DETERMINATION REPORT
GLOBAL CARBON BV

DETERMINATION OF THE "ENERGY EFFICIENCY IMPROVEMENT UNDER RECONSTRUCTION OF OXYGEN SHOP AND STEEL CONTINUOUS CASTING SECTION OF BLAST OXYGEN FURNACE SHOP #2 AT OJSC "NOVOLIPETSK STEEL"

REPORT NO. RUSSIA-DET/0165/2011
REVISION NO. 02

BUREAU VERITAS CERTIFICATION

Report No: Russia-det/0165/2011 rev.02

DETERMINATION REPORT ON JI PROJECT

"Energy efficiency improvement under reconstruction of Oxygen shop and steel continuous casting section of Blast Oxygen Furnace shop #2 at OJSC "Novolipetsk Steel"

Date of first issue: 22/12/2011	Organizational unit: Bureau Veritas Certification Holding SAS
Client: Global Carbon BV	Client ref.: Mr. Lennard de Klerk

Summary:

Bureau Veritas Certification has made the determination of the "Energy efficiency improvement under reconstruction of Oxygen shop and steel continuous casting section of Blast Oxygen Furnace shop #2 at OJSC "Novolipetsk Steel" project of OJSC "Novolipetsk Steel" located in Lipetsk, the Russian Federation 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 22 Corrective Actions Requests (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.: RUSSIA-det/0165/2011	Subject Group: JI
Project title: "Energy efficiency improvement under reconstruction of Oxygen shop and steel continuous casting section of Blast Oxygen Furnace shop #2 at OJSC "Novolipetsk Steel" project of OJSC "Novolipetsk Steel"	
Work carried out by: Andrey Rodionov – Lead verifier	
Work reviewed by: Vera Skitina – Internal Technical Reviewer	
Work approved by: Leonid Yaskin – Operational Manager	

Date of this revision: 22/12/2011	Rev. No.: 02	Number of pages: 65

Indexing terms

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Abbreviations

AIE	Accredited Independent Entity
BVC	Bureau Veritas Certification
CAR	Corrective Action Request
CL	Clarification Request
CO2	Carbon Dioxide
DDR	Draft Determination Report
DR	Document Review
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
ERU	Emission Reduction Unit
GHG	Greenhouse House Gas(es)
IE	Independent Entity
IPCC	Intergovernmental Panel on Climate Change
JI	Joint Implementation
JISC	Joint Implementation Supervisory Committee
NGO	Non Governmental Organization
NSCF	CJSC "National Carbon Sequestration Foundation"
NLMK	OJSC "Novolipetsk Steel"
PDD	Project Design Document
PP	Project Participant
RF	Russian Federation
tCO2e	Tonnes CO2 equivalent
UNFCCC	United Nations Framework Convention for Climate Change

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1 INTRODUCTION

Global Carbon BV has commissioned Bureau Veritas Certification to determine its JI project "Energy efficiency improvement under reconstruction of Oxygen shop and steel continuous casting section of Blast Oxygen Furnace shop #2 at OJSC "Novolipetsk Steel" (hereafter called "the project") at Lipetsk, the Russian Federation.

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 emissions reductions 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:

Andrey Rodionov
Bureau Veritas Certification, Lead Verifier

This verification report was reviewed by:

Vera Skitina
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 Global Carbon 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, Clobal Carbon BV revised the PDD and resubmitted it on 22/12/2011.

The determination findings presented in this report relate to the project as described in the PDD version 2.3 dated 22/12/2011.

2.2 Follow-up Interviews

On 23-24/11/2011 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 OJSC "Novolipetsk Steel" were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
NLMK	➢ NLMK Investment Programme ➢ Reasoning for project implementation ➢ Project management organization ➢ Project history and Implementation schedule ➢ Baseline scenario ➢ Barriers and uncommon practice ➢ Project scenario ➢ Recourse consumption saving effects ➢ Emission calculation ➢ Investment issues ➢ Commissioning and proven trials ➢ Capacity replacement issues ➢ QC & QA Procedures ➢ Training of personnel ➢ Environmental permissions ➢ Environmental Impact Assessment ➢ Public hearings
CONSULTANT **Global Carbon BV**	➢ Ditto
Stakeholders	➢ N/A

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 verification protocol in Appendix A.

3 PROJECT DESCRIPTION

Subproject 1. Construction of new air separation plants at the Oxygen shop

In 2008-2009 at Oxygen station No 1 of the Oxygen shop three new air separation plants were set in operation: one plant manufactured by Kriogenmash (No 9) and two plants manufactured by Linde (No 4 and 5). Old plants No 8 (nitrogen production), 6 and 9 (oxygen production) were dismantled. New ASPs use technology of oxygen and nitrogen joint production and technology of air complex purification. The second technology allows receiving products of air separation with higher extraction factor as a consequence of less compressed air consumption. Operation of new plants is possible from 70 % up to 100% of nominal productivity. That also allows reducing the compressed air consumption. It means that the lower compressed air consumption and, as result, power inputs (the electricity and steam) on its compression will be after subproject implementation. Besides, argon production is carried out by a method of rectification without use hydrogen (H2). Therefore after subproject implementation less energy resources are consumed for oxygen, nitrogen, argon and inert gases in comparison with the baseline.

Subproject 2. Reconstruction of two continues casting machines No 6 and 7 at the Basic Oxygen Furnace shop No 2

Two new modern continues casting machine No 6 and 7 replace two old CCM No 6 and 7 at the BOF shop No 2 without the change of the shop steel casting capacity. As result of the subproject implementation the clipping of slabs is decreased in comparison with the baseline. In this case the volume of liquid steel for slab production is decreased too. Therefore after subproject implementation less energy resources are consumed for steel (slab) production in comparison with the baseline.

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 22 Corrective Action Requests.

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

4.1 Project approvals by Parties involved (19-20)

The project has no approvals by the Host Party, therefore CAR 03 remains pending.

A written project approval by Party B should be provided to the AIE and made available to the secretariat by the AIE when submitting the first verification report for publication in accordance with paragraph 38 of the JI guidelines. It has not been provided to AIE at the determination stage.

Bureau Veritas Certification considers the letters as unconditional in accordance with paragraphs 19 - 20 of the DVM.

4.2 Authorization of project participants by Parties involved (21)

The participation for each of the legal entities listed as project participants in the PDD is authorized by a Party involved, which is also listed in the PDD, through a written project approval by a Party involved, explicitly stating the name of the legal entity.

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.

JI specific approach

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 being Scenario1 (for subprojects 1 and 2):
   a. Scenario1: Continuation of a situation existing prior to the project (for subprojects 1 and 2);
   b. Scenario2: Construction of new air separation plants at the Oxygen shop No 4, 5 and 9 (for subproject 1);
   c. Scenario2: Reconstruction of two continues casting machines No 6 and 7 at the Basic Oxygen Furnace shop No 2 (for subproject 2);

(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:
   a. Sectoral reform policies and legislation in steel industry.
      The PDD reads that the main development goal of the metallurgical industry is reducing of domestic metal demand (refer to approved state strategy of metallurgical industry) and also any project must be approved by a local administration (permission for construction) and by a local conservancy;
   b. Economic situation in Russian steel industry and predicted demand.
      PDD states that the productivity of baseline scenario is not changed in comparison with prior situation and project scenario (refer to PDD, Section B.1) ;
   c. Availability of capital to OJSC "Novolipetsk Steel" (including investment barriers).
      The PDD reads that NLMK has a good credit history and an invested capital was availed for the project.
      This aspect was considered during additionality proof (Section B.2);
   d. Local availability of technology/techniques and equipment.

