additionality				
JI specific approach only				
28	Does the PDD indicate which of the following approaches for demonstrating additionality is used? (a) Provision of traceable and transparent information showing the baseline was identified on the basis of conservative assumptions, that the project scenario is not part of the identified baseline scenario and that the project will lead to emission reductions or enhancements of removals; (b) Provision of traceable and transparent information that an AIE has already positively determined that a	According to the information provided in the PDD, JI specific approach is used for demonstrating additionality. Additionality proofs provided based on "Guidance on criteria for baseline setting and monitoring" (version 03) and the most recent version of the "Tool for the demonstration and assessment of additionality" approved by the CDM Executive Board. As indicated in the document, no approved CDM methodology is used for demonstration of additionality.	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	comparable project (to be) implemented under comparable circumstances has additionality; (c) Application of the most recent version of the "Tool for the demonstration and assessment of additionality. (allowing for a two-month grace period) or any other method for proving additionality approved by the CDM Executive Board".			
29 (a)	Does the PDD provide a justification of the applicability of the approach with a clear and transparent description?	Investment analysis is used in order to justify the JI project additionality.	OK	OK
29 (b)	Are additionality proofs provided?	Please, see section 28 and section 29 (a) above. Corrective Action Request 04 (CAR04). Please, pay your attention that in section B.2 the period 11 years and 10 months is mentioned. As a fact, the crediting period of the project is 12 years. Please, correct. Clarification Request 03 (CL03). Please, clarify why only two alternatives are considered during additionality proofs, when within the baseline setting six alternatives were described.	CAR04 CL03	OK OK
29 (c)	Is the additionality demonstrated appropriately as a result?	Additionality proofs are provided in section B.2 of the PDD, but there is necessity for additional improvements of the assessment.		OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		Corrective Action Request 05 (CAR05). PDD's page 15 first paragraph contains the following passage: "The market of such metal products as pipes and railway wheels is a transparent market where standardized types of products exist.", which seems irrelevant to the present project. Please remove.	CAR05	OK
		Corrective Action Request 06 (CAR06). The developer does not provide documentary justification why cost of equity is employed instead of WACC. Please, provide the documentary evidence that the present project has been completed without attraction of the debt capital. For example, it may be the balance sheet as of the end of 2010 confirming the absence of the bank loans.	CAR06	OK
		Corrective Action Request 07 (CAR07). Please, re-check whether tariffs, costs and investment values are indicated with VAT included or not. The electrical energy tariff seems to be indicated with VAT included. Please, note that the general approach is to make calculations using all input values (investment costs, tariffs and prices) with VAT excluded.	CAR07	OK
		Corrective Action Request 08 (CAR08). All investment costs are now concentrated in 2007	CAR08	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		only while it is evident from the PDD that expenses were more or less evenly distributed in the period of 2007-2010. Please, reflect exact historical distribution of the investment costs by years in the cash flow. Corrective Action Request 09 (CAR09). The liquidating value of the project assets is assumed to be 5% of the initial value. Taking into account previous remark and gradual commissioning of the equipment during 2008-2010, it seems underestimated. Please, recalculate liquidating value basing on remaining lifetime of each plant and equipment, i.e. new boiler DE-25-14, modernized elements of the boiler DKVR 10-13, reconstructed steam pipeline and heat energy recuperation equipment. Corrective Action Request 10 (CAR10). Please, recheck oil consumption figures for 2007 indicated in the cash flow. Taking into account that no new plant or equipment have been commissioned yet that year Revenues from oil saving should be equal to Expenses fuel oil consumption.	CAR09 CAR10	OK OK
30	If the approach 28 (c) is chosen, are all explanations, descriptions and analyses made in accordance with the selected tool or method?	Refer to section 28-29 above and to the Table 2 of this Determination protocol.	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
Approved CDM methodology approach only				
31 (a)	Does the PDD provide the title, reference number and version of the approved CDM methodology used?	Not applicable because JI specific approach was selected for identifying the baseline.	N/A	N/A
31 (b)	Does the PDD provide a description of why and how the referenced approved CDM methodology is applicable to the project?	Not applicable	N/A	N/A
31 (c)	Are all explanations, descriptions and analyses with regard to additionality made in accordance with the selected methodology?	Not applicable	N/A	N/A
31 (d)	Are additionality proofs provided?	Not applicable	N/A	N/A
31 (e)	Is the additionality demonstrated appropriately as a result?	Not applicable	N/A	N/A
Project boundary (applicable except for JI LULUCF projects				
JI specific approach only				
32 (a)	Does the project boundary defined in the PDD encompass all anthropogenic emissions by sources of GHGs that are: (i) Under the control of the project participants? (ii) Reasonably attributable to the project? (iii) Significant?	PDD describes project boundary of JI project. According to the description, fuel consumption in the production process and electricity consumption for biomass preparation and handling are the main sources of the emissions.	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
32 (b)	Is the project boundary defined on the basis of a case-by-case assessment with regard to the criteria referred to in 32 (a) above?	Please, see section 32 (a) above.	OK	OK
32 (c)	Are the delineation of the project boundary and the gases and sources included appropriately described and justified in the PDD by using a figure or flow chart as appropriate?	The project boundary and the gases and sources included are appropriately described and justified in the PDD by using a figure and flow chart (refer to the table 11 and the figure 3 and the figure 4 in the PDD). All details are provided in section B.3 of the PDD.	OK	OK
32 (d)	Are all gases and sources included explicitly stated, and the exclusions of any sources related to the baseline or the project are appropriately justified?	In section B.3 of the PDD all gases and sources included are explicitly stated; the information presented in the table 11.	OK	OK
Approved CDM methodology approach only				
33	Is the project boundary defined in accordance with the approved CDM methodology?	Not applicable because JI specific approach was selected for identifying the baseline.	N/A	N/A
Crediting period				
34 (a)	Does the PDD state the starting date of the project as the date on which the implementation or construction or real action of the project will begin or began?	The starting date of the project is 08/11/2007; the day when works on rehabilitation of natural gas-fired boiler DE 25-14 started. The document that confirms the mentioned date was provided during site visit.	OK	OK
34 (a)	Is the starting date after the beginning of 2000?	The JI project starts on 2007. Also, see section 34 (a) above.	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
