DETERMINATION REPORT
LITASCO SA

DETERMINATION OF THE

"GREENHOUSE GASES EMISSIONS REDUCTION DUE TO THE MODERNIZATION OF THE PRODUCTION FACILITIES OF ODESSA REFINERY"

REPORT NO. UKRAINE-DET/0583/2012

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DETERMINATION REPORT

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29/11/2012	Bureau Veritas Certification Holding SAS
Client:	**Client ref.:**
LITASCO SA	Sergey Chaplygin

Summary:

Bureau Veritas Certification has made the determination of the "Greenhouse gases emissions reduction due to the modernization of the production facilities of Odessa Refinery" project of LITASCO SA located in Odessa 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.:	Subject Group:
UKRAINE-DET/0583/2012	JI

Project title:
"Greenhouse gases emissions reduction due to the modernization of the production facilities of Odessa Refinery"

Work carried out by:
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Bureau Veritas Certification Holding SAS

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Indexing terms

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1 INTRODUCTION

LITASCO SA has commissioned Bureau Veritas Certification to determine its JI project "Greenhouse gases emissions reduction due to the modernization of the production facilities of Odessa Refinery" (hereafter called "the project") at the Odessa 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:

Rostislav Topchiy
Bureau Veritas Certification, Climate Change Lead Verifier

Vitaliy Minyaylo
Bureau Veritas Certification, Climate Change Verifier
Denis Pishchalov

Bureau Veritas Certification, Financial Specialist

This determination report was reviewed by:

Ivan Sokolov

Bureau Veritas Certification, 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 PJSC "LUKOIL-ODESSA REFINERY" 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, Approved CDM methodology and/or 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, PJSC "LUKOIL-ODESSA REFINERY" revised the PDD and resubmitted it on 28/11/2012.

The determination findings presented in this report relate to the project as described in the PDD version 2.0.

2.2 Follow-up Interviews

On 30/10/2012 Bureau Veritas Certification performed on-site interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of PJSC "LUKOIL-ODESSA REFINERY" and LLC "KT-Energy" were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
PJSC "LUKOIL-ODESSA REFINERY"	➢ Project history ➢ Project approach ➢ Project boundary ➢ Implementation schedule ➢ Organizational structure ➢ Responsibilities and authorities ➢ Training of personnel ➢ Quality management procedures and technology ➢ Rehabilitation/Implementation of equipment (records) ➢ Metering equipment control ➢ Metering record keeping system, database ➢ Technical documentation ➢ Monitoring plan and procedures ➢ Permits and licenses ➢ Local stakeholder's response.
CONSULTANT: LLC "KT-Energy"	➢ Baseline methodology ➢ Monitoring plan ➢ Additionality proofs ➢ Calculation of emission reduction.

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

Before project implementation Odessa Refinery operated outdated primary oil refining equipment, including furnaces for fuel combustion without implementation of any significant energy efficiency measures since 1979.

The baseline scenario of the project foresees continuation of previously existing practice with the operation of primary oil refining equipment consisting of atmospheric and vacuum distillation unit without implementation of modernization activity, including furnaces replacement.

Before project implementation the Odessa refinery operated outdated equipment including primary oil refining units resulted in higher organic fuel combustion amounts. Considering the additional revenues of the ERU sales project owner decided to implement the reconstruction of the AVD unit in 2002.

Project foresees modernization of the AVD unit at the Odessa refinery including reconstruction of its columns, vacuum and atmospheric parts, partial replacement of oil refining equipment and complete replacement of the furnaces where the fuel for primary oil refining is combusted.

Project implementation was started on the grounds of the necessity to optimize energy resources consumption at the Enterprise with the utilization of Kyoto Protocol flexible mechanisms..

The following activities will ensure energy resources saving:

- Replacement of furnaces of the AVD unit;
- Modernization activity at the atmospheric part of the AVD unit (atmospheric distillation unit);
- Modernization activity at the vacuum part of the AVD unit (vacuum distillation unit);
- installation of the new heat exchanger;
- The construction of the gasoline stabilization unit;
- Modernization activity at the furnaces equipment:
    - Replacement of the blow fan BDN9u by one with higher capacity;
    - Replacement of the six burners GP-1,7D by ones with higher capacity;
    - Replacement of the adapter and increasing of the height and diameter of the towel.
- Auxiliary blocks modernization:
    - Modernization of the unit of the amine treatment;
    - Replacement of submerged refrigerators by air-type ones;
    - Replacement of outdated and worn-out pumping equipment;
    - Installation of reflux tanks on blocks of preliminary evaporation and atmospheric part.

Within project boundaries project envisages modernization of the AVD unit at the Odessa Refinery through the implementation of energy saving measures and replacement of the furnaces, where the organic fuel is being combusted for the needs of primary oil refining. Realized activity will allow to reduce the specific fuel consumption for primary oil refining and to improve the efficiency of furnaces operation, and thus will lead to reduction of GHG emissions.

The identified areas of concern as to Description of the project, project participants response and BV Certification's conclusion are described in Appendix A Table 2 (refer to CL 01, CAR 01, CL 02, CAR 02, CAR 03).

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 14 Corrective Action Requests and 06 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)

The project has already received Letter of Endorsement № 3410/23/7 on the JI project “Greenhouse gases emissions reduction due to the modernization of the production facilities of Odessa Refinery” dated 13/11/2012 issued by State Environmental Investment Agency of Ukraine.

The Letter of Approval from Switzerland was issued by the designated focal point in Switzerland (The Federal Office for the Environment (FOEN)) №J294-0485 on 23/11/2012.

Bureau Veritas Certification received this letter from the project participants and does not doubt its authenticity.

As for the time being no written approvals of the project by Ukraine are available. After receiving Determination Report from the Accredited Independent Entity the project documentation will be submitted to the Ukrainian Designated Focal Point (DFP) which is State Environmental Investment Agency of Ukraine, for receiving a Letter of Approval.

Bureau Veritas Certification will check the letters against paragraphs 19 - 20 of the DVM.

As the project has no approval by the Ukraine, CAR 05 remains pending and will be closed after report finalizing (refer to the Appendix A).

4.2 Authorization of project participants by Parties involved (21)

The official authorization of each legal entity listed as project participant in the PDD by Parties involved will be provided in the written project approvals (refer to 4.1 above).

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 of the JI guidelines (hereinafter referred to as JI specific approach) was the selected approach for identifying the baseline.

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 previously existing practice without implementation of modernization activity at the AVD unit and its furnaces replacement;
- Introduction of modernization activity at the AVD unit and its furnaces replacement without being registered as joint implementation project;
- Continuation of previously existing practice without implementation of modernization activity at the AVD unit and its furnaces replacement – is the most plausible and realistic scenario without execution of joint implementation project and is considered as a baseline scenario.

(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 following key factors that affect a baseline are taken into account:
- All refineries in Ukraine were constructed decades ago and generally operate with obsolescent equipment at low refining margins and short of European standards for product quality. Main reason of a crisis in the oil-refining sector among others is the absence of modern oil refining capacities for output of products of improved standards.
- Energy strategy of Ukraine foresees development of the refinery industry through increasing of the depth of oil refining via construction of the new refining units (catalytic

cracking, hydrocracking and visbreaking etc). Modernization of the existing facilities of the primary oil refining is not considered in the Energy strategy of Ukraine.

- The continuation of the outdated equipment operation is a common practice for Ukrainian industry due to lack of financial resources and high cost of credit financing as well as high investment risks in the country. Most of the modernisation projects are being implemented with the additional economic incentives such as low cost international financing or using flexible mechanisms of Kyoto protocol and involving additional investments due to sale of emission reduction units.

All explanations, descriptions and analyses pertaining to the baseline in the PDD were found adequate and the baseline is identified appropriately.

4.4 Additionality (27-31)

Traceable and transparent information showing that 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 reductions of anthropogenic emissions by sources or enhancements of net anthropogenic removals by sinks of GHGs was provided.

The PDD provides a justification of the applicability of the approach with a clear and transparent description, as per item 4.3 above.

Additionality proofs are provided. Two alternative scenarios to the project activity were identified and proven to be in compliance with mandatory legislation and regulations taking into account the enforcement in the region and Ukraine.

Realistic and credible alternatives available to the project owner, that provide outputs comparable with the proposed joint implementation project activity are the following:

- continuation of previously existing practice without implementation of modernization activity at the AVD unit and its furnaces (Alternative 1);
- introduction of modernization activity at the AVD unit and its furnaces replacement without being registered as joint implementation project (Alternative 2).

Financial Analysis

Financial analysis was used to demonstrate that proposed project activity is not the most financially attractive. The benchmark analysis based on

IRR indicator was used to perform the analysis. The average interest rate for the loans in national currency as of the January 2003 was used as benchmark.

Financial analysis was performed assuming data available for the project owners at the time of making a decision about project realization, and also taking into consideration conservative assumptions about price increase rates.

The results of the financial analysis demonstrate that the project scenario is not the most financially attractive for the project owners.