The PDD reads that All technologies applied in the proposed project were well known and available. Some local and foreign companies could provide technology and equipment and implement project and construction works for the project implementation.

e. Price and availability of fuel.
The PDD shows that as a result of project implementation the fuel, electricity and steam consumption are reduced. Electricity and natural gas are widely used and available in Russia and the PDD gives detailed information about fuel prices evolution in Russia (refer to PDD, Sections B.1).

After screening the second alternative scenarios the first scenario is left as the most plausible, namely:

Scenario1: Continuation of a situation existing prior to the project.

The first alternative was identified as the most plausible scenario for the following reasons:

(a) There are not legal or other requirements that enforce NLMK to stop or reconstruct CCMs and Oxygen shop;
(b) Baseline equipment is maintained with routine and capital repairs;
(c) Implementation of new CCMs and ASPs is not financially attractive for NLMK and requires significant additional investment. Investment analysis has been presented to prove the additionality in section B.2.

All explanations, descriptions and analyses pertaining to the baseline in the PDD are made in accordance with the referenced JI specific approach and the baseline is identified appropriately.

Outstanding issues related to Baseline setting (23), PP's response and the AIE conclusion are summarized in Appendix A (refer to CARs 04-09).

The issued CARs concern the following findings: the theoretical description of the baselines (CAR 05), the same level of service in the project and baseline scenario (CARs 06 - 07) and the identification of uncertainties and the used assumptions, including conservative ones (CARs 08 - 09).

4.4 Additionality (27-31)

JI specific approach

The most recent version 05.2 of the "Tool for the demonstration and assessment of additionality" approved by the CDM Executive Board is used to demonstrate additionality. All explanations, descriptions and analyses are made in accordance with the selected tool.

The PDD developer provides a justification of the applicability of the approach with a clear and transparent description, as per item 4.3 above. PDD developer described and scrutinized plausible alternative scenarios which have been provided in Section B.1:

Alternative 1: Continuation of a situation existing prior to the project (for subprojects 1 and 2);

Alternative 2: Construction of new air separation plants at the Oxygen shop No 4, 5 and 9 (for subproject 1);

Alternative 2: Reconstruction of two continues casting machines No 6 and 7 at the Basic Oxygen Furnace shop No 2 (for subproject 2).

Justification of additionality has been done in several steps, based on consideration of economic attractiveness of alternative technological options of commercial steel production, namely:

(a) identification of alternatives to the project activity,
(b) investment analysis,
(c) common practice analysis.

The key additionality proofs were the results of the comparison and sensitivity analyses. The comparison analysis has shown that the project's NPV is below than NPV of Alternative 2. The sensitivity analysis of variations of key parameters (investment cost, electricity and steam tariffs) confirms the conclusion of the basic investment analysis.

The spreadsheet with the comparison analysis was made available for the verifier, and Bureau Veritas Certification will submit it to JISC at the final determination as the supporting documentation.

The common practice analysis has shown that the proposed JI project does not represent a widely observed practice in the geographical area concerned.

The verifier determined that additionality is demonstrated appropriately as a result of the analysis using the approach chosen.

Outstanding issues related to Additioality (29), PP's response and the AIE conclusion are summarized in Appendix A (refer to CARs 10-14).

The issued CARs concern the following findings: consistency between names of scenarios (CAR 10), the value of systematic market risk (CAR 11), the method of investment analysis (CAR 12), the possible benefit from residual value of equipment (CAR 13) and common practice analysis (CAR 14).

4.5 Project boundary (32-33)

JI specific approach

The project boundary defined in the PDD, Section B.3, Table B.3-1 for project and baseline scenario accordingly, encompasses all anthropogenic emissions by sources of greenhouse gases (GHGs) that are: (i) under the control of the project participants, (ii) reasonably attributable to the project, (iii) significant.

The delineation of the project boundary and the gases and sources included are appropriately described and justified in the PDD, Section B.3.

Based on the above assessment, the AIE hereby confirms that the identified boundary and the selected sources and gases are justified for the project activity.

4.6 Crediting period (34)

The PDD states the starting date of the project as the date on which the real action of the project began, and the starting date is 09/06/2005, 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 or 240 months.

The PDD states the length of the crediting period in years and months, which is 4 years and 11 months, and its starting date as 04/02/2008, which is on the date the first emission reductions are generated by the project.

Outstanding issues related to Crediting period (34), PP's response and the AIE conclusion are summarized in Appendix A (refer to CARs 15-16).

The issued CARs concern the following findings: the form of starting data (CAR 15) and the evidence of the starting date of the crediting period (CAR 16).

4.7 Monitoring plan (35-39)

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

JI specific approach

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 (refer to PDD, Sections B.1, D. 1.1.1 and D.1.1.3).

The monitoring plan specifies the indicators, constants and variables that are reliable (i.e. provide consistent and accurate values), valid (i.e. be clearly connected with the effect to be measured), and that provide a transparent picture of the emission reductions to be monitored (refer to PDD, Sections B.1, D. 1.1.1 and D.1.1.3).

The monitoring plan is developed subject to the list of standard variables contained in appendix B of "Guidance on criteria for baseline setting and monitoring" developed by the JISC.

All categories of data to be collected in order to monitor GHG emissions from the project and determine the baseline of GHG emissions (Option 1) are described in required details.

The monitoring plan explicitly and clearly distinguishes:

(i) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), and that are available already at the stage of determination (refer to PDD, Sections B.1, D.1.1.3 and Annex 2);

(ii) This issue is not applicable for the project;

(iii) Data and parameters that are monitored throughout the crediting period, such as electrical energy consumption, output of steel, waste of steel, consumption of steam (refer to PDD, Sections D.1.1.1 and D.1.1.3).

Step-by-step application of the used approach for monitoring is described in PDD Section D including monitoring procedures, formulae, parameters and data sources. The monitoring plan elaborates all algorithms and formulae used for the estimation of baseline emissions and project emissions refer to PDD, Sections D.1.1.2 and D.1.1.4. The internal quality system at NLMKl is functioning in accordance with the national standards and regulations in force. The evidences of existing internal quality system were provided during on-site visit to NLMK.

The monitoring plan describes the methods employed for data monitoring (including its frequency) and recording, the data are archived in technical report (refer to PDD, Sections D.1.1.1 and D.1.1.3).

The monitoring plan presents the quality assurance and control procedures for the monitoring process (refer to PDD Sections B.1, D.1.5, D.2 and D.3). This includes information on calibration and on how records on data and method validity and accuracy are kept and made available on request. Evidence of existing of requirement procedures for monitoring plan implementation was provided during on-site visit /19-26/.

The monitoring plan clearly identifies the responsibilities and the authority regarding the monitoring activities. Initial data for GHG emissions monitoring according to the tables (D.1.1.1 and D.1.1.3) are accumulated by Oxygen Shop for subproject 1 and BOF Shop No 2 for subproject 2. These data are summarized to the Energy Saving Centre where the Monitoring report is prepared. Annual Monitoring report is prepared Global Carbon BV. Annual Monitoring report is approved by Vice-president for Long Term Development & Environmental.

Collection of data required for estimation of GHG emission reductions is planned to be performed to high industry standard in both electronic and paper way.

On the whole, the monitoring report 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 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 (refer to PDD Section D.1).

Outstanding issues related to Monitoring plan (36), PP's response and the AIE conclusion are summarized in Appendix A Table 2 (refer to CARs 17-21).

The issued CARs concern the following findings: the procedures to be followed if expected data are unavailable (CAR 17), conservativeness of the approach (CARs 18 – 19 and 22), key assumptions (CAR 20) and the requirement for data keeping (CAR 21).