34 (b)	Does the PDD state the expected operational lifetime of the project in years and months?	The expected operational lifetime provided in the PDD is 12 years and 0 months or 144 months (i.e., the period from 01/01/2008 to 31/12/2019).	OK	OK
34 (c)	Does the PDD state the length of the crediting period in years and months?	The length of the crediting period is stated in the PDD in years and months such as 12 years and 0 months or 144 months. The crediting period divided into two phases, such as: 1. 5 years or 60 months – the first commitment period (01/01/2008 – 31/12/2012); 2. 7 years or 84 months - period after the first commitment period (01/01/2013 – 31/12/2019).	OK	OK
34 (c)	Is the starting date of the crediting period on or after the date of the first emission reductions or enhancements of net removals generated by the project?	The starting date of the crediting period is on the date of the first emission reductions generated by the JI project.	OK	OK
34 (d)	Does the PDD state that the crediting period for issuance of ERUs starts only after the beginning of 2008 and does not extend beyond the operational lifetime of the project?	The commitment period starts after the beginning of 2008, i.e. 01/01/2008 – 31/12/2012. Moreover, the crediting period extends beyond 2012. It is the issue for approval by the Host Party. The period after the first commitment period is 01/01/2013 – 31/12/2019.	OK	OK
34 (d)	If the crediting period extends beyond 2012, does the PDD state that the	According to the project design document, the crediting period extends beyond 2012. It is the	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	extension is subject to the host Party approval? Are the estimates of emission reductions or enhancements of net removals presented separately for those until 2012 and those after 2012?	subject for approval by the Host Party. As a fact, the estimates of emission reductions are provided separately for two considered periods.		
Monitoring plan				
35	Does the PDD explicitly indicate which of the following approaches is used? − JI specific approach − Approved CDM methodology approach	In the PDD explicitly indicated that the JI specific approach is used for establishing the monitoring plan.	OK	OK
JI specific approach only				
36 (a)	Does the monitoring plan describe: − All relevant factors and key characteristics that will be monitored? − The period in which they will be monitored? − All decisive factors for the control and reporting of project performance?	According to the project design document, monitoring will be carried out during the crediting period of the JI project. The monitoring plan describes all relevant factors and key characteristics are to be monitored and their monitoring period. Some of parameters are to be monitored by measurement equipments, and some of data are defined in the national official documents.	OK	OK
36 (b)	Does the monitoring plan specify the indicators, constants and variables used that are reliable, valid and provide transparent picture of the emission	The monitoring plan specifies the constants and variables used. Based on the documented evidences, they are reliable, valid and provide transparent picture of the emission reductions	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	reductions or enhancements of net removals to be monitored?	calculation.		
36 (b)	If default values are used: − Are accuracy and reasonableness carefully balanced in their selection? − Do the default values originate from recognized sources? − Are the default values supported by statistical analyses providing reasonable confidence levels? − Are the default values presented in a transparent manner?	In the monitoring plan regarded constant value, i.e., Specific consumption of thermal energy for salt production in the baseline scenario. This value is estimated on the basis of historical monitoring data. All values used for calculation of default parameter were justified with initial documents (e.g., technical report of the plant and official statistic documents). The algorithm of estimation was provided in details in the PDD. Consequently, it is presented in a transparent manner. Corrective Action Request 11 (CAR11). According to the requirements of Guidance on criteria for baseline setting and monitoring and the State Environmental Investment Agency, the project participants are encouraged to use country specific values of carbon dioxide emission factors. Please, made amendments. Corrective Action Request 12 (CAR12). Please, regard the Net calorific value of fuel oil and natural gas parameters as monitoring ones in order to ensure accuracy of the calculations in the future. Clarification Request 04 (CL04). In the Excel spreadsheet NCV of biomass pellets is indicated. Please, clarify where it is used.	CAR11 CAR12 CL04	OK OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
36 (b) (i)	For those values that are to be provided by the project participants, does the monitoring plan clearly indicate how the values are to be selected and justified?	Yes, the monitoring values provided by the project participants are justified in a traceable and transparent manner. But some description of the parameter should be clarified and improved. See section 36 (b) of the Determination protocol above.	OK	OK
36 (b) (ii)	For other values, − Does the monitoring plan clearly indicate the precise references from which these values are taken? − Is the conservativeness of the values provided justified?	In the PDD indicated the list of values that are calculated by formula and using default values and data from the monitoring documented evidences (e.g., technical reports, logbook, and other national documents).	OK	OK
36 (b) (iii)	For all data sources, does the monitoring plan specify the procedures to be followed if expected data are unavailable?	Monitoring plan specifies the monitoring data cross-checking procedure to decrease uncertainty and to ensure accuracy. Corrective Action Request 13 (CAR13). Please, specify the procedures to be followed if expected monitoring data are unavailable.	CAR13	OK
36 (b) (iv)	Are International System Unit (SI units) used?	International System Units are used partly.	OK	OK
36 (b) (v)	Does the monitoring plan note any parameters, coefficients, variables, etc. that are used to calculate baseline emissions or net removals but are obtained through monitoring?	The monitoring plan notes one parameter is to be obtained through monitoring in order to calculate baseline emissions, such as Quantity of salt produced in the project scenario in year *y*.	OK	OK
36 (b) (v)	Is the use of parameters, coefficients, variables, etc. consistent between the	Yes. According to the information from the monitoring plan of JI project, the use of	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	baseline and monitoring plan?	parameters and variables are consistent between the baseline and monitoring plan.		
36 (c)	Does the monitoring plan draw on the list of standard variables contained in appendix B of "Guidance on criteria for baseline setting and monitoring"?	There are used monitoring values contained in appendix B of "Guidance on criteria for baseline setting and monitoring", i.e. PE_y, BEy, $EF_{CO2,Fuel\_oil}$, $EF_{CO2,NG}$, NCV_{Fuel_oil}, NCV_{NG}, $EF_{CO2,ELEC,y}$, etc.	OK	OK
36 (d)	Does the monitoring plan explicitly and clearly distinguish: (i) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), and that are available already at the stage of determination? (ii) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), but that are not already available at the stage of determination? (iii) Data and parameters that are monitored throughout the crediting period?	The monitoring plan explicitly and clearly distinguishes the classification of the parameters. Description in details is provided in section D.1 of the PDD.	OK	OK
36 (e)	Does the monitoring plan describe the	According to the monitoring plan, the methods		