Thus besides the financial barrier the project faces a number of technical barriers and operation risks. Only 6 refineries function in Ukraine. Their equipment and technological schemes are comparatively unique and experience of the modernization hardly could be applied at any other refinery. Besides the modernization of the AVD unit performed at the Odessa refinery is the only such case in Ukrainian refinery industry. Thus Enterprise faces technological barriers and technological risks of proper equipment operation (decrease of efficiency over time, need of additional technological improvements etc.). The proposed project improves energy efficiency of oil refining processes and the returns on investment depend on the oil refining volume. Thus, lower oil refining volumes will cause less attractive economic performance and using of Kyoto protocol flexible mechanisms allows minimizing this barrier.

Among other barriers that prevent the project realization are unstable oil prices. Odessa Refinery operates by tolling scheme and raw material – oil – is supplied from Russia. Ukraine refinery sector depends heavily on importing Russian crude oil, which covers some three quarters of Ukrainian demand. Such factors as the rise in the excise taxes, transportation costs, quotas introduction and other market changes significantly influence the profitability and feasibility of the development program implementation.

One more important barrier for the project implementation is market conditions consisting of the following:

- oil prices fluctuation caused by the world market conditions, fluctuation of the dollar exchange rate, changes in Russia export custom duties and political situations;
- changes in duties and other import charges by the oil purchase;
- availability of the crude oil for refining connected with transportation aspects;
- changes of the legislation concerning petroleum products standardisation etc.

Common practice analysis

The GHG emissions reduction as a result of modernization of the production facilities of the Odessa Refinery within the project implementation requires significant capital investment and could not be implemented without additional incentives such as, in particular, income from the sale of emission reduction units.

Analysis of current practice demonstrates that the continuation of the exploitation of morally and physically obsolete equipment is a common practice for the oil refining industry.

There are six oil refineries plants in Ukraine. All refineries were constructed decades ago and generally operate with obsolescent equipment at low refining margins and short of European standards for product quality. Main reason of a crisis in the oil-refining sector among others is the absence of modern oil refining capacities for output of products of improved standards.

Summing up, continuation of the outdated equipment operation at the Ukrainian refineries is caused by the following reasons:

- Modernization of the basic technological equipment of the refineries requires significant financial resources, which are often unavailable;
- Modernization measures at the refineries mainly foresee the measures allowing the release of a new type of fuels or improving the quality of existing products to comply with the relevant standards. In case of not compliance with the enforced standards refineries often stop functioning due to lack of resources for reconstruction.

Energy strategy of Ukraine foresees development of the refinery industry through increasing of the depth of oil refining via construction of the new refining units (catalytic cracking, hydrocracking and visbreaking etc). Modernization of the existing facilities of the primary oil refining are not considered in the Energy strategy of Ukraine.

Generally the continuation of the outdated equipment operation is a common practice for Ukrainian industry due to lack of financial resources and high cost of credit financing as well as high investment risks in the country. Most of the modernisation projects are being implemented with the additional economic incentives such as low cost international financing or using flexible mechanisms of Kyoto protocol and involving additional investments due to sale of emission reduction units. Namely, there are a number of joint implementation projects, which are being realized in Ukraine at the moment, having been triggered by carbon financing (the baseline scenario is the continuation of the previously

existed practice of using outdated equipment) in different sectors of the economy (thermal power stations reconstruction, energy efficiency improvements in sugar industry, energy efficiency improvements in metallurgical industry etc.).

Summing up, it could be concluded that it is common practice for Ukraine to continue exploitation of low efficient and energy intensive equipment.

Thus, based on financial analysis and common practice analysis it could be concluded that the project is additional and greenhouse emission reductions would not have been occurred in the absence of joint implementation activity.

Additionality 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 Table 2 (refer to CAR 06, CAR 07).

4.5 Project boundary (32-33)

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 fossil fuels consumption for primary oil refining at the AVD unit;

(ii) Reasonably attributable to the project such as Emissions due to organic fuel (refinery gas, residual fuel oil) combustion for primary oil refining at the AVD unit; 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.

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 or construction or real action of the project began, and the starting date is 17/04/2003, which is after the beginning of 2000.

The PDD states the expected operational lifetime of the project in years and months, which is 20 years (240 months).

The PDD states the length of the crediting period in years and months, which is 13 years or 156 months and its starting date as 01/01/2008, which is on the date the first emission reductions are generated by the project.

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.

The identified areas of concern as to Crediting period, project participants response and BV Certification's conclusion are described in Appendix A Table 2 (refer to CL 03).

4.7 Monitoring plan (35-39)

The PDD, in its monitoring plan section, explicitly indicates that JI specific approach was the selected.

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 statistics data; quality control (QC) and quality assurance (QA) procedures, schemes of monitoring system and data collection for Monitoring Report, responsibilities for data management the operational and management structure that will be applied in implementing the monitoring plan.

The monitoring plan specifies the indicators, constants and variables that are reliable (i.e. provide consistent and accurate values), valid (i.e. are clearly connected with the effect to be measured), and that provide a transparent picture of the emission reductions to be monitored such as oil refining at the AVD unit, share of refinery gas in the total fuel consumption by the furnaces of the AVD unit, share of residual fuel oil in the total fuel consumption by the furnaces of the AVD unit, greenhouse gases emission factor for combustion of refinery gas, greenhouse gases emission factor for combustion of residual fuel oil, carbon oxidation factor for combustion of refinery gas, carbon oxidation factor for combustion of residual fuel oil, amount of refinery gas that was combusted in the

furnaces of the AVD unit, amount of residual fuel oil that was combusted in the furnaces of the AVD unit, net caloric value of refinery gas combusted in the furnaces of the AVD unit, net caloric value of residual fuel oil combusted in the furnaces of the AVD unit.

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), but that are already available at the stage of determination, such as baseline specific indicator of fuel consumption for oil refining at the AVD unit.

(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, which are absent.

(iii) Data and parameters that are monitored throughout the crediting period, such as oil refining at the AVD unit, share of refinery gas in the total fuel consumption by the furnaces of the AVD unit, share of residual fuel oil in the total fuel consumption by the furnaces of the AVD unit, greenhouse gases emission factor for combustion of refinery gas, greenhouse gases emission factor for combustion of residual fuel oil, carbon oxidation factor for combustion of refinery gas, carbon oxidation factor for combustion of residual fuel oil, amount of refinery gas that was combusted in the furnaces of the AVD unit, amount of residual fuel oil that was combusted in the furnaces of the AVD unit, net caloric value of refinery gas combusted in the furnaces of the AVD unit, net caloric value of residual fuel oil combusted in the furnaces of the AVD unit.

The monitoring plan describes the methods employed for data monitoring (including its frequency) and recording, such as direct measurement with diaphragm and basis weight gauges; calculations with different recording frequency such as daily, monthly or yearly and electronic or paper recording method.

The monitoring plan elaborates 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.

Baseline emissions

Baseline greenhouse gases emissions are connected with organic fuel consumption for primary oil refining at the AVD unit.

$$BE_y = SFC_{BSL} \times P_y \times \sum_i (Sh_{i,y} \times EF_{CO2,i,y} \times OXID_{i,y}),$$

where:

BE_y – baseline greenhouse gases emissions in year y due to organic fuel combustion at the AVD unit, tonnes CO_2e;
SFC_{BSL} – baseline specific indicator of fuel consumption for oil refining at the AVD unit, GJ/tonne. The parameter was estimated ex-ante based on the data of the fuel consumption and oil refining during four years before the implementation of the modernization measures at AVD unit;
P_y – oil refining at the AVD unit in year y, tonnes. Oil refining volumes are considered to be equal in project and baseline scenarios and will be monitored during the crediting period to calculate emission reduction units;
$Sh_{i,y}$ – share of fuel type i (refinery gas, residual fuel oil) in the total fuel consumption by the furnaces of the AVD unit in the year y. Shares of fuel are considered equal in the project and baseline scenarios and are to be monitored during the crediting period to calculate emission reduction units. Activities concerning AVD unit modernization do not affect the ratio of different fuels combustion;
$EF_{CO2,i,y}$ – greenhouse gases emission factors for combustion of fuel type i (refinery gas, residual fuel oil), that was combusted in the furnaces of the AVD unit, tonnes CO_2e/ GJ;
$OXID_{i,y}$ – carbon oxidation factor for combustion of fuel type i (refinery gas, residual fuel oil) in year y.

Project emissions

Project greenhouse gases emissions are connected with organic fuel consumption for primary oil refining at the AVD unit.

$$PEy = \sum_i (FC_{i,y} \times NCV_{i,y} \times EF_{CO2,i,y} \times OXID_{i,y})$$

where:
PE_y – project greenhouse gases emissions in year y due to organic fuel combustion at the AVD unit, tonnes CO_2e.
$FC_{i,y}$ – amount of the organic fuel of the type i (refinery gas, residual fuel oil) that was combusted during year y in the furnaces of the AVD unit, tonnes;:

$NCV_{i,y}$ – net caloric value of the fuel of the type i (refinery gas, residual fuel oil) that was combusted during year y in the furnaces of the AVD unit, GJ/tonne;:
$EF_{CO2,i,y}$ – greenhouse gases emission factors for combustion of fuel type i (refinery gas, residual fuel oil), that was combusted in the furnaces of the AVD unit, tonnes CO_2e/ GJ;
$OXID_{i,y}$ – carbon oxidation factor for combustion of fuel type i (refinery gas, residual fuel oil) in year y.