4.8 Leakage (40-41)

JI specific approach

The PDD appropriately describes an assessment of the potential leakage of the project and appropriately explains that the estimation of leakage is neglected from conservative reasons because the leakages in project scenario are less than in baseline scenario.

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

JI specific approach

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

The PDD provides the ex ante estimates of:

(a) Emissions for the project scenario (within the project boundary), which are 8,394,887 tons of CO2eq for subproject 1; 33,873,369 tons of CO2eq for subproject 2 and 42,268,256 tons of CO2eq total for project ;

(b) Leakage (N/A);

(c) Emissions for the baseline scenario (within the project boundary), which are 9,436,881 tons of CO2eq for subproject 1; 33,978,386 tons of CO2eq for subproject 2 and 43,415,268 tons of CO2eq total for baseline scenario;

(d) Emission reductions adjusted by leakage (based on (a)-(c) above), which are 1,147,011 tons of CO2eq.

The formulae used for calculating the estimates are referred in the PDD, Sections E.1-E.6.

The formulae used for calculating the estimates are referred in the PDD, Sections E.1-E.6 and Section D.1.4.

For calculating the estimates referred to above, key factors defined in the monitoring plain influencing the project and baseline emissions were taken into account, as appropriate.

Data sources used for calculating the estimates referred to above are clearly identified, reliable and transparent /12-18/.

Emission factors, such as emission factor of coke production, 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 scenario 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 number of months of the crediting period, and multiplying by twelve.

The PDD Section E includes an illustrative ex ante emissions calculation.

4.10 Environmental impacts (48)

The PDD lists and attaches documentation on the analysis of the environmental impacts of the project in accordance with procedures as determined by the host Party, such as the Federal Law "On the Environmental Expertise".

The PDD provides conclusion and all references to supporting documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party. The PDD shows that the project implementation enables to decrease emission of pollutants and the environmental impacts of the project are not considered significant by the project participants.

4.11 Stakeholder consultation (49)

Public has been informed about the planned project activities with the goal to identify public attitudes and take public opinion in account during environmental impact assessment process.

No comments from the public were received within the deadlines indicated in these publications.

4.12 Determination regarding small scale projects (50-57)

Not applicable.

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

Not applicable.

4.14 Determination regarding programmes of activities (65-73)

Not applicable.

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

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

6 DETERMINATION OPINION

Bureau Veritas Certification has performed a determination of the "Energy efficiency improvement under reconstruction of Oxygen shop and steel continuous casting section of Blast Oxygen Furnace shop #2 at OJSC "Novolipetsk Steel" Project in Russia. 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) on-site follow-up interviews with project stakeholders; iii) the resolution of outstanding issues and the issuance of the final determination report and opinion.

Project participant used the JI specific approach for demonstration of the additionality. In line with this 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 review of the project design documentation and the subsequent follow-up interviews have provided Bureau Veritas Certification with sufficient evidence to determine the fulfillment of stated criteria.

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 2.3 dated 22/12/11 meets all the relevant UNFCCC requirements for the determination stage and the relevant host Party 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 Type the name of the company that relate directly to the GHG components of the project.

/1/ PDD "Energy efficiency improvement under reconstruction of Oxygen shop and steel continuous casting section of Blast Oxygen Furnace shop #2 at OJSC "Novolipetsk Steel", Version 2.3, dated 22/12/11.

Supporting documentation:

a. 20111213_CF_NLMK2_ver2.1_en;

b. 20111221_ER_NLMK2_ver2.2_en.

/2/ Guidelines for Users of the Joint Implementation Project Design Document Form/Version 04, JISC.

/3/ Guidance on criteria for baseline setting and monitoring (Version 03).

/4/ "Strategy of metal industry development in Russia till 2020" http://www.minprom.gov.ru/activity/metal/strateg/2.

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

/5/ Letter with prior consideration evidence № 130/212 dated 04.04.2002

/6/ Act N 963 of ASP #9 commissioning dated 04/08/2008 (subproject 1)

/7/ Act N 964 of ASP #5 commissioning dated 11/08/2008 (subproject 1)

/8/ Act N 972 of ASP #4 commissioning dated 31/02/2009 (subproject 1)

/9/ Act N 628 of CCM #6 commissioning dated 04/02/2008 (subproject 2)

/10/ Act N 622 of CCM #7 commissioning dated 13/08/2009 (subproject 2)

/11/ Note № 132-08/00273 with data about investment for project implementation dated 02/12/11

/12/ Methodology for production cost of ASP's products calculation, 1975

/13/ Technical report of nitrogen consumption for 2006-2010

/14/ Technical report of oxygen consumption for 2006-2010

/15/ Technical report of compressed air consumption for 2006-2010

/16/ Technical report of electricity consumption for 2006-2010

/17/ Note with summarized data of basic oxygen shop #2 working in 2004-2010

/18/ Approved air separation conversion factors, 2009

/19/ Certificate of accreditation for measuring equipment verification valid until 31/12/2011

/20/ Passports of counters for compressed air consumption with evidences of verification for ASB 1 and ASB 2 until 2011

/21/ Passports of counters for compressed air consumption with evidences of

verification for ASB 1 and ASB 2 until 2011

/22/ Passports of counters for oxygen production with evidences of verification for ASB 1 and ASB 2 until 2011

/23/ Passports of counters for nitrogen production with evidences of verification for ASB 1 and ASB 2 until 2011

/24/ Passports of counters for electricity consumption "Energia-9" with evidences of verification until 2011

/25/ Passports of counters for steam consumption "Sitrans" and "Sapfir" with evidences of verification until 2011

/26/ Certificate of calibration of tape measures until 2011

/27/ Passports of platform weighing machines with evidences of verification until 2011

/28/ Working draft. Explanatory note. Environmental protection for ASPs #4 and 5, 2006

/29/ Positive conclusion N82-07-3 by State expertise for ASP #9 commissioning, 2007

/30/ Positive conclusion N192-06-3 by State expertise for ASPs #4 and 5 commissioning, 2007

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/ V. Chigikova – OJSC "Novolipetsk Steel", Chief ecologist

/2/ A. Kunitsin – OJSC "Novolipetsk Steel", Chief specialist of the prospective developments of TsES

/3/ A. Perepelitsa – OJSC "Novolipetsk Steel", Chief specialist of TsES

/4/ V. Melnikov – OJSC "Novolipetsk Steel", Specialist of Oxygen shop

/5/ V. Bogachev – OJSC "Novolipetsk Steel", Specialist of Instrumentation of Oxygen shop

/6/ S. Nesterov – OJSC "Novolipetsk Steel", Section chief of the slab

/7/ E. Fomchenkova – OJSC "Novolipetsk Steel", Chief specialist of the department of investment analysis

/8/ A. Varfolomeev – Global Carbon, PDD developer, Lead Specialist

APPENDIX A: COMPANY PROJECT DETERMINATION PROTOCOL

Table 1

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

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
General description of the project				
Title of the project				
-	Is the title of the project presented?	The title of the project is: "Energy efficiency improvement under reconstruction of Oxygen shop and steel continuous casting section of Blast Oxygen Furnace shop #2 at OJSC "Novolipetsk Steel".		OK
-	Is the sectoral scope to which the project pertains presented?	The sectoral scope of the project is presented in PDD.		OK
-	Is the current version number of the document presented?	The PDD version 1.1 was originally presented to Bureau Veritas Certification Russia and reviewed as a part of determination.		OK
-	Is the date when the document was completed presented?	PDD version 1.1 is dated 30/09/2011. PDD version 2.3 is dated 22/11/2011.		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, including a	PDD, Section A.2 reads that the project purpose is "the improvement of the energy efficiency by the implementation of two subprojects". **Subproject 1.** Construction of new air separation plants at the Oxygen shop PDD, Section A.2 reads that in "2008-2009 at Oxygen station No 1 of the Oxygen shop three new air separation plants were set in		OK