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	methods employed for data monitoring (including its frequency) and recording?	employed for data monitoring and recording as well as its frequency are stated in section D of the PDD. Corrective Action Request 14 (CAR14). Please, bring into conformity the way of the monitoring of electricity consumption (pay your attention to the section D.1 and D.3 of the PDD).	CAR14	OK
36 (f)	Does the monitoring plan elaborate all algorithms and formulae used for the estimation/calculation of baseline emissions/removals and project emissions/removals or direct monitoring of emission reductions from the project, leakage, as appropriate?	Monitoring plan elaborates the formulae used for calculation and estimation of baseline emissions and project emissions due to the JI project implementation. As per project design document, no leakage occurs due to the JI project implementation. The assessment of the leakage is stated in section B of the PDD. As a result of assessment, there is concluded that the amount of the leakage is not significant and can be neglected.	OK	OK
36 (f) (i)	Is the underlying rationale for the algorithms/formulae explained?	Formulae from the monitoring plan are explained with the underlying rationale.	OK	OK
36 (f) (ii)	Are consistent variables, equation formats, subscripts etc. used?	All variables and subscripts are used in appropriate way. Corrective Action Request 15 (CAR15). Please, revise the index of the parameter P5 in table D.1.1.1 and bring it into conformity with the last one in the equation P-3.	CAR15	OK
36 (f) (iii)	Are all equations numbered?	In the PDD all presented formulae are numerated.	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
36 (f) (iv)	Are all variables, with units indicated defined?	Units are provided for each variable from the formulae.	OK	OK
36 (f) (v)	Is the conservativeness of the algorithms/procedures justified?	The conservativeness of procedures are justified.	OK	OK
36 (f) (v)	To the extent possible, are methods to quantitatively account for uncertainty in key parameters included?	The requested information is provided. Please, see table D.2 of the PDD.	OK	OK
36 (f) (vi)	Is consistency between the elaboration of the baseline scenario and the procedure for calculating the emissions or net removals of the baseline ensured?	There is consistency between the elaboration of the baseline scenario and the procedure for calculating the emissions of the baseline scenario.	OK	OK
36 (f) (vii)	Are any parts of the algorithms or formulae that are not self-evident explained?	Formulae are self-evident explained. Also, refer to the section 36 (f) of this determination protocol.	OK	OK
36 (f) (vii)	Is it justified that the procedure is consistent with standard technical procedures in the relevant sector?	The monitoring procedure is consistent with national regulation and UNFCCC requirements.	OK	OK
36 (f) (vii)	Are references provided as necessary?	The references to the normative documents in relevant sector are provided in the PDD.	OK	OK
36 (f) (vii)	Are implicit and explicit key assumptions explained in a transparent manner?	Please, refer to the section 36 (f) of this determination protocol.	OK	OK
36 (f) (vii)	Is it clearly stated which assumptions and procedures have significant uncertainty associated with them, and	In the project design document there is not stated any information about significant uncertainty level of assumptions and procedures.	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	how such uncertainty is to be addressed?			
36 (f) (vii)	Is the uncertainty of key parameters described and, where possible, is an uncertainty range at 95% confidence level for key parameters for the calculation of emission reductions or enhancements of net removals provided?	In the PDD project developer described the uncertainty level of key parameters. Uncertainty level of major concerned monitoring parameters was assessed as low. Measuring devices for monitoring of key parameters are calibrated/verified in compliance with the state regulation and in-plant standards in order to assure quality control of monitoring data.	OK	OK
36 (g)	Does the monitoring plan identify a national or international monitoring standard if such standard has to be and/or is applied to certain aspects of the project? Does the monitoring plan provide a reference as to where a detailed description of the standard can be found?	No national or international monitoring standard are used for the JI project implementation. Monitoring procedure developed in the frame of JI project design document will be followed during the project realization.	OK	OK
36 (h)	Does the monitoring plan document statistical techniques, if used for monitoring, and that they are used in a conservative manner?	As described in the PDD, the monitoring plan document statistical techniques are used in a conservative manner.	OK	OK
36 (i)	Does the monitoring plan present the quality assurance and control procedures for the monitoring process,	The information about the quality assurance and control procedures for the monitoring process, including, information on calibration and on how		OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	including, as appropriate, information on calibration and on how records on data and/or method validity and accuracy are kept and made available upon request?	records on data and/or method validity and accuracy are kept is presented in section D.2 and section D.3 of the PDD. Corrective Action Request 18 (CAR18). In order to ensure that the data monitored and required for verification are to be kept for two years after the last transfer of ERUs for the project a special documented instruction on monitoring data storage must be issued.	CAR18	OK
36 (j)	Does the monitoring plan clearly identify the responsibilities and the authority regarding the monitoring activities?	Monitoring plan identified the responsible departments regarding monitoring activities of the JI project. Please, see section D.3 of the PDD.	OK	OK
36 (k)	Does the monitoring plan, on the whole, reflect good monitoring practices appropriate to the project type? If it is a JI LULUCF project, is the good practice guidance developed by IPCC applied?	In general, the monitoring plan reflects that the project activity is not a common practice in Ukraine.	OK	OK
36 (l)	Does the monitoring plan provide, in tabular form, a complete compilation of the data that need to be collected for its application, including data that are measured or sampled and data that are collected from other sources but not	Presented in the PDD monitoring plan provides a complete compilation of the data that need to be collected for its application, including data that are measured or sampled and data that are collected from other sources. Data connected with project scenario are stated in table D.1 and D.1.1 of the	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	including data that are calculated with equations?	PDD and data of the baseline scenario are provided in table D.1 and D.1.3 of the PDD.		
36 (m)	Does the monitoring plan indicate that the data monitored and required for verification are to be kept for two years after the last transfer of ERUs for the project?	Refer to section 36 (i) above.	OK	OK
37	If selected elements or combinations of approved CDM methodologies or methodological tools are used for establishing the monitoring plan, are the selected elements or combination, together with elements supplementary developed by the project participants in line with 36 above?	The approved CDM baseline and monitoring methodologies are not used for consideration of this JI project monitoring plan. The JI specific approach is developed for establishing the monitoring plan.	OK	OK
Approved CDM methodology approach only				
38 (a)	Does the PDD provide the title, reference number and version of the approved CDM methodology used?	Not applicable because JI specific approach was selected.	N/A	N/A
38 (a)	Is the approved CDM methodology the most recent valid version when the PDD is submitted for publication? If not, is the methodology still within the grace period (was the methodology revised to a newer version in the past two months)?	Not applicable	N/A	N/A