Emission reductions

Emission reductions for the project are estimated as the difference between baseline and project emissions:

$$ER_y = BE_y – PE_y$$

where:
ERy - Emission reductions in the reported year, tonnes CO_2e.
BEy - Baseline greenhouse gases emissions in year y due to organic fuel combustion at the AVD unit, tonnes CO_2e
PEy - Project greenhouse gases emissions in year y due to organic fuel combustion at the AVD unit, tonnes CO_2e

The monitoring plan presents the quality assurance and control procedures for the monitoring process which are described in the section D.2 of the PDD. This includes, as appropriate, information on calibration and on how records on data and/or method validity and accuracy are kept and made available on request.

The monitoring plan clearly identifies the responsibilities and the authority regarding the monitoring activities. Responsibilities for data management are presented in section D.2.

On the whole, the monitoring plan reflects good monitoring practices appropriate to the project type.

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 or sampled and data that are collected from other sources (e.g. official statistics, expert judgment, proprietary data, IPCC, commercial and scientific literature 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 Table 2 (refer to CAR 08, CAR 09, CAR 10, CL 04).

4.8 Leakage (40-41)

No leakage is expected during the project activity.

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 project.

The PDD provides the ex ante estimates of:

(a) Emissions for the project scenario (within the project boundary), which are 219176 tonnes of CO_2eq for 2008-2012 and 584472 tonnes of CO_2eq for 2013-2020;

(b) No leakage is expected.

(c) Emissions for the baseline scenario (within the project boundary), which are 333848 tonnes of CO_2eq for 2008-2012 and 890264 tonnes of CO_2eq for 2013-2020.

(d) Emission reductions adjusted by leakage, which are 114672 tonnes of CO_2eq for 2008-2012 and 305792 tonnes of CO_2eq for 2013-2020.

The estimates referred to above are given:

(a) On a annual basis;

(b) From 01/01/2008 to 31/12/2020, covering the whole crediting period;

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

(d) For each GHG gas, which are CO_2

(e) In tonnes of CO_2 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 formulas used for calculating the estimates referred above are the same as those used for project monitoring and described in the section 4.7 above. All formulas are consistent throughout the PDD.

For calculating the estimates referred to above, key factors, e.g. fuel and equipment prices and availability, expected market development, etc. influencing the baseline emissions or removals 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 statistic data, actual historical monitored data, IPCC etc. are clearly identified, reliable and transparent.

Emission factors, such as greenhouse gases emission factor for combustion of refinery gas, greenhouse gases emission factor for combustion of residual fuel oil 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 identified areas of concern as to Estimation of emission reductions or enhancements of net removals, project participants response and BV Certification's conclusion are described in Appendix A Table 2 (refer to CAR 11, CAR 12, CAR 13).

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 Law of Ukraine 'On atmospheric air protection', Sanitary Regulations and Norms 4946-89 'Sanitary regulations on atmospheric air protection', ISO 9001:2008 "Quality management system" and ISO 14001:2004 "Environmental management system" etc.

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, if the analysis referred to above indicates that the environmental impacts are considered significant by the project participants or 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 Table 2 (refer to CAR 14, CL 05).

4.11 Stakeholder consultation (49)

No stakeholder consultation process for the JI projects is required by the Host Party. Stakeholders' comments will be collected during the time of this PDD publication during the determination procedure.

Positive conclusion of the state environmental expertise of the detailed design of the project of the AVD reconstruction has been approved by the State environmental administration in Odessa region on 22/05/2007.

The identified areas of concern as to Stakeholder consultation, project participants response and BV Certification's conclusion are described in Appendix A Table 2 (refer to CL 06).

4.12 Determination regarding small scale projects (50-57)

The PDD appropriately specifies and justifies the SSC project type and category that fall under:

(a) Type II and thresholds b of JI SSC projects as defined in "Provisions for joint implementation small-scale projects" developed by the JISC.

(b) Categories H defined in the most recent version of appendix B of annex II to decision 4/CMP.1.

The SSC PDD confirms and shows that the proposed JI SSC project is not a debundled component of a large project by explaining that there is no a JI (SSC) project with a publicly available determination in accordance with paragraph 34 of the JI guidelines:

(a) Which has the same project participants; and

(b) Which applies the same technology/measure and pertains to the same project category; and

(c) Whose determination has been made publicly available in accordance with paragraph 34 of the JI guidelines within the previous 2 years; and

(d) Whose project boundary is within 1 km of the project boundary of the proposed JI SSC project at the closest point.

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 "Greenhouse gases emissions reduction due to the modernization of the production facilities of Odessa Refinery" project in the Odessa Region, 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/s used the JI specific approach for demonstration of the additionality. In line with approach, 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 two pending issues 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 and the authorization by the host Party are awarded, it is our opinion that the project as described in the Project Design Document, Version 2.0 meets all the relevant UNFCCC requirements for the determination stage and the relevant host Party criteria.

The review of the project design documentation (2.0) 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 project participants and that relate directly to the GHG components of the project.

/1/ PDD "Greenhouse gases emissions reduction due to the modernization of the production facilities of Odessa Refinery", version 1.1 dated 12/10/2012.

/2/ PDD "Greenhouse gases emissions reduction due to the modernization of the production facilities of Odessa Refinery", version 2.0 dated 28/11/2012.

/3/ Guidelines for Users of the Join Implementation Project Design Document Form, version 04, JISC

/4/ Joint Implementation Project Design Document Form, version 01

/5/ Glossary of JI terms, version 03, JISC.

/6/ Guidance on Criteria for Baseline Setting and Monitoring, version 03, JISC.

/7/ JISC "Clarification regarding the public availability of documents under the verification procedure under the Joint Implementation Supervisory Committee." Version 03.

/8/ Joint Implementation Determination and Verification Manual. Version 01.

/9/ Letter of Endorsement № 3410/23/7 on the JI project "Greenhouse gases emissions reduction due to the modernization of the production facilities of Odessa Refinery" dated 13/11/2012 issued by State Environmental Investment Agency of Ukraine.

/10/ The Letter of Approval №J294-0485 on the JI project "Greenhouse gases emissions reduction due to the modernization of the production facilities of Odessa Refinery" dated 23/11/2012 issued by the designated focal point in Switzerland (The Federal Office for the Environment).

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

#	Name of document
1.	Order №511 dated 18/10/2010 «About shutdown of CDU-AVD unit»
2.	Conclusion of the reconstruction project of CDU-AVD unit №1815/03-06-09 dated 22/05/2007. State Environmental Protection Administration in Odessa region
3.	Permission №51401002 on pollutants emissions into the atmosphere by stationary sources (12/12/2005-31/12/2007)
4.	Permission №5110137600-153 on pollutants emissions into the atmosphere by stationary sources (24/06/2009-24/06/2014)

5.	Permission №5110137600-153 on pollutants emissions into the atmosphere by stationary sources (01/08/2012-24/06/2014)
6.	Report on air protection f rm 2-TP «air» in 2008
7.	Report on air protection form 2-TP «air» in 2009
8.	Report on air protection form 2-TP «air» in 2010
9.	Report on air protection form 2-TP «air» in 2011
10.	Project. Reconstruction of the CDU-AVD unit. Impact Assessment (EIA). Volume 8. Ltd. «Ecotechnika» Odessa. 2006
11.	Working draft. Revamping of the CDU-AVD unit. Volume 1.1.
12.	Act readiness object to exploitation №1304 of 20/11/2009. Revamping o the CDU-AVD unit
13.	Act of working commission about acceptance of completed construction projects «Revamping AVD. Replacing furnace P-2 by a new P-102» dated 25/02/2004
14.	Act of working commission about acceptance of completed construction projects «Revamping AVD. Replacing furnace P-1 by a new P-101/1.2» dated 18/03/2005
15.	Technological regulations of CDU-AVD unit. TR 00152282.006:2007. JSC "Ukrneftehimproekt." 2007
16.	Changing №1 dated 14/02/2008 to Technological regulations of CDU-AVD unit. TR 00152282.006:2007
17.	Changing №2 dated 23/02/2009 to Technological regulations of CDU-AVD unit. TR 00152282.006:2007
18.	Changing №3 dated 05/02/2010 to Technological regulations of CDU-AVD unit. TR 00152282.006:2007
19.	Changing №4 dated 25.03. to Technological regulations of CDU-AVD unit. TR 00152282.006:2007
20.	Schedule of stops repairs of technological unit in 2012
21.	Schedule of stops repairs of technological unit in 2011
22.	Schedule of stops repairs of technological unit in 2010
23.	Schedule of stops repairs of technological unit in 2009
24.	Schedule of stops repairs of technological unit in 2007
25.	Statement of AVD unit after overhaul into operation dated 23/01/2012
26.	Statement of AVD unit in overhaul dated 30/12/2011
27.	Statement of AVD unit after overhaul into operation dated 29/04/2011
28.	Statement of AVD in the maintenance dated 15/12/2010
29.	Statement of AVD unit after overhaul into operation dated 05/03/2010
30.	Statement of AVD unit in overhaul dated 01/02/2010
31.	Statement of AVD after stopping repair into operation dated 19/02/2009
32.	Statement of AVD in overhaul dated 03/05/2009
33.	Statement of AVD TC №1 after a repair operation dated 08/10/2007
34.	Statement of AVT shop №1 in the overhaul of 21/03/2007
35.	Protocol №39 meeting of the advisory council of OJSC "LUKOIL-ODESSA REFINERY"