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	technical description).	operation: one plant manufactured by Kriogenmash (No 9) and two plants manufactured by Linde (No 4 and 5). Old plants No 6 (nitrogen production), 8 and 9 (oxygen production) were dismantled". **Subproject 2.** Reconstruction of two continues casting machines No 6 and 7 at the Basic Oxygen Furnace shop No 2 PDD, Section A.2 reads that "two new modern continues casting machine No 6 and 7 replace two old CCM No 6 and 7 at the BOF shop No 2 without the change of the shop steel casting capacity". The situation existed prior the project start along with brief description of project and baseline scenario is represented in section A.2.		
-	Is the history of the project (incl. its JI component) briefly summarized?	**CAR 01.** The project history including its JI component is not summarized. Please provide evidence to any event confirming the project history and its JI component.	CAR 01	OK
Project participants				
-	Are project participants and Party(ies) involved in the project listed?	Host Party is the Russian Federation (Party A) with project participant OJSC "Novolipetsk Steel". Party B is the Netherlands with project participant Global Carbon BV.		OK
-	Is the data of the project participants presented in tabular format?	Yes.		OK
-	Is contact information provided in Annex 1 of the PDD?	The contact information is provided in PDD Annex 1.		OK
-	Is it indicated, if it is the case, if the Party involved is a host Party?	Host Party is the Russian Federation.		OK
Technical description of the project				

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
Location of the project				
-	Host Party(ies)	The Russian Federation.		OK
-	Region/State/Province etc.	Lipetsk Area.		OK
-	City/Town/Community etc.	Lipetsk.		OK
-	Detail of the physical location, including information allowing the unique identification of the project. (This section should not exceed one page)	Section A 4.1.4 provides consistent information of the physical location and information of the unique identification of the project location. The coordinates of NLMK are 52°57'N, 39°62'E. **CAR 02.** Please provide reference to source confirming the geographical coordinates of the project.	CAR 02	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?	Section A.4.2 outlines main technologies to be employed including all relevant technical data and the implementation schedule.		OK
Brief explanation of how the anthropogenic emissions of greenhouse gases by sources are to be reduced by the proposed JI project, including why the emission reductions would not occur in the absence of the proposed project, taking into account national and/or sectoral policies and circumstances				
-	Is it explained briefly how anthropogenic GHG emission reductions are to be achieved? (This section should not exceed one page.)	It is briefly explained in PDD that the implementation of the subproject 1 leads to electricity and steam savings are approximately 73,100 MWh per year and 704,500 GJ per year, respectively. The implementation of the subproject 2 leads to reducing of the		OK

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
		specific waste of steel. Thereby GHG emission reduction is more than 32,000 tonnes of CO2 per year.		
Estimated amount of emission reductions over the crediting period				
-	Is the length of the crediting period Indicated?	The length of the crediting period is indicated as 4.916 years.		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 CO2 equivalent are provided.		OK
Project approval by the Parties involved				
19	Have the DFPs of all Parties listed as "Parties involved" in the PDD provided written project approvals?	**CAR 03.** The project has no written approvals by the Parties involved. Information of the project approval by a party involved other than the host Party is not provided. The project approval by the Host Party will be provided after the determination statement is issued by the AIE.	CAR 03	Pending
19	Does the PDD identify at least the host Party as a "Party involved"?	It is indicated that the Russian Federation is the host Party.		OK
19	Has the DFP of the host Party issued a written project approval?	No, pending a response to CAR 03.	Pending	Pending
20	Are all the written project approvals by Parties involved unconditional?	Yes, the written project approvals by Parties involved are unconditional.		OK
Authorization of project participants by Parties involved				
21	Is each of the legal entities listed as project participants in the PDD authorized by a Party involved, which is also listed in the PDD, through: − A written project approval by a Party involved, explicitly indicating the name of the legal entity? or − Any other form of project participant	The project participant OJSC "Novolipetsk Steel" will likely be authorized with the issue of the project approval by the Host Party. Conclusion is pending a response to CAR 03.	Pending	Pending

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
	authorization in writing, explicitly indicating the name of the legal entity?			
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	It is explicitly indicated in the PDD Section B.1 that a JI specific approach is applied according to the Guidance on criteria for baseline setting and monitoring, version 02 (hereafter referred Guidance). **CAR 04.** PDD refer to Version 02 of Guidance on criteria for baseline setting and monitoring but Version 03 is valid now. Please correct it.	CAR 04	OK
JI specific approach only				
23	Does the PDD provide a detailed theoretical description in a complete and transparent manner?	**CAR 05.** Section B.1 does not provide a detailed theoretical description of the baselines in complete and transparent manner as required by Guidelines for users of JI PDD Form Version 04.	CAR 05	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	The baseline is established: (a) By listing and describing future scenarios available for the project owner and selecting the most plausible scenario for each subproject. Two alternative scenarios were listed for subproject 1 and two for subproject 2 and assessed as follows: 1. Continuation of the situation existing prior to the project (subproject 1); 2. Construction of new air separation plants at the Oxygen shop No 4, 5 and 9 (subproject 1); 3. Continuation of the situation existing prior to the project (subproject 2); 4. Reconstruction of two continues casting machines No 6 and 7 at the Basic Oxygen Furnace shop No 2 (subproject 2).	CAR 06 CAR 07 CAR 08 CAR 09	OK OK OK OK

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
	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?	Scenario 2 was selected as the most plausible scenario for subproject 1 and Scenario 4 for subproject 2 thus representing the baseline. (b) By taking into account relevant national and sectoral policies and circumstance that affect a baseline such as the Strategy of the Russian metallurgical industry development until 2020 and other influencing key factors namely: – **Sectoral reform policies and legislation.** PDD shows that the Russian metal market is free market and the OJSC "Novolipetsk Steel" does not have any obligations for construction of new production capacity. However any project must be approved by a local administration (permission for construction) and by the Russian environmental regulations**;** – **Economic situation/growth and socio-demographic factors in the relevant sector as well as resulting predicted demand. Suppressed and/or increasing demand that will be met by the project can be considered in the baseline as appropriate (e.g. by assuming that the same level of service as in the project scenario would be offered in the baseline scenario)**. PDD reads that: "this key factor is not affect to the baseline because both subprojects did not propose any growth or reduction of the reconstructed shops productivity at NLMK"; **CAR 06.** PDD, Section A.4.2, Table A.4.2.3 shows that the baseline outcome in quantity of oxygen and nitrogen is significantly lesser than for the project. Please provide explanation how it is taken into account to meet the following requirement of Guidance: "by		

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
		assuming that the same level of service as in the project scenario would be offered in the baseline scenario". **CAR 07.** PDD, Section B.1, subproject 2, Scenario 2 reads that: "As result of project implementation the steel waste is reduced and quality of steel became higher". It contradicts with the following requirement of Guidance: "by assuming that the same level of service as in the project scenario would be offered in the baseline scenario". – **Availability of capital (including investment barriers).** PDD shows that OJSC "Novolipetsk Steel" has a good credit history and an invested capital was availed for the project; – **Local availability of technologies/techniques, skills and know-how and availability of best available technologies/techniques in the future.** PDD shows that all technologies applied in the proposed project were well known and available; – **Fuel prices and availability**. PDD shows that the result of project implementation the energy resources are reduced. (c) In a transparent manner with regard to the choice of approaches, methodologies, parameters, data sources and key factors. Assumptions are not identified. (d) Taking account of uncertainties and using conservative assumptions is not evident. **CAR 08**. Please provide transparency as to identifying uncertainties		