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
38 (b)	Does the PDD provide a description of why the approved CDM methodology is applicable to the project?	Not applicable	N/A	N/A
38 (c)	Are all explanations, descriptions and analyses pertaining to monitoring in the PDD made in accordance with the referenced approved CDM methodology?	Not applicable	N/A	N/A
38 (d)	Is the monitoring plan established appropriately as a result?	Not applicable	N/A	N/A
Applicable to both JI specific approach and approved CDM methodology approach				
39	If the monitoring plan indicates overlapping monitoring periods during the crediting period: (a) Is the underlying project composed of clearly identifiable components for which emission reductions or enhancements of removals can be calculated independently? (b) Can monitoring be performed independently for each of these components (i.e. the data/parameters monitored for one component are not dependent on/effect data/parameters to be monitored for another component)? (c) Does the monitoring plan ensure	There is no overlapping monitoring periods during the crediting period. Thus, the section is not applicable.	N/A	N/A

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	that monitoring is performed for all components and that in these cases all the requirements of the JI guidelines and further guidance by the JISC regarding monitoring are met? (d) Does the monitoring plan explicitly provide for overlapping monitoring periods of clearly defined project components, justify its need and state how the conditions mentioned in (a)-(c) are met?			
Leakage				
JI specific approach only				
40 (a)	Does the PDD appropriately describe an assessment of the potential leakage of the project and appropriately explain which sources of leakage are to be calculated and which can be neglected?	As per project design document, no leakage occurs due to the JI project implementation. The assessment of the leakage is stated in section B of the PDD. As a result of assessment, there is concluded that the amount of the leakage is not significant and can be neglected.	OK	OK
40 (b)	Does the PDD provide a procedure for an ex ante estimate of leakage?	Not applicable. Please, see section 40 (a) above.	OK	OK
Approved CDM methodology approach only				
41	Are the leakage and the procedure for its estimation defined in accordance with the approved CDM methodology?	Not applicable because JI specific approach was selected.	N/A	N/A
Estimation of emission reductions or enhancements of net removals				