36.	Reference. Work of AVD for 2008-2010
37.	Reference. Analysis of the use of reagents for 2008-2010
38.	The regime list of CDU-AVD unit workshop №1
39.	Working training program for a course vocational and technical training of workers with professional technical unit operator 3rd category
40.	Working training program for a course vocational and technical training of workers with professional technical unit operator 4th category
41.	Working training program for a course vocational and technical training of workers with professional technical unit operator 5th category
42.	Working training program for a course vocational and technical training of workers with professional technical unit operator 6 th category
43.	Certificate TU №182 Dmitro Zhyk - operator
44.	Certificate TU №1127 Pavlo Dema - operator
45.	Certificate TU №191 Vladimir Marutik - operator
46.	Certificate (04/10/2010-03/10/2013). Testing center of PJSC «LUKOIL-ODESSA REFINERY»
47.	Product testing logbook
48.	Quality passport №1404 dated 06/11/2008.
49.	Quality passport №1120 dated 29/09/2008.
50.	Quality passport №166 dated 03/05/2008.
51.	Quality passport №1543 dated 02/09/2009.
52.	Quality passport №576 dated 22/04/2009.
53.	Quality passport №294 dated 11/03/2009.
54.	Quality passport №2090 dated 20.10.2010. Fuel oil 100 Bottom ash sour paraffin
55.	Quality passport №1387 dated 11/08/2010.
56.	Quality passport №195 dated 28/01/2010.
57.	STP SMK-7.1-28-2012. Technical and economic Planning
58.	STP ISM-14-2012. Management of energy resources
59.	Report on internal audit dated 14/03/2012. ISO 9001
60.	Order №73 dated 20/02/2012. On preparation of the surveillance audits of management systems
61.	Report on the second surveillance audit of industrial safety, occupational health and the environment management system dated 28/05/2009. BVC
62.	Report on the re-certification audit of quality management system dated 21/04/2012. BVC
63.	Certificate ISO 9001:2008
64.	Certificate ISO 14001:2004
65.	License series AB №482382 Ministry of Education and Science of Ukraine. Providing educational services to schools associated with obtaining professional education (27/02/2007-27/02/2012)
66.	Plan for training and retraining workers in 2008
67.	Plan for training and retraining workers in 2009
68.	Plan for training and retraining workers in 2010

69.	Order №130 dated 23/03/2007. About the training
70.	Order №252 dated 25/04/2008. About the training
71.	Order №450 dated 17/08/2009. About the training
72.	Order №374 dated 13/07/2009. About the training
73.	Order №155 dated 19/03/2009. About the training
74.	Order №269 dated 03/06/2010. About the training
75.	Order №293 dated 14/06/2010. About the training
76.	Protocol №225 dated 13/10/2010 Qualification Commission meeting
77.	Protocol №215 dated 21/07/2010 Qualification Commission meeting
78.	Protocol №209 dated 02/06/2010 Qualification Commission meeting
79.	Protocol № 202 dated 09/12/2009 Qualification Commission meeting
80.	Protocol № 187 dated 17/07/2009 Qualification Commission meeting
81.	Protocol № 162 dated 10/12/2008 Qualification Commission meeting
82.	Protocol № 161 dated 19/11/2008 Qualification Commission meeting
83.	Protocol № 107 dated 12/09/2007 Qualification Commission meeting
84.	Certificate of assignment of working skills PK №199/08/2 Chuiko O.M. - operator of the 6th digit
85.	Certificate of assignment of working skills PK №102/08/1 Dzhybidzhiy V.I. - operator of the 5th category
86.	Certificate of assignment of working skills PK №194/08/3 Grechaniy V.V. - operator of the 6th category
87.	Verification certificate №24-1-1/5 valid until January 2015. Flow-meter BASIS in the primary flow transducer F200 №14183810, secondary transformer 2700R №3805029
88.	Verification certificate №24-1-1/7 valid until January 2015. Flow-meter BASIS in the primary flow transducer F200 №14177201, secondary transformer 2700R №3805031
89.	Verification certificate №264-ФХ valid until 02/02/2013. Chromatograph «CVET-800» №177
90.	Verification certificate №263-ФХ valid until 02/02/2013. Calorimetric system «C 2000 basic» №01.756942
91.	Passport. Rosemount №7865291. FIR 304
92.	Passport. 1151DP4S №7981270. FIR 4303
93.	Passport. 1151DP4S №7981271. FIR 4313
94.	Passport. 1151DP5 №8320594. FQIR 3501
95.	Attestation certificate (18/02/2010-17/02/2013). Calibration metrology laboratory LLC «LUKOIL Technology servicies Ukraine»
96.	Reference to determine the density, heat of combustion and component gases from oil dated 27/01/2010
97.	Reference to determine the density, heat of combustion and the composition of refining gases dated 14/05/2010
98.	Reference to determine the density, heat of combustion and the composition of refining gases dated 20/08/2010
99.	Report on the use of conditional and natural fuel for January 2010
100.	Cumulative statement on the motion of liquid fuel for January 2010

101.	Balance of refining gas for January 2010
102.	Report on the use of conditional and natural fuel for February 2010
103.	Cumulative statement on the motion of liquid fuel for February 2010
104.	Report on the use of conditional and natural fuel for March 2010
105.	Report on the use of conditional and natural fuel for April 2010
106.	Cumulative statement on the motion of liquid fuel for April 2010
107.	Balance of refining gas for April 2010
108.	Report on the use of conditional and natural fuel for May 2010
109.	Cumulative statement on the motion of liquid fuel for May 2010
110.	Balance of refining gas for May 2010
111.	Report on the use of conditional and natural fuel for June 2010
112.	Cumulative statement on the motion of liquid fuel for June 2010
113.	Balance of refining gas for June 2010
114.	Report on the use of conditional and natural fuel for July 2010
115.	Cumulative statement on the motion of liquid fuel for July 2010
116.	Balance of refining gas for July 2010
117.	Report on the use of conditional and natural fuel for August 2010
118.	Cumulative statement on the motion of liquid fuel for August 2010
119.	Balance of refining gas for August 2010
120.	Report on the use of conditional and natural fuel for September 2010
121.	Cumulative statement on the motion of liquid fuel for September 2010
122.	Balance of refining gas for September 2010
123.	Report on the use of conditional and natural fuel for October 2010
124.	Cumulative statement on the motion of liquid fuel for October 2010
125.	Balance of refining gas for October 2010
126.	Reference to determine the density, heat of combustion and the composition of refining gases dated 18.03.2009
127.	Reference to determine the density, heat of combustion and the composition of refining gases dated 30.06.2009
128.	Reference to determine the density, heat of combustion and the composition of refining gases dated 23.09.2009
129.	Reference to determine the density, heat of combustion and the composition of refining gases dated 23.12.2009
130.	Report on the use of conditional and natural fuel for January 2009
131.	Cumulative statement on the motion of liquid fuel for January 2009
132.	Balance of refining gas for January 2009
133.	Report on the use of conditional and natural fuel for March 2009
134.	Cumulative statement on the motion of liquid fuel for March 2009
135.	Balance of refining gas for March 2009
136.	Report on the use of conditional and natural fuel for April 2009
137.	Cumulative statement on the motion of liquid fuel for April 2009
138.	Balance of refining gas for April 2009
139.	Report on the use of conditional and natural fuel for May 2009
140.	Cumulative statement on the motion of liquid fuel for May 2009
141.	Balance of refining gas for May 2009