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
		and the used assumptions, including conservative ones in Sections B.1 and B.2. **CAR 09.** Please justify conservativeness of IPCC default value used for emission factor for BOF steel production (parameter $EF_{BOF,y}$) although actual plant data may be used for calculation of this parameter. (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 of the list of standard variables contained in appendix B to Guidance on criteria for baseline and monitoring. The key information and data used to establish the baseline are provided in the required tabular forms.		
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		OK
25	If a multi-project emission factor is used, does the PDD provide appropriate justification?	N/A		OK
Approved CDM methodology approach only_Paragraphs 26(a) – 26(d)_Not applicable				
Additionality				
JI specific approach only				
28	Does the PDD indicate which of the following approaches for demonstrating additionality is	It is explicitly indicated that the latest version of the CDM "Tool for the demonstration and assessment of additionality" (Version 05.2)		OK

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
	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".	was used. In accordance with paragraph (3) of the tool project proponents should "provide evidence that the incentive from the CDM was seriously considered in the decision to proceed with the project activity. This evidence shall be based on (preferably official, legal and/or other corporate) documentation that was available at, or prior to, the start of the project activity" (refer to CAR 01).		
29 (a)	Does the PDD provide a justification of the applicability of the approach with a clear and transparent description?	PDD provides a justification of the applicability of the CDM Tool with reference to Paragraph 2 of the Annex 1 to the Guidance on criteria for baseline setting and monitoring A clear and transparent description of the Tool steps is provided. The same alternatives to the JI project activity as in Section B.1 are defined. They are consistent with mandatory laws and regulations.		OK
29 (b)	Are additionality proofs provided?	Step-by-step application of the used approach to proof additionality	CAR 10	OK

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
		described in PDD Section B.2 including identification of alternatives, investment analysis and common practice analysis. The following alternatives to the proposed subproject 1 were identified: – Continuation of the situation existing prior to the project (subproject 1); – The proposed project activity undertaken without being registered as a JI project activity (subproject 1); – Continuation of the situation existing prior to the project (subproject 2); – The proposed project activity undertaken without being registered as a JI project activity (subproject 2). **CAR 10.** Please provide consistency between names of scenarios and alternatives in Sections B.1 and B.2. Justification of the investment analysis is provided in file "20110826_CF_NLMK2_ver1.0_en" for both the first and second subprojects. The investment analysis reflects the application of benchmark analysis. Performed investment analysis shows that value of IRR is lower than benchmark and so the subprojects cannot be considered as a financially attractive. **CAR 11.** The systematic market risk from mentioned source 26 for metal industry does not correspond with appropriate value in Table B.2.1 of the PDD. Moreover the source gives evidence for 2007 but not 2005. Please correct it. **CAR 12.** The investment analysis with collation of scenarios is more suitable for Option II (comparison analysis) but not Option III	CAR 11 CAR 12 CAR 13 CAR 14	OK OK OK OK

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
		(benchmark analysis) of the Additionality Tool. Moreover the presented result in file "20110826_CF_NLMK2_ver1.0_en" means that the implementation of subprojects more attractive than the baseline scenarios. Please correct it. **CAR 13.** Please justify why the investment analysis for subproject 1 does not take into account the possible benefit from residual value of KAr-30 (Kriogenmash), additional capacity for O2, N2, Ar and other rare gases production. The sensitivity analysis proves that conclusion regarding the financial/economic attractiveness is robust to reasonable variations in the critical assumptions. In line with the Additionality Tool no barrier analysis is needed when investment analysis is applied. The common practice analysis has shown that the project activity is not the common practice in Russian metal industry. **CAR 14.** Common practice analysis of the PDD does not provide evidence explaining essential distinctions between similar activities that explain why the similar activities enjoyed certain benefits that rendered it economically attractive. Moreover consideration JI projects which are not similar with proposed subprojects ("reconstruction of Oxygen shop and steel continuous casting section") is not correct. All in all, a conclusion is made in PDD that the project activity is additional. **Pending.** Please provide evidence of initial data used to proof		

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
		additionality.		
29 (c)	Is the additionality demonstrated appropriately as a result?	With CARs 10-14 the additionality is not demonstrated.	Pending	OK
30	If the approach 28 (c) is chosen, are all explanations, descriptions and analyses made in accordance with the selected tool or method?	N/A.		OK
Approved CDM methodology approach only_ Paragraphs 31(a) – 31(e)_Not applicable				
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 boundary defined in the PDD encompass all anthropogenic emissions by sources of GHGs (refer to PDD, Section B.3) that are: (i) Under the control of the project participants. (ii) Reasonably attributable to the project. (iii) Significant. PDD shows that GHG emissions of the proposed subprojects are associated with electricity and steam consumption (for subproject 1) and additional BOF steel production (for subproject 2) and these processes are related to fuels combustion.		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?	Project boundary is defined on the basis of case-by-case analysis (not always quantitative) of emission sources.		OK
32 (c)	Are the delineation of the project boundary and the gases and sources included appropriately described and justified in the PDD by using a figure or flow chart as appropriate?	The delineation of the project boundary and the gases and sources are appropriately described and justified in Tables B.3.1, B.3.2 and B.3.3 and Figures B.3.1 and B.3.2.		OK
32 (d)	Are all gases and sources included explicitly	All gases and sources included are explicitly stated. The exclusions		OK

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
	stated, and the exclusions of any sources related to the baseline or the project are appropriately justified?	of sources related leakage are appropriately justified in Section B.3.		
Approved CDM methodology approach only_ Paragraph 33_Not applicable				
Crediting period				
34 (a)	Does the PDD state the starting date of the project as the date on which the implementation or construction or real action of the project will begin or began?	The starting dates of subprojects are defined as – Subproject 1: From June 2005 to March 2009; – Subproject 2: From June 2005 to April 2008. **CAR 15.** Please provide the starting dates of JI projects in correct form (DD/MM/YYYY) and give appropriate references to demonstrate evidence of these events.	CAR 15	OK
34 (a)	Is the starting date after the beginning of 2000?	Yes, it is.		OK
34 (b)	Does the PDD state the expected operational lifetime of the project in years and months?	Operational life time is defined as 20 years or 240 months.		OK
34 (c)	Does the PDD state the length of the crediting period in years and months?	The length of crediting period is defined as 5 years or 60 months.		OK
34 (c)	Is the starting date of the crediting period on or after the date of the first emission reductions or enhancements of net removals generated by the project?	The starting day is 01/02/2008 which is the date of the first emission reductions generated by the project. **CAR 16.** Please give an appropriate reference to demonstrate evidence of the starting date of the crediting period.	CAR 16	OK
34 (d)	Does the PDD state that the crediting period for issuance of ERUs starts only after the beginning of 2008 and does not extend beyond the operational lifetime of the project?	The crediting period is defined as from 04/02/2008 till 31/12/2012 and does not extend beyond the operational lifetime of the project.		OK
34 (d)	If the crediting period extends beyond 2012, does the PDD state that the extension is subject to the host Party approval?	N/A		OK

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
	Are the estimates of emission reductions or enhancements of net removals presented separately for those until 2012 and those after 2012?			
Monitoring plan				
35	Does the PDD explicitly indicate which of the following approaches is used? − JI specific approach; − Approved CDM methodology approach.	The PDD explicitly indicates that the JI specific approach is used.		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 (refer to Section D.1.1.1 of PDD for project activity); - the period in which they will be monitored annually; - all decisive factors (refer to PDD Sections D.1.1.1, D.1.1.3, Annex 2) for the control and reporting of project performance: quality control (QC) and quality assurance (QA) procedures; the operational and management structure that will be applied in implementing the monitoring plan (refer to PDD Sections B.1, D.2, D.3, D.4 and Annex 2). Identification of values for these parameters can be undertaken based on actual data.		OK
36 (b)	Does the monitoring plan specify the indicators, constants and variables used that are reliable, valid and provide transparent picture of the emission reductions or enhancements of net removals to be monitored?	The monitoring plan specifies the indicators, constants and variables used that are reliable, valid and provide transparent picture of the emission reductions to be monitored (refer to PDD Sections B.1, D and Annex 2). For constants please refer to the next paragraph.		OK