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
42	Does the PDD indicate which of the following approaches it chooses? (a) Assessment of emissions or net removals in the baseline scenario and in the project scenario (b) Direct assessment of emission reductions	The PDD clearly indicates that assessment of emissions in the baseline scenario and in the project scenario are chosen. Some of the baseline parameter is estimated on the basis of the historical monitoring data for the 2005-2007 period. The justification of the values was provided to the verification team during the site visit.	OK	OK
43	If the approach (a) in 42 is chosen, does the PDD provide ex ante estimates of: (a) Emissions or net removals for the project scenario (within the project boundary)? (b) Leakage, as applicable? (c) Emissions or net removals for the baseline scenario (within the project boundary)? (d) Emission reductions or enhancements of net removals adjusted by leakage?	There were estimated emissions of the project scenario within the project boundary, emissions of the baseline scenario within the project boundary, and emission reductions. All estimated values provided in the tabular format and is separated into two periods. According to the information from the PDD, leakage is negligible.	OK	OK
44	If the approach (b) in 42 is chosen, does the PDD provide ex ante estimates of: (a) Emission reductions or enhancements of net removals (within the project boundary)?	The approach (a) in 42 is chosen, so this section is not applicable.	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	(b) Leakage, as applicable? (c) Emission reductions or enhancements of net removals adjusted by leakage?			
45	For both approaches in 42 (a) Are the estimates in 43 or 44 given: (i) On a periodic basis? (ii) At least from the beginning until the end of the crediting period? (iii) On a source-by-source/sink-by-sink basis? (iv) For each GHG? (v) In tones of CO2 equivalent, using global warming potentials defined by decision 2/CP.3 or as subsequently revised in accordance with Article 5 of the Kyoto Protocol? (b) Are the formula used for calculating the estimates in 43 or 44 consistent throughout the PDD? (c) For calculating estimates in 43 or 44, are key factors influencing the baseline emissions or removals and the activity level of the project and the	The estimation of baseline emissions and project emissions, as well as emission reductions are made on a periodic basis. Namely, the emissions are assessed for the whole crediting period that divided into two periods: the first commitment period (2008-2012), and after the first commitment period (2013-2019). Calculations concern the CO_2 that is greenhouse gas. All values are provided in tones CO_2 equivalent. All formulae described in section D of the PDD are consistent throughout the project design document of JI project. In the considered JI project some factors (e.g., quantity of salt produced in the project scenario in year *y*) are taken into account that can influence to the baseline emissions and the activity level of the project and the emissions as well as risks associated with the project. The estimation of the values is based on conservative assumptions and the most plausible scenarios in a transparent manner. Moreover, all values are consistent throughout the PDD.	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	emissions or net removals as well as risks associated with the project taken into account, as appropriate? (d) Are data sources used for calculating the estimates in 43 or 44 clearly identified, reliable and transparent? (e) Are emission factors (including default emission factors) if used for calculating the estimates in 43 or 44 selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice? (f) Is the estimation in 43 or 44 based on conservative assumptions and the most plausible scenarios in a transparent manner? (g) Are the estimates in 43 or 44 consistent throughout the PDD? (h) Is the annual average of estimated emission reductions or enhancements of net removals calculated by dividing the total estimated emission reductions or enhancements of net removals over the crediting period by the total months of the crediting period and multiplying			