142.	Report on the use of conditional and natural fuel for June 2009
143.	Cumulative statement on the motion of liquid fuel for June 2009
144.	Balance of refining gas for June 2009
145.	Report on the use of conditional and natural fuel for July 2009
146.	Cumulative statement on the motion of liquid fuel for July 2009
147.	Balance of refining gas for July 2009
148.	Report on the use of conditional and natural fuel for August 2009
149.	Cumulative statement on the motion of liquid fuel for August 2009
150.	Balance of refining gas for August 2009
151.	Report on the use of conditional and natural fuel for September 2009
152.	Cumulative statement on the motion of liquid fuel for September 2009
153.	Balance of refining gas for September 2009
154.	Report on the use of conditional and natural fuel for October 2009
155.	Cumulative statement on the motion of liquid fuel for October 2009
156.	Balance of refining gas for October 2009
157.	Report on the use of conditional and natural fuel for November 2009
158.	Cumulative statement on the motion of liquid fuel for November 2009
159.	Balance of refining gas for November 2009
160.	Report on the use of conditional and natural fuel for December 2009
161.	Cumulative statement on the motion of liquid fuel for December 2009
162.	Balance of refining gas for December 2009
163.	Reference to determine the density, heat of combustion and the composition of refining gases dated 18.06.2008
164.	Reference to determine the density, heat of combustion and the composition of refining gases dated 19.09.2008
165.	Reference to determine the density, heat of combustion and the composition of refining gases dated 21.12.2008
166.	Report on the use of conditional and natural fuel for March 2008
167.	Cumulative statement on the motion of liquid fuel for March 2008
168.	Balance of refining gas for March 2008
169.	Report on the use of conditional and natural fuel for April 2008
170.	Cumulative statement on the motion of liquid fuel for April 2008
171.	Balance of refining gas for April 2008
172.	Report on the use of conditional and natural fuel for May 2008
173.	Cumulative statement on the motion of liquid fuel for May 2008
174.	Balance of refining gas for May 2008
175.	Report on the use of conditional and natural fuel for June 2008
176.	Cumulative statement on the motion of liquid fuel for June 2008
177.	Balance of refining gas for June 2008
178.	Report on the use of conditional and natural fuel for July 2008
179.	Cumulative statement on the motion of liquid fuel for July 2008
180.	Balance of refining gas for July 2008
181.	Report on the use of conditional and natural fuel for August 2008
182.	Cumulative statement on the motion of liquid fuel for August 2008
183.	Balance of refining gas for August 2008

184.	Report on the use of conditional and natural fuel for September 2008
185.	Cumulative statement on the motion of liquid fuel for September 2008
186.	Balance of refining gas for September 2008
187.	Report on the use of conditional and natural fuel for October 2008
188.	Cumulative statement on the motion of liquid fuel for October 2008
189.	Balance of refining gas for October 2008
190.	Report on the use of conditional and natural fuel for November 2008
191.	Cumulative statement on the motion of liquid fuel for November 2008
192.	Balance of refining gas for November 2008
193.	Report on the use of conditional and natural fuel for December 2008
194.	Cumulative statement on the motion of liquid fuel for December 2008
195.	Balance of refining gas for December 2008
196.	Photo. Diaphragm of measurement of oil refining FQIR 3501
197.	Photo. Diaphragm of measurement consumption of refining gas FQIR 4313
198.	Photo. Diaphragm of measurement consumption of refining gas FQIR 4303
199.	Photo. Diaphragm of measurement consumption of refining gas FQIR 304
200.	Photo. Basis weight gauge for measuring of residual fuel oil consumption FQIR 4321/1
201.	Photo. Basis weight gauge for measuring of residual fuel oil consumption FQIR 4321/2
202.	Order on monitoring of emission reductions № 576 dated 28/11/2012

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. Bliznichenko S.K. - Chief Engineer of PJSC "LUKOIL-ODESSA REFINERY"
2. Slobodyan S.B. – Deputy of Chief Engineer on Industrial Safety, Occupational Safety and Ecology of PJSC "LUKOIL-ODESSA REFINERY"
3. Dyhnilkin M.V. - Chief Power Engineer of PJSC "LUKOIL-ODESSA REFINERY"
4. Bazhenov S.M. – Deputy of Chief Metrologist of PJSC "LUKOIL-ODESSA REFINERY"
5. Stolyarov U.G. - Head of Production and Dispatch Department of PJSC "LUKOIL-ODESSA REFINERY"
6. Savischenko S.I. - Chief Mechanic of PJSC "LUKOIL-ODESSA REFINERY"
7. Pesotsky A.N. - Chief Technologist of PJSC "LUKOIL-ODESSA REFINERY"
8. Vostrikov A.M. – Chief of Department of Capital Construction of PJSC "LUKOIL-ODESSA REFINERY"
9. Schultz O.V. – Head of Department of the expenditure's planning and production economy of PJSC "LUKOIL-ODESSA REFINERY"
10. Ardintseva A.V. – Head of Central Plant's Laboratory of PJSC "LUKOIL-ODESSA REFINERY"
11. Klyuchnik O.G. - Head of Department of scientific research of PJSC "LUKOIL-ODESSA REFINERY"
12. Ermolenko A.U. - Head of the Training Center of PJSC "LUKOIL-ODESSA REFINERY"
13. Zayarsky V.M. - Engineer on Environmental Protection of PJSC "LUKOIL-ODESSA REFINERY"
14. Kundryk M.T. – Chief specialist LLC "KT-Energy"

APPENDIX A: DETERMINATION PROTOCOL

BUREAU VERITAS CERTIFICATION HOLDING SAS

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 project is: "Greenhouse gases emissions reduction due to the modernization of the production facilities of Odessa Refinery"	OK	OK
-	Is the sectoral scope to which the project pertains presented?	Sectoral scope 5. Chemical industry. **CL 01.** Explain why the project behaves to the Sectoral scope - Manufacturing industry?	CL 01	OK
-	Is the current version number of the document presented?	The current version number of the document is presented. See section A.1.	OK	OK
-	Is the date when the document was completed presented?	The date of completeness of the current version of the project design document is indicated in the PDD section A.1.	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; b) Baseline scenario; and c) Project scenario (expected outcome,	Before project implementation Odessa Refinery operated outdated primary oil refining equipment, including furnaces for fuel combustion without implementation of any significant energy efficiency measures since 1979. The baseline scenario of the project foresees continuation of previously existing practice with the operation of primary oil		

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	including a technical description)?	refining equipment consisting of atmospheric and vacuum distillation unit without implementation of modernization activity, including furnaces replacement. Project foresees modernization of the AVD unit at the Odessa refinery including reconstruction of its columns, vacuum and atmospheric parts, partial replacement of oil refining equipment and complete replacement of the furnaces where the fuel for primary oil refining is combusted. Project implementation was started on the grounds of the necessity to optimize energy resources consumption at the Enterprise with the utilization of Kyoto Protocol flexible mechanisms. **CAR 01.** Please, describe in more detail the project scenario - the technology and history of the project in section A.2, but no more than 2 pages. **CL 02.** Please provide documents to prove that the unit did not work in 2011-2012.	CAR 01 CL 02	OK OK
-	Is the history of the project (incl. its JI component) briefly summarized?	The history of the project (incl. its JI component) is briefly summarized.	OK	OK
Project participants				
-	Are project participants and Party(ies) involved in the project listed?	Project participant and parties involved are listed in the Table in section A.3. of the PDD.	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
-	Is the data of the project participants presented in tabular format?	The data of the project participants are presented in due tabular format.	OK	OK
-	Is contact information provided in Annex 1 of the PDD?	Contact information is provided in Annex 1 of the PDD. **CAR 02.** Please, provide a table of information about the second participant of the project in accordance with the JI PDD Form for Small-Scale Projects Version 01.1. **CAR 03.** Please, provide a Content page in accordance with the JI PDD Form for Small-Scale Projects Version 01.1	CAR 02 CAR 03	OK OK
-	Is it indicated, if it is the case, if the Party involved is a host Party?	Ukraine is indicated as Host Party.	OK	OK
Technical description of the project				
Location of the project				
-	Host Party(ies)	Ukraine	OK	OK
-	Region/State/Province etc.	Odessa region	OK	OK
-	City/Town/Community etc.	Odessa	OK	OK
-	Detail of the physical location, including information allowing the unique identification of the project. (This section should not exceed one page)	The geographical coordinates of the project site are the following: 46°30' N, 30°41' E. **CAR 04.** Please, place a section A 4.1.4 on one page.	CAR 04	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 described?	PDD Section A.4.3 provides some relevant technical data of main equipment installed and actions to be implemented by the project as well as the project implementation schedule.	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
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)	Anthropogenic emissions of greenhouse gases will be reduced due to decreasing of the organic fuel (refinery gas, residual fuel oil) consumption at the AVD unit of the Odessa refinery.	OK	OK
-	Is it provided the estimation of emission reductions over the crediting period?	The estimation of emission reductions over the crediting period is provided.	OK	OK
-	Is it provided the estimated annual reduction for the chosen credit period in tCO2e?	The estimated annual reduction for the chosen credit period is provided in tonnes CO_2e.	OK	OK
-	Are the data from questions above presented in tabular format?	The data from questions above are presented in tabular format. Refer to Tables in section A.4.4.1.	OK	OK
Estimated amount of emission reductions over the crediting period				
-	Is the length of the crediting period Indicated?	The length of crediting period is indicated in the PDD section A.4.3.1.	OK	OK
-	Are estimates of total as well as annual and average annual emission reductions in tonnes of CO2 equivalent provided?	Total as well as annual and average annual emission reductions in tonnes of CO_2 equivalent are provided in accordance with the calculated values in the spreadsheet provided to the verifier.	OK	OK
Project approvals by Parties				
19	Have the DFPs of all Parties listed as “Parties involved” in the PDD provided written project approvals?	**CAR 05.** The project has no letter of approval from Ukraine.	CAR 05	Pending
19	Does the PDD identify at least the host Party as a “Party involved”?	Host Party involved is the Ukraine.	OK	OK
19	Has the DFP of the host Party issued a written	According to the adopted procedure, the LoAs by Parties	Pending	Pending