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
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?	Default values are used on the basis of 2006 IPCC (refer to PDD Sections D.1.1.1 and Annex 2): Default emission factor for electricity production is selected based on Standardized CO2 emission factors were elaborated for Russian power systems in the Study commissioned by "Carbon Trade and Finance SICAR S.A Electricity System "Volga" (refer to PDD Annex 2).		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?	PDD clearly indicates how the values are to be selected (refer to PDD Sections D.1.5).		OK
36 (b) (ii)	For other values, − Does the monitoring plan clearly indicate the precise references from which these values are taken? − Is the conservativeness of the values provided justified?	The monitoring plan clearly indicates the references from which these values are taken. The conservativeness of the values are not clearly justified in PDD. **Pending e response to CAR 09.**	Pending	OK
36 (b) (iii)	For all data sources, does the monitoring plan specify the procedures to be followed if expected data are unavailable?	N/A for default data. **CAR 17.** Please specify in the monitoring plan the procedures to be followed if expected data are unavailable.	CAR 17	OK
36 (b) (iv)	Are International System Unit (SI units) used?	International System Units (SI units) are used.		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?	PDD in Sections B.1, D.1.1.3 and Annex 2 notes parameters, coefficients and variables to calculate baseline emissions which are obtained through monitoring.		OK

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
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
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 is constructed based on the list of standard variables contained in appendix B of "Guidance on criteria for baseline setting and monitoring".		OK
36 (d)	Does the monitoring plan explicitly and clearly distinguish: (i) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), and that are available already at the stage of determination? (ii) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), but that are not already available at the stage of determination? (iii) Data and parameters that are monitored throughout the crediting period?	Description of the monitoring plan in Section D.1 explicitly and clearly distinguishes: (i) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), and that are available already at the stage of determination regarding the PDD (refer to PDD, Sections D.1, D.1.1.1, D.1.1.3 and Annex 3). (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. There are no such parameters in the monitoring plan. (iii) Data and parameters that are to be monitored throughout the crediting period (refer to PDD, Sections D.1, D.1.1.1, D.1.1.3).		OK
36 (e)	Does the monitoring plan describe the methods employed for data monitoring (including its frequency) and recording?	Yes, the methods used and data collection frequency and recording are clearly defined in the monitoring plan.		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	The monitoring plan elaborated on all algorithms and formulae used for the estimation of baseline and project emissions.		OK

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
	emission reductions from the project, leakage, as appropriate?			
36 (f) (i)	Is the underlying rationale for the algorithms/formulae explained?	The underlying rationale for the formulae is explained as appropriate.		OK
36 (f) (ii)	Are consistent variables, equation formats, subscripts etc. used?	Consistent variables, equation formats, subscripts are used.		OK
36 (f) (iii)	Are all equations numbered?	All formulae are numbered.		OK
36 (f) (iv)	Are all variables, with units indicated defined?	Yes.		OK

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
36 (f) (v)	Is the conservativeness of the algorithms/procedures justified?	The conservativeness of the algorithms and procedures are not clearly identified in PDD. **CAR 18.** Baseline emissions are estimated using conversion factor POE in contrast to project where direct measuring of consumption of energy resources is used to calculate project emissions. Please justify conservativeness of the approach. **CAR 19.** Baseline emissions are estimated using total consumption of electricity and steam in ASC-1 and ASC-2 in contrast to project where only part of it connected with compressed air consumption in ASB-1 and ASB-2 is used to calculate project emissions. Please justify conservativeness of the approach. **CAR 22.** The values of Oxygen production and electricity consumption used for GHG estimation (subproject 1) do not correspond with actual initial data. Please check data using for subproject 1 and recalculate GHG emission reduction.	CAR 18 CAR 19 CAR 22	OK OK OK
36 (f) (v)	To the extent possible, are methods to quantitatively account for uncertainty in key parameters included?	N/A		N/A
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?	Yes.		OK
36 (f) (vii)	Are any parts of the algorithms or formulae that are not self-evident explained?	There are no parts of the algorithms or formulae that are not self-evident in PDD.		OK
36 (f) (vii)	Is it justified that the procedure is consistent with	Yes, the monitoring is in line with current operational routines.		OK

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
	standard technical procedures in the relevant sector?			
36 (f) (vii)	Are references provided as necessary?	Yes, all references are provided.		OK
36 (f) (vii)	Are implicit and explicit key assumptions explained in a transparent manner?	**CAR 20.** Please specify key assumptions used for monitoring plan elaboration and explain them in a transparent manner in the PDD.	CAR 20	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?	Conclusion is pending a response to CARs 18, 19 and 20.	Pending	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?	Uncertainty level of data is defined in Section D.2 as low.		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?	PDD Section D.1.5 provides the explicit identification of main relevant Russian Federation environmental regulations.		OK
36 (h)	Does the monitoring plan document statistical techniques, if used for monitoring, and that they are used in a conservative manner?	N/A		OK
36 (i)	Does the monitoring plan present the quality assurance and control procedures for the monitoring process, including, as appropriate, information on calibration and on how records on	QC/QA procedures are specified in PDD Section D.2. These are routine enterprise procedures.		OK

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
	data and/or method validity and accuracy are kept and made available upon request?			
36 (j)	Does the monitoring plan clearly identify the responsibilities and the authority regarding the monitoring activities?	The operational and management structure for GHG monitoring is described in PDD Section D.3.		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 OJSC "Novolipetsk Steel".		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?	These data are provided in the PDD, Sections D.1.1.1 and D.1.1.3.		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?	**CAR 21.** The requirement for data keeping is incorrectly reproduced in the PDD, Section D.1.	CAR 21	OK
37	If selected elements or combinations of approved CDM methodologies or methodological tools are used for establishing the monitoring plan, are the selected elements or combination, together with elements supplementary developed by the project participants in line with 36 above?	N/A		OK
Approved CDM methodology approach only_Paragraphs 38(a) – 38(d)_Not applicable				
Applicable to both JI specific approach and approved CDM methodology approach_Paragraph 39_Not applicable				

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
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?	N/A		OK
40 (b)	Does the PDD provide a procedure for an ex ante estimate of leakage?	N/A		OK
Approved CDM methodology approach only_Paragraph 41_Not applicable				
Estimation of emission reductions or enhancements of net removals				
42	Does the PDD indicate which of the following approaches it chooses? (a) Assessment of emissions or net removals in the baseline scenario and in the project scenario (b) Direct assessment of emission reductions	Assessment of emissions in the baseline scenario and in the project scenario is chosen.		OK
43	If the approach (a) in 42 is chosen, does the PDD provide ex ante estimates of: (a) Emissions or net removals for the project scenario (within the project boundary)? (b) Leakage, as applicable? (c) Emissions or net removals for the baseline scenario (within the pr oject 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) N/A; (c) Emissions for the baseline scenario (Section E.4); (d) Emission reductions adjusted by leakage (Section E.6).		OK
44	If the approach (b) in 42 is chosen, does the PDD provide ex ante estimates of:	N/A		OK