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	by twelve?			
46	If the calculation of the baseline emissions or net removals is to be performed ex post, does the PDD include an illustrative ex ante emissions or net removals calculation?	The calculation of the baseline emissions is performed ex post. The ex ante emissions calculation is performed using specific values of some parameters and presented in the PDD and supporting Excel spreadsheets.	OK	OK
Approved CDM methodology approach only				
47 (a)	Is the estimation of emission reductions or enhancements of net removals made in accordance with the approved CDM methodology?	Not applicable because JI specific approach was selected.	N/A	N/A
47 (b)	Is the estimation of emission reductions or enhancements of net removals presented in the PDD: − On a periodic basis? − At least from the beginning until the end of the crediting period? − On a source-by-source/sink-by-sink basis? − For each GHG? − In tones of CO2 equivalent, using global warming potentials defined by decision 2/CP.3 or as subsequently revised in accordance with Article 5 of the Kyoto Protocol?	Not applicable	N/A	N/A

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	− Are the formula used for calculating the estimates consistent throughout the PDD? − Are the estimates consistent throughout the PDD? − Is the annual average of estimated emission reductions or enhancements of net removals calculated by dividing the total estimated emission reductions or enhancements of net removals over the crediting period by the total months of the crediting period and multiplying by twelve?			
Environmental impacts				
48 (a)	Does the PDD list and attach documentation on the analysis of the environmental impacts of the project, including transboundary impacts, in accordance with procedures as determined by the host Party?	In the PDD there is described the environmental impact assessment of the project. It is performed in accordance with national procedure. The environmental documents are listed in section F of the PDD and some of them were provided during site visit (e.g., Environmental Impact Assessment). According to the assessment documents, the JI project does not lead to negative impacts on the environment. Corrective Action Request 16 (CAR16). Please, describe the transboundary impact due to the	CAR16	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		project activity if any occur. Corrective Action Request 17 (CAR17). Please, provide the Finding of the State Environmental Expertise with is referred to in section F of the PDD.	CAR17	OK
48 (b)	If the analysis in 48 (a) indicates that the environmental impacts are considered significant by the project participants or the host Party, does the PDD provide conclusion and all references to supporting documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party?	JI project activity does not lead to negative impacts on the environment. Refer to section F of the project design document and section 48 (a) above.	OK	OK
Stakeholder consultation				
49	If stakeholder consultation was undertaken in accordance with the procedure as required by the host Party, does the PDD provide: (a) A list of stakeholders from whom comments on the projects have been received, if any? (b) The nature of the comments? (c) A description on whether and how the comments have been addressed?	Within the Environmental Impact Assessment the Statement on environmental impact was published in Slavyansk city Vesti newspaper (i.e., Vesti newspaper # 32(15036) dated 11/08/2011) in order to inform the stakeholders and local community. No negative comments have been received from the local stakeholders.	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
Determination regarding small-scale projects (additional elements for assessment)				
Applicable to bundled JI SSC projects only				
Applicable to all JI SSC projects				
Determination regarding land use, land-use change and forestry projects (additional/alternative elements for assessment)				
Determination regarding programmes of activities (additional/alternative elements for assessment)				

Table 2 Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1	Summary of project participant response	Determination team conclusion
Corrective Action Request 01 (CAR01). The project has no approval of the host Party. Please, provide the Letter of Approval.	Table 1, 19	To obtain a written project approval (Letter of Approval) a final Determination Report should be submitted to the State Environmental Investment Agency of Ukraine. The Letter of Approval from the Host Party will be provider upon issuance.	The issue is pending and will be closed after the LoA issuance.

Corrective Action Request 02 (CAR02). Please, bring into conformity the name of the plant through the PDD.	Table 1	The name of Slavyansk Salt-Mining Company LLC has been put into conformity through the PDD. Please see PDD version 3.0 dated 19/09/2012.	The name of the plant was brought into conformity in the PDD. Issue is closed.
Corrective Action Request 03 (CAR03). During the site visit there was observed that three boilers type DKVR 10-13 and two boiler type DE 25-14 are operational at the Slavyansk Salt-Mining Company LLC boiler house. In section A.4.2 of the PDD one boiler type DE 25-14 is mentioned. Please, clarify and correct if it is necessary.	Table 1	After the project implementation, two boilers DE 25-14 and 3 boilers DKVR 10-13 are operational at the plant. The information concerning natural gas-fired boilers DE 25-14 has been updated. Please see Section A.4. of PDD version 3.0 dated 19/09/2012.	Amendments were checked and found satisfactory. So issue is closed.
Corrective Action Request 04 (CAR04). Please, pay your attention that in section B.2 the period 11 years and 10 months is mentioned. As a fact, the crediting period of the project is 12 years. Please, correct.	Table 1, 29 (b)	The period length has been corrected into 12 years. Please see Section B.2. of PDD version 3.0 dated 19/09/2012.	Information was corrected. Thus, issue is closed.