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	project approval?	involved will be issued after the project determination.		
20	Are all the written project approvals by Parties involved unconditional?	According to the adopted procedure, the LoAs by Parties involved will be issued after the project determination.	Pending	Pending
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?	Party involved 1: Ukraine (host Party), legal entities are PJSC "LUKOIL-ODESSA REFINERY" Party involved 2: Switzerland, legal entity LITASCO SA See CAR 05.	Pending	Pending
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	The baseline scenario has been established in accordance with Appendix B of the JI Guidelines and in accordance with the Guidance on Criteria for Baseline Setting and Monitoring by the JISC. The Guidance on Criteria for Baseline Setting and Monitoring established by the JISC states: 'The baseline for a JI project is the scenario that reasonably represents the anthropogenic emissions by sources or anthropogenic removals by sinks of GHGs that would occur in the absence of the proposed project.' Taking into account guidelines mentioned above project participants established the baseline using JI specific	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		approach by identifying and listing possible alternatives on the basis of conservative assumptions and identifying the most plausible one.		
JI specific approach only				
23	Does the PDD provide a detailed theoretical description in a complete and transparent manner?	The theoretical description is provided in the PDD.	OK	OK
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 “Guidance on criteria for baseline setting and monitoring”, as appropriate?	The PDD provides justification that the baseline is established by listing and describing plausible future scenarios on the basis of conservative assumption and selecting the most plausible one.	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
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?	N/A	N/A	N/A
25	If a multi-project emission factor is used, does the PDD provide appropriate justification?	N/A	N/A	N/A
Approved CDM methodology approach only				
26 (a)	Does the PDD provide the title, reference number and version of the approved CDM methodology used?	N/A	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)?	N/A	N/A	N/A
26 (b)	Does the PDD provide a description of why the approved CDM methodology is applicable to the project?	N/A	N/A	N/A
26 (c)	Are all explanations, descriptions and analyses pertaining to the baseline in the PDD made in accordance with the referenced approved CDM methodology?	N/A	N/A	N/A
26 (d)	Is the baseline identified appropriately as a result?	N/A	N/A	N/A
Additionality				
JI specific approach only				
28	Does the PDD indicate which of the following	The PDD section B.2 includes analysis of project		

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	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 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".	additionality and is intended to demonstrate that the project scenario is not part of the identified baseline scenario and that the project will lead to reductions of GHG emissions in comparison to the baseline. **CAR 06.** Please recalculate IRR/NPV for sensitivity scenarios and correct the PDD pages 18-19 accordingly. **CAR 07.** As a result of rounding figures by year, incorrect amount of «total» in Table. B.2.1-1. Please make the appropriate changes.	CAR 06 CAR 07	OK OK
29 (a)	Does the PDD provide a justification of the applicability of the approach with a clear and transparent description?	See section 22 of this table.	OK	OK
29 (b)	Are additionality proofs provided?	To demonstrate of additionality applied: - Investment analysis; - Common practice analysis. The mentioned approach of JI leads to the conclusion that the project activity is additional.	OK	OK
29 (c)	Is the additionality demonstrated appropriately	Yes, the additionality demonstrated appropriately as a result.	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	as a result?			
30	If the approach 28 (c) is chosen, are all explanations, descriptions and analyses made in accordance with the selected tool or method?	Yes. See section B.2 of the PDD.	OK	OK
Approved CDM methodology approach only				
31 (a)	Does the PDD provide the title, reference number and version of the approved CDM methodology used?	N/A	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?	N/A	N/A	N/A
31 (c)	Are all explanations, descriptions and analyses with regard to additionality made in accordance with the selected methodology?	N/A	N/A	N/A
31 (d)	Are additionality proofs provided?	N/A	N/A	N/A
31 (e)	Is the additionality demonstrated appropriately as a result?	N/A	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?	The project's spatial boundaries are defined in the PDD. See section B.3.	OK	OK
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?	See section 32 (a) of this table.	OK	OK
32 (c)	Are the delineation of the project boundary and	The delineation of the project boundary and the gases and	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	the gases and sources included appropriately described and justified in the PDD by using a figure or flow chart as appropriate?	sources included described in the PDD by using figure.		
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?	All gases and sources included are explicitly stated; refer to 32 (a) above. All exclusions made are appropriate as a conservative or logic assumption.	OK	OK
Approved CDM methodology approach only				
33	Is the project boundary defined in accordance with the approved CDM methodology?	N/A	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 PDD states 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, and the starting date is 17/04/2003. **CL 03.** Please, explain why the total duration of the project - 20 years until 2027, but crediting period was selected until 2020.	CL 03	OK
34 (a)	Is the starting date after the beginning of 2000?	Refer to 34 (a).	OK	OK
34 (b)	Does the PDD state the expected operational lifetime of the project in years and months?	Operational lifetime is defined as 20 years (240 months).	OK	OK
34 (c)	Does the PDD state the length of the crediting period in years and months?	PDD state the length of the crediting period in years and months.	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?	Yes. The starting date of the crediting period is after the date of the first emission reductions.	OK	OK
34 (d)	Does the PDD state that the crediting period for issuance of ERUs starts only after the	Yes. According to the PDD the crediting period for issuance of ERUs does not extend beyond operational lifetime of the	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	beginning of 2008 and does not extend beyond the operational lifetime of the project?	project.		
34 (d)	If the crediting period extends beyond 2012, does the PDD state that the 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?	The estimated emission reductions are provided in the table of the PDD section A.4.3.1.	OK	OK
Monitoring plan				
35	Does the PDD explicitly indicate which of the following approaches is used? − JI specific approach − Approved CDM methodology approach	It is explicitly indicated that a JI specific approach is chosen.	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?	The monitoring plan describes: data to be monitored: oil refining at the AVD unit, share of refinery gas in the total fuel consumption by the furnaces of the AVD unit, share of residual fuel oil in the total fuel consumption by the furnaces of the AVD unit, greenhouse gases emission factor for combustion of refinery gas, greenhouse gases emission factor for combustion of residual fuel oil, carbon oxidation factor for combustion of refinery gas, carbon oxidation factor for combustion of residual fuel oil, amount of refinery gas that was combusted in the furnaces of the AVD unit, amount of residual fuel oil that was combusted in the furnaces of the AVD unit, net caloric value of refinery gas combusted in the furnaces of the AVD unit, net caloric value of residual fuel oil combusted in the furnaces of the AVD unit. the period in which they will be monitored: daily, monthly or	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		yearly; all decisive factors for the control and reporting of project performance: statistics forms; quality control (QC) and quality assurance (QA) procedures; the operational and management structure that will be applied in implementing the monitoring plan.		
36 (b)	Does the monitoring plan specify the indicators, constants and variables used that are reliable, valid and provide transparent picture of the emission reductions or enhancements of net removals to be monitored?	The monitoring plan specifies variables used. It provides transparent picture of the emission reductions.	OK	OK
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?	Constants used are the default values of the parameters as carbon emission factor of each fuel. The default values originate from recognized sources and are presented in a transparent manner.	OK	OK
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?	The monitoring plan indicates how the values are to be selected and justified.	OK	OK
36 (b) (ii)	For other values, − Does the monitoring plan clearly indicate the precise references from which these values are taken?	The monitoring plan indicate the precise references from which these values are taken. The conservativeness of the values is justified.		