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
	(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?			
45	For both approaches in 42 (a) Are the estimates in 43 or 44 given: (i) On a periodic basis? (ii) At least from the beginning until the end of the crediting period? (iii) On a source-by-source/sink-by-sink basis? (iv) For each GHG? (v) In tones of CO2 equivalent, using global warming potentials defined by decision 2/CP.3 or as subsequently revised in accordance with Article 5 of the Kyoto Protocol? (b) Are the formula used for calculating the estimates in 43 or 44 consistent throughout the PDD? (c) For calculating estimates in 43 or 44, are key factors influencing the baseline emissions or removals and the activity level of the project and the 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	(a) N/Estimates in 43 are given: (i) Estimates in 43 are given on the periodic basis, from the beginning until the end of the crediting period, in tones of CO2 equivalent; (ii) Yes; (iii) On a source-by-source basis; (iv) For the only GHG CO2; (v) In tCO2e; (b) The formulae used for calculating the estimates in 43 are consistent throughout the PDD,**;** (c) For calculating estimates in 43, key factors influencing the baseline emissions and the activity level of the project and the emissions associated with the project are taken into account, as appropriate; (d) Data sources used for calculating the estimates in 43 are clearly identified. **Conclusion is pending site visit to provide evidence of the initial data.** (e) Yes as regards natural gas emission factor and grid emission factor. (f) **refer to CARs 18, 19 and 20**; (g) The estimates in 43 are consistent throughout the PDD; (h) Compliant.	Pending	OK

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
	and transparent? (e) Are emission factors (including default emission factors) if used for calculating the estimates in 43 or 44 selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice? (f) Is the estimation in 43 or 44 based on conservative assumptions and the most plausible scenarios in a transparent manner? (g) Are the estimates in 43 or 44 consistent throughout the PDD? (h) Is the annual average of estimated emission reductions or enhancements of net removals calculated by dividing the total estimated emission reductions or enhancements of net removals over the crediting period by the total months of the crediting period and multiplying 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?	Yes.		OK
Approved CDM methodology approach only_Paragraphs 47(a) – 47(b)_Not applicable				
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?	PDD Section E.1 lists documentation on the analysis of the environmental impacts of the project.		OK

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
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?	PDD shows that OJSC "Novolipetsk Steel" has all the necessary permits regarding the project's impact on the environment. The project does not have any significant negative impacts on the environment. Furthermore, the project leads to a decrease of energy consumption and to a reduction of GHG emissions. The project does not have any transboundary environmental impacts.		OK
Environmental impacts				
49	If stakeholder consultation was undertaken in accordance with the procedure as required by the host Party, does the PDD provide: (a) A list of stakeholders from whom comments on the projects have been received, if any? (b) The nature of the comments? (c) A description on whether and how the comments have been addressed?	PDD states that OJSC "Novolipetsk Steel" don not have to carry out public hearings for these types of project. Nevertheless OJSC "Novolipetsk Steel" published the project information on the official website.		OK
Determination regarding small-scale projects (additional elements for assessment)_Paragraphs 50 - 57_Not applicable				
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

CAR/CL	Ref. to checklist question in Table 1	Summary of project owner response	Determination team conclusion
CAR 01. The project history including its JI component is not summarized. Please provide evidence to any event confirming the project history and its JI component.	-	Response 1 The proposed projects (subprojects 1 and 2 in the PDD) were implemented in accordance with the investment programme of NLMK. All projects of the programme including proposed projects considered at NLMK in accordance with the terms of the Kyoto protocol since 2002. The main goal of the project implementation as JI to improve economic efficiency and decrease risks of the projects. However the projects realization as JI was delayed till the acceptance of National approval procedure. Finally in 2009 NLMK offered Global Carbon to consider the investment projects of the investment programme as JI. Two of them were realized as JI (#JI 0233) and approved by the involved Parties. And other two projects are subprojects 1 and 2 of the PDD. This information was added in Section A.2 of the PDD on page 4.	Conclusion on response 1 CAR 01 is closed based on due amendments made to the revised PDD.

CAR/CL	Ref. to checklist question in Table 1	Summary of project owner response	Determination team conclusion
		And the supporting document was submitted to AIE.	
CAR 02. Please provide reference to source confirming the geographical coordinates of the project.	-	Response 1 The NLMK business address was corrected (building 2 instead building 1) in Section A.4.1.4 (page 6) and in Annex 1 (page 71). The link to the interactive map of Lipetsk with the geographical coordinates was added in the PDD (footnote #4 on page 6).	Conclusion on response 1 CAR 02 is closed based on due amendments made to the revised PDD.
CAR 03. The project has no written approvals by the Parties involved. Information of the project approval by a party involved other than the host Party is not provided.	19	Response 1 The request for the project approval to the NL Agency of Ministry of Economic Affairs was sent in October. This information was added in Section A.5 of the PDD.	Conclusion on response 1 CAR 03 remains opened because the project has no written approvals by the Parties involved.
CAR 04. PDD refer to Version 02 of Guidance on criteria for baseline setting and monitoring but Version 03 is valid now. Please correct it.	22	Response 1 It was corrected	Conclusion on response 1 CAR 04 is closed based on due amendments made to the revised PDD.
CAR 05. Section B.1 does not provide a detailed theoretical description of the baselines in complete and transparent manner as required by Guidelines for users of JI PDD Form Version 04.	23	Response 1 More detailed theoretical description and assumptions of the baseline were added in Section B.1.	Conclusion on response 1 Please add at the end of Section B.1 a reference to appropriate Section of PDD with the baseline formulae.

<table>
<tr><th>CAR/CL</th><th>Ref. to checklist question in Table 1</th><th>Summary of project owner response</th><th>Determination team conclusion</th></tr>
<tr><td></td><td></td><td><u>Response 2</u>
The references to appropriate formulae in Section D of the PDD were added at the end of Section B.1 (conservative assumptions for subproject 1 and 2).</td><td><u>Conclusion on response 2</u>
CAR 05 is closed based on due amendments made to the revised PDD.</td></tr>
<tr><td>CAR 06. PDD, Section A.4.2, Table A.4.2.3 shows that the baseline outcome in quantity of oxygen and nitrogen is significantly lesser than for the project. Please provide explanation how it is taken into account to meet the following requirement of Guidance: "by assuming that the same level of service as in the project scenario would be offered in the baseline scenario".</td><td>23</td><td><u>Response 1</u>
In Table A.4.2.3 the capacity (productivities) of ASPs are indicated. Total productivity of ASPs is more than required. And ASP can be operated or not for a year. This fact is illustrated in the table below (for example, the compressed air consumption and respectively the operation of ASPs of ASB-1 before the project implementation in 2007 and after – in 2010).

Table: Compressed air consumption, mln.m^3
<table>
<tr><th>Period</th><th>ASP-1</th><th>ASP-2</th><th>ASP-4</th><th>ASP-5</th><th>ASP-6</th><th>ASP-8</th><th>ASP-9</th><th>ASP-10</th></tr>
<tr><td>2007</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Jan</td><td>63.7</td><td>43.3</td><td>0</td><td>0</td><td>136.9</td><td>64.1</td><td>0</td><td>135.9</td></tr>
<tr><td>Feb</td><td>56.7</td><td>62.3</td><td>0</td><td>0</td><td>128.3</td><td>59.1</td><td>0</td><td>118.0</td></tr>
<tr><td>Mar</td><td>63.3</td><td>62.0</td><td>0</td><td>0</td><td>15.0</td><td>68.3</td><td>0</td><td>135.9</td></tr>
<tr><td>Apr</td><td>62.7</td><td>53.9</td><td>0</td><td>0</td><td>87.3</td><td>65.3</td><td>0</td><td>131.8</td></tr>
<tr><td>May</td><td>65.1</td><td>61.9</td><td>0</td><td>0</td><td>122.9</td><td>41.9</td><td>0</td><td>136.0</td></tr>
</table></td><td><u>Conclusion on response 1</u>
There is no transparency in provided data. This request will be discussed during site-visit.