Corrective Action Request 05 (CAR05). PDD's page 15 first paragraph contains the following passage: "The market of such metal products as pipes and railway wheels is a transparent market where standardized types of products exist.", which seems irrelevant to the present project. Please remove.	Table 1, 29 (c)	The analysis of "Economic situation/growth and socio-demographic factors in the relevant sector as well as resulting predicted demand" has been revised and corrected. The passage "The market of such metal products as pipes and railway wheels is a transparent market where standardized types of products exist." Has been removed from the PDD. Please see Section B.1. of PDD version 3.0 dated 19/09/2012.	OK, Issue is closed.

Corrective Action Request 06 (CAR06). The developer does not provide documentary justification why cost of equity is employed instead of WACC. Please, provide the documentary evidence that the present project has been completed without attraction of the debt capital. For example, it may be the balance sheet as of the end of 2010 confirming the absence of the bank loans.	Table 1, 29 (c)	Response 1. The investment analysis has been amended. The discount rate applied has been changed from cost of equity to the weighted average cost of capital. As the benchmark is based on parameters that are standard in the market, and the information on typical debt/equity finance structure observed in the sector of the country is not readily available, 50% debt and 50% equity financing is assumed as a default. The cost of debt financing has been applied as the average integral lending rate in Ukraine in 2006. The updated investment analysis on the project has been provided to the AIE as Supporting document "SD1_Investment_analysis". Response 2. The corrected discount rate has been applied. The revised investment analysis on the project has been provided to the AIE.	Conclusion 1. Unfortunately the WACC calculated contains certain inconsistencies: Please note that not the cost of equity only but the WACC shall be adjusted for inflation rate in order to switch to real terms. The integral interest rate is not applicable in this particular case, because Euro zone inflation is applied for adjustment of the nominal terms. Thereby the interest rate for the loans in foreign currencies in Ukraine (usually denominated in USD and EUR) shall be applied. Correct real discount rate is ((16,46%+11,7%)/2+1)/(1+1,97 %)-1=11,72% Conclusion 2. Issue is closed.

Corrective Action Request 07 (CAR07). Please, re-check whether tariffs, costs and investment values are indicated with VAT included or not. The electrical energy tariff seems to be indicated with VAT included. Please, note that the general approach is to make calculations using all input values (investment costs, tariffs and prices) with VAT excluded.	Table 1, 29 (c)	All values included in the calculations of the investment analysis have been rechecked. The tariffs, costs and investment values have been amended where necessary to be indicated with VAT excluded. The investment analysis on the project has been provided to the AIE as Supporting document "SD1_Investment_analysis"	OK, Issue is closed.
Corrective Action Request 08 (CAR08). All investment costs are now concentrated in 2007 only while it is evident from the PDD that expenses were more or less evenly distributed in the period of 2007-2010. Please, reflect exact historical distribution of the investment costs by years in the cash flow.	Table 1, 29 (c)	The cash flow analysis has been amended. The exact historical distribution of the investment costs by years has been reflected in the CF analysis. The investment analysis on the project has been provided to the AIE as Supporting document "SD1_Investment_analysis".	OK, Issue is closed.

Corrective Action Request 09 (CAR09). The liquidating value of the project assets is assumed to be 5% of the initial value. Taking into account previous remark and gradual commissioning of the equipment during 2008-2010, it seems underestimated. Please, recalculate liquidating value basing on remaining lifetime of each plant and equipment, i.e. new boiler DE-25-14, modernized elements of the boiler DKVR 10-13, reconstructed steam pipeline and heat energy recuperation equipment.	Table 1, 29 (c)	The cash flow analysis has been amended. The liquidating value has been recalculated based on remaining lifetime of each plant and equipment. The investment analysis on the project has been provided to the AIE as Supporting document "SD1_Investment_analysis"	OK, Issue is closed.
Corrective Action Request 10 (CAR10). Please, recheck oil consumption figures for 2007 indicated in the cash flow. Taking into account that no new plant or equipment have been commissioned yet that year Revenues from oil saving should be equal to Expenses fuel oil consumption.	Table 1, 29 (c)	The cash flow analysis has been revised. The oil consumption figures for 2007 have been corrected. The investment analysis on the project has been provided to the AIE as Supporting document "SD1_Investment_analysis"	OK, Issue is closed.

Corrective Action Request 11 (CAR11). According to the requirements of Guidance on criteria for baseline setting and monitoring and the State Environmental Investment Agency, the project participants are encouraged to use country specific values of carbon dioxide emission factors. Please, made amendments.	Table 1, 36 (b)	The country specific values of carbon dioxide emission factors for natural gas and fuel oil have been applied. The amendments have been made in Sections B, D and Annex 2 of PDD version 3.0 dated 19/09/2012.	OK, Issue is closed.
Corrective Action Request 12 (CAR12). Please, regard the Net calorific value of fuel oil and natural gas parameters as monitoring ones in order to ensure accuracy of the calculations in the future.	Table 1, 36 (b)	The parameters representing Net calorific value of fuel oil and natural gas have been revised and made monitoring ones. Please see Section D of PDD version 3.0.	OK, issue is closed.
Corrective Action Request 13 (CAR13). Please, specify the procedures to be followed if expected monitoring data are unavailable.	Table 1, 36 (b) (iii)	The information concerning the procedures to be followed if expected monitoring data are unavailable has been presented in Section D.2. of PDD version 3.0 dated 19/09/2012.	The procedure for each parameter was stated in the PDD. Issue is closed.
Corrective Action Request 14 (CAR14). Please, bring into conformity the way of the monitoring of electricity consumption (pay your attention to the section D.1 and D.3 of the PDD).	Table 1, 36 (e)	The description of the energy department responsibilities have been revised and corrected. Please see Section D.3. of PDD version 3.0 dated 19/09/2012.	Based on corrections, issue is closed.