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	− Is the conservativeness of the values provided justified?	**CAR 08.** Please make the changes about СТП forms in section D.1.	CAR 08	OK
36 (b) (iii)	For all data sources, does the monitoring plan specify the procedures to be followed if expected data are unavailable?	See section D of the PDD.	OK	OK
36 (b) (iv)	Are International System Unit (SI units) used?	SI units are used. Also there are data units used in accordance with the applied JI specific approach.	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?	See section D.1 of the PDD.	OK	OK
36 (b) (v)	Is the use of parameters, coefficients, variables, etc. consistent between the baseline and monitoring plan?	There is consistency between parameters, coefficients, variables, etc. used in baseline and monitoring plan.	OK	OK
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”?	The monitoring plan draws on the list of standard variables contained in appendix B of “Guidance on criteria for baseline setting and monitoring”.	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?	The data and parameters that are monitored throughout the crediting period are clearly indicated in the PDD (section D.1.).	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	(iii) Data and parameters that are monitored throughout the crediting period?			
36 (e)	Does the monitoring plan describe the methods employed for data monitoring (including its frequency) and recording?	In the table of the PDD in the section D.1. the time of monitoring (frequency) and the source of data to be used are indicated for all the monitored parameters and data.	OK	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?	All algorithms and formulae used for the estimation of baseline and project emissions are indicated and explained in the PDD.	OK	OK
36 (f) (i)	Is the underlying rationale for the algorithms/formulae explained?	The underlying rationale for the algorithms/formulae is explained.	OK	OK
36 (f) (ii)	Are consistent variables, equation formats, subscripts etc. used?	Consistent variables, equation formats, subscripts etc. are used.	OK	OK
36 (f) (iii)	Are all equations numbered?	Yes.	OK	OK
36 (f) (iv)	Are all variables, with units indicated defined?	Yes.	OK	OK
36 (f) (v)	Is the conservativeness of the algorithms/procedures justified?	The conservativeness of the algorithms/procedure is indicated in the PDD.	OK	OK
36 (f) (v)	To the extent possible, are methods to quantitatively account for uncertainty in key parameters included?	Uncertainty level of data is indicated in the table of Quality control and quality assurance (QA) procedures undertaken for the data monitored (see section D.3 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 on the baseline scenario and calculating the baseline emission in the monitoring plan and on spreadsheet.	OK	OK
36 (f) (vii)	Are any parts of the algorithms or formulae that are not self-evident explained?	The formulae used in the PDD are sufficiently described.	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
36 (f) (vii)	Is it justified that the procedure is consistent with standard technical procedures in the relevant sector?	Relevant national and/or sectoral policies and circumstances are taken into account in the project.	OK	OK
36 (f) (vii)	Are references provided as necessary?	**CAR 09.** Please provide exact references to sources of data on the parameters in section B.1 and D.2. **CAR 10.** Please, correct the information about the version of the environmental management system standard in Section D.3.	CAR 09 CAR 10	OK OK
36 (f) (vii)	Are implicit and explicit key assumptions explained in a transparent manner?	All key assumptions are explained in a transparent manner if needed.	OK	OK
36 (f) (vii)	Is it clearly stated which assumptions and procedures have significant uncertainty associated with them, and how such uncertainty is to be addressed?	See section 36 (f) (v) of this table.	OK	OK
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?	See section 36 (f) (v) of this table.	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?	Relevant national and/or sectoral policies and circumstances are taken into account while developing the monitoring plan for this project.	OK	OK
36 (h)	Does the monitoring plan document statistical techniques, if used for monitoring, and that they are used in a conservative manner?	See section D of the PDD.	OK	OK
36 (i)	Does the monitoring plan present the quality	Uncertainty level of data is indicated in the table of Quality	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	assurance and control procedures for the monitoring process, 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?	control and quality assurance (QA) procedures undertaken for the data monitored. Information on calibration procedures were checked during site-visit and found satisfactory.		
36 (j)	Does the monitoring plan clearly identify the responsibilities and the authority regarding the monitoring activities?	The monitoring plan clearly identifies the responsibilities and the authority regarding the monitoring activities. Responsibilities for data management are presented in section D.2.	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?	Monitoring techniques are in line with current operation routines at the enterprise.	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 including data that are calculated with equations?	Yes. See section D of PDD	OK	OK
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?	**CL 04.** Please provide document which confirms that the data monitored and required for verification are to be kept for two years after the last transfer of ERUs for the project.	CL 04	OK
37	If selected elements or combinations of approved CDM methodologies or	See section D of the PDD.	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	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?			
Approved CDM methodology approach only				
38 (a)	Does the PDD provide the title, reference number and version of the approved CDM methodology used?	N/A	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)?	N/A	N/A	N/A
38 (b)	Does the PDD provide a description of why the approved CDM methodology is applicable to the project?	N/A	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?	N/A	N/A	N/A
38 (d)	Is the monitoring plan established appropriately as a result?	N/A	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?	N/A	N/A	N/A

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	(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 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?	No leakages are expected.	OK	OK
40 (b)	Does the PDD provide a procedure for an ex ante estimate of leakage?	See the section 40 (a) of this table.	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?	N/A	N/A	N/A
Estimation of emission reductions or enhancements of net removals				
42	Does the PDD indicate which of the following approaches it chooses?	Assessment of emissions in the baseline scenario and in the project scenario is chosen.	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	(a) Assessment of emissions or net removals in the baseline scenario and in the project scenario (b) Direct assessment of emission reductions			
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?	PDD provides ex ante estimates of: (a) Emissions for the project scenario (Section E.1); (b) No leakages are expected; (c) Emissions for the baseline scenario (Section E.4); (d) Emission reductions adjusted by leakage (Section E). **CAR 11.** The tables in Sections E.1, E.4, E.5 are not numbered. Please make the appropriate changes. **CAR 12.** Incorrectly calculated the amount of «total baseline emissions, tonnes CO2e» for 2013-2020 years. Please make the appropriate changes.	CAR 11 CAR 12	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)? (b) Leakage, as applicable? (c) Emission reductions or enhancements of net removals adjusted by leakage?	N/A	N/A	N/A
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?	Estimates in 43 are given on the periodic basis, from the beginning until the end of the crediting period, in tones of CO_2 equivalent, on a source-by-source basis, for each GHG. The formulae used in PDD are consistent. Key factors influencing the baseline emissions and the	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	(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 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	activity level of the project and the project emissions are taken into account, as appropriate. Data sources used for calculating the estimates are clearly identified, reliable and transparent. Default values are taken from identified sources. Estimation in 43 is based on conservative assumptions and the most plausible scenario in a transparent manner. Estimates in 43 are consistent throughout the PDD. The annual average of estimated emission reductions calculated by dividing the total estimated emission reductions over the crediting period by the total months of the crediting period and multiplying by twelve.		

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	estimated emission reductions or enhancements of net removals over the crediting period by the total months of the crediting period and multiplying 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?	Illustrative ex-ante estimation of emission reduction is made on the excel spreadsheet. **CAR 13.** Please, for more detailed identification, include information concerning name of the project and the reporting monitoring period in emission reduction excel calculation spreadsheet.	CAR 13	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?	N/A	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 CO_2 equivalent, using global warming potentials defined by decision 2/CP.3 or as subsequently revised in accordance with Article 5 of the Kyoto Protocol?	N/A	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?	Yes. For more detailed information, please, see section F.1 of the PDD.	OK	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?	Project activity is in consistence with all mandatory laws and regulations. The Odessa Refinery operation is in line with the following regulations: Law of Ukraine 'On atmospheric air protection', Sanitary Regulations and Norms 4946-89 'Sanitary regulations on atmospheric air protection', etc. The Ministry of Environmental protection of Ukraine has issued an Allowance for emissions of polluting substances into the atmospheric air by stationary sources at 24/06/2009, which will remain valid till 24/06/2014 and foresees amounts and pollutants emitted within the project boundaries.		

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		Environmental impact assessment regarding the modernization of the AVD unit and its furnaces replacement has been prepared by the Company Ecotechnika and approved by LUKOIL responsible bodies on 05/09/2006. Statement of environmental effects of the activity has been published in environmental impact assessment of the project (volume 8, pp. 99-111) dated 15/09/2006. Positive conclusion 1815/03-06-09 of the state environmental expertise of the detailed design of the project has been approved by the State environmental administration in Odessa region on 22/05/2007. **CAR 14.** For information on environmental statistical reporting forms should be included in section F.2. Please make the appropriate changes. **CL 05.** Please provide the conclusion of the state ecological expertise on reconstruction projects.	CAR 14 CL 05	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?	No stakeholder consultation process for the JI projects is required by the Host Party. Stakeholders' comments will be collected during the time of this PDD publication during the determination procedure. Positive conclusion of the state environmental expertise of		