Corrective Action Request 15 (CAR15). Please, revise the index of the parameter P5 in table D.1.1.1 and bring it into conformity with the last one in the equation P-3.	Table 1, 36 (f) (ii)	The parameter P5 has been revised and put into conformity through all the PDD. Please see PDD version 3.0 dated 19/09/2012.	Issue is closed according to the amendments that were provided in the PDD version 3.0.

Corrective Action Request 16 (CAR16). Please, describe the transboundary impact due to the project activity if any occur.	Table 1, 48 (a)	The level of hazardous substance emissions into the surface air caused by the project has been thoroughly analyzed in course of EIA development. After taking probes and performing calculations of concentration of hazardous substances in the surface air within sanitary-protection zone of the plant (100 m) and zone of closest apartment block (500 m), it has been assessed that the level of hazardous substances does not exceed the maximal allowable level. Taking into account the above mentioned, distance to the closest border (the Russian border is about 150 km from the town of Slavyansk) and the fact that the project impact on water resources and soils is minimal, it is assumed that the project will not have any transboundary impacts. The explanation has been added to Section F.1. of PDD version 3.0 dated 19/09/2012.	Issue is closed.

Corrective Action Request 17 (CAR17). Please, provide the Finding of the State Environmental Expertise with is referred to in section F of the PDD.	Table 1, 48 (a)	The reference to the finding of the State Environmental Expertise has been mistaken. It has been removed from the PDD and the Section F.2. of the PDD has been revised and amended. Please see Section F.2. of PDD version 3.0 dated 19/09/2012.	Issue is closed due to clarification that was provided to the verification team and due to correction made in section F of the PDD.
Clarification Request 01 (CL01). In some documented evidences Mehapolis Ltd. Boiler-house was mentioned by the address 33 Sovremennaia st., Slavyansk city, Donetsk region, Ukraine. The same address is indicated in Annex 1 of the PDD where the contact data of Slavyansk Salt-Mining Company LLC (one of the project participant of the JI project). Please, clarify the situation.	Table 1	The company Mehapolis Ltd. and Slavyansk Salt-Mining Company LLC have the same owner, management board and address (33 Sovremennaia st., Slavyansk city, Donetsk region, Ukraine) and in general act as a consortium. One of the functions of Mehapolis Ltd. is to support Slavyansk Salt-Mining Company LLC activities. Thus the company Mehapolis Ltd. has been mentioned in some documents related to the project due to the fact that this company performed certain services for the Slavyansk Salt-Mining Company LLC within the project development.	Issue is closed based on the clarification.

Clarification Request 02 (CL02). Please, clarify whether Letter of Endorsement (LoE) is issued for the JI project "Fuel switch at Slavyansk Salt-Mining Company LLC, Ukraine". If yes, please, provide the LoE to verification team.	Table 1, 19	Response 1. The project is awaiting endorsement from Ukraine (the Host party). The Letter of Endorsement from the Host Party will be provider upon issuance. Response 2. The State Environmental Investment Agency of Ukraine issued the LoE (LoE # 2586/23/7 dated 14/09/2012). The LoE of the project was provided to the determination team.	Conclusion 1. The issue is pending and will be closed after the LoE issuance. Conclusion 2. Issue is closed.
Clarification Request 03 (CL03). Please, clarify why only two alternatives are considered during additionality proofs, when within the baseline setting six alternatives were described.	Table 1, 29 (b)	Six future scenarios were considered in order to establish a baseline. However four of them (Scenarios 3-6) were ruled out at the stage of *Sub step 2b. Barrier analysis* because they faced various economic and investment barriers and were unfavourable for implementation. Thus during additionality proofs two most plausible alternatives have been elaborated.	Issue is closed.

Clarification Request 04 (CL04). In the Excel spreadsheet NCV of biomass pellets is indicated. Please, clarify where it is used.	Table 1, 36 (b)	The NCV of pellets is not used in the project. It has been removed from the Excel spreadsheet. Please see Excel spreadsheet dated 24/04/2012.	Information was corrected. Issue is closed.
Corrective Action Request 18 (CAR18). In order to ensure that the data monitored and required for verification are to be kept for two years after the last transfer of ERUs for the project a special documented instruction on monitoring data storage must be issued.	Table 1, 36 (i)	The documented evidence has been prepared by the project participants. The Order on period of storage of monitoring documents was provided to verification team.	Issue is closed.