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	(b) The nature of the comments? (c) A description on whether and how the comments have been addressed?	the detailed design of the project of the AVD reconstruction has been approved by the State environmental administration in Odessa region on 22/05/2007. **CL 06.** Please provide information regarding project approval by local authorities or the Department of Environmental Protection and, if possible, include these data in Section G.1.	CL 06	OK
Determination regarding small-scale projects (additional elements for assessment)				
50	Does the PDD appropriately specify and justify the SSC project type(s) and category(ies) that fall under: (a) One of the types and thresholds of JI SSC projects as defined in .Provisions for joint implementation small-scale projects? If the project contains more than one JI SSC project type component, does each component meet the relevant threshold criterion? (b) One of the SSC project categories defined in the most recent version of appendix B of annex II to decision 4/CMP.1, or an additional project category approved by the JISC in accordance with the relevant provision in "Provisions for joint implementation small-scale projects"?	The small scale project conforms to the type (II): Energy efficiency improvement projects which reduce energy consumption, on the supply and/or demand side, by up to 60 gigawatt hours (GWh) per year (or an appropriate equivalent). The small scale project conforms to the category H. Energy efficiency and fuel switching measures for industrial facilities (according to the APPENDIX B of Decision 4/CMP.1).	OK	OK
51	Does the SSC PDD confirms and shows that the proposed JI SSC project is not a debundled component of a large project by explaining that there does not exist a JI (SSC) project with a publicly available determination in accordance with paragraph 34 of the JI guidelines: (a) Which has the same project participants;	The proposed project is not a debundled component of a larger project. PJSC "LUKOIL-ODESSA REFINERY" is not a project participant to any joint implementation or small-scale joint implementation project with a publicly available determination in accordance with paragraph 34 of the JI guidelines.	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	and (b) Which applies the same technology/measure and pertains to the same project category; and (c) Whose determination has been made publicly available in accordance with paragraph 34 of the JI guidelines within the previous 2 years; and (d) Whose project boundary is within 1 km of the project boundary of the proposed JI SSC project at the closest point?	The proposed project doesn't meet the requirements defining debundled project in accordance with paragraph 15 of "Provisions for joint implementation small scale projects", Version 3. Thus the project participants aren't involved in the JI project which apply the same technology/measure and pertains to the same project category, whose determination has been made publicly available within the previous 2 years and has project boundary within 1 km of the proposed project's boundary.		
Applicable to bundled JI SSC projects only				
52 (a)	Do all projects in the bundle: (i) Have the same crediting period? (ii) Comply with the provisions for JI SSC projects defined in "Provisions for joint implementation small-scale projects", in particular the thresholds referred to in 50 (a) above? (iii) Retain their distinctive characteristics (i.e. location, technology/measure etc.)?	N/A	N/A	N/A
52 (b)	Does the composition of the bundle not change over time?	N/A	N/A	N/A
52 (c)	Has the AIE received (from the project participants): (i) Information on the bundle using the form developed by the JISC (F-JI-SSCBUNDLE)? (ii) A written statement signed by all project participants indicating that they agree that their individual projects are part of the bundle and nominating one project participant to represent	N/A	N/A	N/A

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	all project participants in communicating with the JISC? (iii) Indication by the Parties involved that they are aware of the bundle in their project approvals referred to in 19 above?			
53	If the project participants prepared a single SSC PDD for the bundled JI SSC projects, do(are) all the projects: (a) Pertain to the same JI SSC project category? (b) Apply the same technology or measure? (c) Located in the territory of the same host Party?	N/A	N/A	N/A
54	If the project participants prepared separate SSC PDDs for the bundled JI SSC projects, do(are) all the projects: (a) Have SSC PDDs been prepared for all JI SSC projects in the bundle? (b) Does each SSC PDD contain a single JI SCC project in the bundle?	N/A	N/A	N/A
55	If the projects in the bundle use the same baseline, does the F-JI-SSC-BUNDLE provide an appropriate justification for the use of the same baseline considering the particular situation of each project in the bundle?	N/A	N/A	N/A
56	Does the PDD indicate which of the following approaches is used for establishing a monitoring plan? (a) By preparing a separate monitoring plan for each of the constituent projects; (b) By preparing an overall monitoring plan	N/A	N/A	N/A

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	including a proposal of monitoring of performance of the constituent projects on a sample basis, as appropriate.			
56 (b)	If the approach 57 (b) above is used, (i) Are all the JI SSC projects located in the territory of the same host Party? (ii) Do all the JI SSC projects pertain to the same project category? (iii) Do all the JI SSC projects apply the same technology or measure? (iv) Does the overall monitoring plan reflect good monitoring practice appropriate to the bundled JI SSC projects and provide for collection and archiving of the data needed to calculate the emission reductions achieved by the bundled projects?	N/A	N/A	N/A
Applicable to all JI SSC projects				
57	Is the leakage only within the boundaries of non-Annex I Parties considered?	N/A	N/A	N/A
Determination regarding land use, land-use change and forestry projects _Paragraphs 58 – 64(d)_Not applicable				
Determination regarding programmes of activities_Paragraphs 66 – 73_Not applicable				

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
CL 01. Explain why the project behaves to the Sectoral scope - Manufacturing industry?	-	Corrected in the PDD. The project belongs to the Sectoral scope 5. Chemical industry.	Due to the amendments made in the PDD, CL 01 is closed.
CAR 01. Please, describe in more detail the project scenario - the technology and history of the project in section A.2, but no more than 2 pages.	-	The project scenario and its history were more detailed described in section A.2.	The PDD has been corrected. CAR 01 is closed.
CL 02. Please provide documents to prove that the unit did not work in 2011-2012.	-	The copy of the Enterprises' director order providing stoppage of the AVD unit has been provided to AIE.	Based on the documentation received, CL 02 is closed.
CAR 02. Please, provide a table of information about the second participant of the project in accordance with the JI PDD Form for Small-Scale Projects Version 01.1.	-	Corrected	Necessary corrections have been made. The issue is closed.
CAR 03. Please, provide a Content page in accordance with the JI PDD Form for Small-Scale Projects Version 01.1	-	Corrected	Necessary corrections have been made. The issue is closed.

CAR 04. Please, place a section A 4.1.4 on one page.	-	Corrected	The PDD has been corrected. CAR 04 is closed.
CAR 05. The project has no letters of approval from Ukraine.	19	The copy of the Letter of Endorsement issued by the State Environmental Investment Agency of Ukraine has been provided to AIE. Final PDD will be sent along with the final determination report to the State Environmental Investment Agency of Ukraine for the Letter of Approval, which usually is expected within 30 days after PDD submission.	Pending.
CAR 06. Please recalculate IRR/NPV for sensitivity scenarios and correct the PDD pages 18-19 accordingly.	28	The financial analysis has been improved by using benchmark analysis. The recalculations of IRR for sensitivity scenarios have been made. The corresponded changes in PDD have been made.	Necessary corrections have been made. The issue is closed.
CAR 07. As a result of rounding figures by year, incorrect amount of «total» in Table. B.2.1-1. Please make the appropriate changes.	28	The “total” sum didn’t correspond to the yearly values as a result of the mathematical rounding. The appropriate amendments have been made and the values are reflected without rounding.	Necessary corrections have been made, CAR 07 is closed.

CL 03. Please, explain why the total duration of the project - 20 years until 2027, but crediting period was selected until 2020.	34 (a)	The duration of the crediting period till 2020 was chosen taking into account that second crediting period of 2013-2020 is the plausible crediting period to be approved at the international level and by the Host Party. Simultaneously it corresponds to the requirements of the Guidelines For Users Of The JI PDD Form (Version 04) noting that the crediting period shall not extend beyond the operational lifetime of the project.	Based on the explanation received, CL 03 is closed.
CAR 08. Please make the changes about СТП forms in section D.1.	36 (b) (ii)	The relevant changes have been made.	The PDD has been corrected. CAR 08 is closed.
CAR 09. Please provide exact references to sources of data on the parameters in section B.1 and D.2.	36 (f) (vii)	The relevant amendments have been made.	The PDD has been corrected. CAR 09 is closed.
CAR 10. Please, correct the information about the version of the environmental management system standard in Section D.3.	36 (f) (vii)	The relevant amendments of the version of the Environmental management system ISO 14000 have been made.	The PDD has been corrected. CAR 10 is closed.
CL 04. Please provide document which confirms that the data monitored and required for verification are to be kept for two years after the last transfer of ERUs for the project.	36 (m)	The copy of the Order #576 has been provided to AIE.	Based on the document received, CL 04 is closed.
CAR 11. The tables in Sections E.1, E.4, E.5 are not numbered. Please make the appropriate changes.	43	The relevant amendments have been made.	The PDD has been corrected. CAR 11 is closed.

CAR 12. Incorrectly calculated the amount of «total baseline emissions, tonnes CO2e» for 2013-2020 years. Please make the appropriate changes.	43	The error in the baseline emission calculation has been corrected. Total baseline emissions for the period of 2013-2020 amount 923 240 tonnes CO2e.	The PDD has been corrected. CAR 12 is closed.
CAR 13. Please, for more detailed identification, include information concerning name of the project and the reporting monitoring period in emission reduction excel calculation spreadsheet.	46	The name of the file and relevant information has been added to the spreadsheets.	The spreadsheets has been corrected. CAR 13 is closed.
CAR 14. For information on environmental statistical reporting forms should be included in section F.2. Please make the appropriate changes.	48 (b)	The information concerning environmental reporting has been added to section F.2.	The PDD has been corrected. CAR 14 is closed.
CL 05. Please provide the conclusion of the state ecological expertise on reconstruction projects.	48 (b)	The copy of the Positive conclusion on the project issued by the State environmental administration in Odessa region has been provided to AIE.	Based on the document received, CL 05 is closed.
CL 06. Please provide information regarding project approval by local authorities or the Department of Environmental Protection and, if possible, include these data in Section G.1.	49	The copy of the Positive conclusion on the project issued by the State environmental administration in Odessa region has been provided to AIE.	Based on the document received, CL 06 is closed.