<u>Conclusion on response 2</u>
CAR 06 is closed based on due amendments made to the revised PDD.</td></tr>
</table>

CAR/CL	Ref. to checklist question in Table 1	Summary of project owner response	Determination team conclusion

Jun	63.1	60.5	0	0	126.7	62.8	0	132.5	
Jul	66.4	61.8	0	0	134.6	66.8	0	135.6	
Aug	34.1	61.6	0	0	136.7	67.5	0	133.0	
Sep	63.0	59.0	0	0	136.3	65.1	0	131.7	
Oct	64.9	59.7	0	0	133.1	67.5	0	133.6	
Nov	61.6	58.3	0	0	130.1	65.7	0	133.4	
Dec	66.3	62.0	0	0	134.9	67.1	0	135.7	
2010									
Jan	0	0	127.5	125.4	0	0	117.0	125.4	
Feb	0	0	112.1	108.8	0	0	106.9	42.4	
Mar	0	0	119.8	108.1	0	0	115.9	122.5	
Apr	0	0.9	114.3	119.0	0	0	96.4	128.0	
May	0	0.1	113.2	106.2	0	0	113.3	75.4	
Jun	0	3.9	93.2	111.1	0	0	118.2	0.0	
Jul	2.5	0.0	114.5	117.9	0	0	135.3	0.0	
Aug	30.1	25.6	96.7	112.7	0	0	134.2	0.6	
Sep	2.1	1.6	118.0	110.5	0	0	112.9	97.5	
Oct	5.8	0.6	120.3	100.8	0	0	88.9	134.9	
Nov	0	0	118.3	96.8	0	0	106.4	130.9	
Dec	0	0	122.0	89.0	0	0	109.8	133.6	

Therefore the oxygen and nitrogen production per year is relevant for subproject 1 (all calculations are based on these parameters).

CAR/CL	Ref. to checklist question in Table 1	Summary of project owner response	Determination team conclusion
		The oxygen production did not change and it is about 1.7 mln.m^3/year in both the baseline and the project (please see Table Anx.2.2 in Annex 2 and Table E.4.1 in Section E of the PDD). The nitrogen production increased from about 0.8 (before the project implementation) to 1.4 (after) mln.m^3/year. However the total existing nitrogen capacity of old ASPs #1, 2, 8, 10, 14 and 15 (161,000 m^3 per hour) and no conditional nitrogen production at other old ASPs (as indicated in Section A.4.2 of the PDD on page 7, capacity of no conditional nitrogen production is about 20,000 m^3 per hour) were enough for 1.4 mln.m^3/year of the nitrogen production. It is about 1.5 mln.m^3/year of the nitrogen production Therefore the levels of oxygen and nitrogen production are same in both the project and baseline scenario. Necessary information was added in Section A 4.2 of the PDD. <u>Response 2</u> The dimension of ASP productivity in Table A.4.2.3 was changed to the correct.	

<table>
<tr><th>CAR/CL</th><th>Ref. to checklist question in Table 1</th><th>Summary of project owner response</th><th>Determination team conclusion</th></tr>
<tr><td></td><td></td><td>The productivity of the ASPs (PDD, Section A.4.2, Table A.4.2.3) in the project scenario is more than in the baseline. Please see the table below:
<table>
<tr><th>Total productivity</th><th>Dimen.</th><th>BL</th><th>Project</th></tr>
<tr><td>Oxygen production</td><td>м^3/h</td><td>302,000</td><td>340,000</td></tr>
<tr><td>Nitrogen production</td><td>м^3/h</td><td>161,000</td><td>264,000</td></tr>
</table>
It means that maximum technical oxygen and nitrogen production in the baseline are, respectively:
• 2.57 mln. m^3 of oxygen per year (runtime factor is 0.97);
• 1.54 mln. m^3 of nitrogen per year (runtime factor is 0.97 and taking into account the productivity of no conditional nitrogen is about 20,000 m^3 per hour, please see Section A.4.2);
Therefore the following conservative assumptions were added in the PDD (Section B.1):
• If the oxygen production in the project scenario is more than 2.57 mln. m^3 of</td><td></td></tr>
</table>

CAR/CL	Ref. to checklist question in Table 1	Summary of project owner response	Determination team conclusion
		oxygen in a year that the oxygen production is equal to 2.57 mln. m^3 of oxygen in a year; • If the nitrogen production in the project scenario is more than 1.54 mln. m^3 of nitrogen in a year that the nitrogen production is equal to 1.54 mln. m^3 of nitrogen in a year.	
CAR 07. PDD, Section B.1, subproject 2, Scenario 2 reads that: "As result of project implementation the steel waste is reduced and quality of steel became higher". It contradicts with the following requirement of Guidance: "by assuming that the same level of service as in the project scenario would be offered in the baseline scenario".	23	Response 1 Improve of the steel (as slab) quality means that the slabs of 1 and 2 classes (high) are produced more than the slabs of 3 and 4 classes (low). The slab production of high classes at BOF shop No 2 of NLMK increased for 2007-2010 (the part of steel output at new CCMs for 2007-2010 is 0%, 28.7%, 45.8% and 57.5%). However it did not affect to the total slab production (please see Table Anx.2.2 on page 73 and Table E.1.5 on page 66 of the PDD). The total slab production is corresponding (growth and reduction) to the steel production in the World and in Russia (please see IDMarketing and Wikipedia). It means that the slab production is determined	Conclusion on response 1 It is need to give evidence/information that the same level of outcomes quality as in the project scenario would be offered in the baseline scenario. Conclusion on response 2 CAR 07 is closed based on due amendments made to the revised PDD.

CAR/CL	Ref. to checklist question in Table 1	Summary of project owner response	Determination team conclusion
		by total demand of steel (any classes) and should be the same in both the project and the baseline scenarios. The quality of steel affects the benefits of slab selling and operation costs (please see the feasibility study of subproject 1 submitted to AIE, page 5, 6 and 14): - Improve the quality of slab macrostructure (increase of slab cost); - Improve the quality of the surface of the slab (in this case the additional cleaning of the slab surface is not necessary. It means that the operation costs during the rolling steel at NLMK is reduced and the increase of slab cost for buyers); These facts were taken into account as the "discount for selling 3-4 classes" in the investment analysis in Section B.2 of the PDD. Response 2 After the CCMs the slabs 3-4 classes is carried out additional compression and cleaning of the surface. After that the quality of steel (slabs) is same. The additional operation costs are necessary for this case. It	

CAR/CL	Ref. to checklist question in Table 1	Summary of project owner response	Determination team conclusion
		was taken into account as the "discount for selling 3-4 classes" in the investment analysis in Section B.2 of the PDD.	
CAR 08. Please provide transparency as to identifying uncertainties and the used assumptions, including conservative ones in Sections B.1 and B.2.	23	Response 1 Section B.1 and B.2 were rewritten. The following conservative assumptions, including avoiding any uncertainties of the emissions calculation were added in Section B.1: For subproject 1: • Emission factors of electricity and steam consumption are calculated based on the actual data and used for both the project and baseline emissions calculation; • The fuel consumption for blowing production is excluded form the definition of emission factors for electricity and heat generation at NLMK CHPP; • As indicated in Section A.4.2 some of compressed air volume produced at ACSs is delivered into NLMK network (not on ASBs). Therefore the specific electricity and steam consumption of compressed air production (MWh and GJ per m3 of	Conclusion on response 1 Conclusion is pending a response to CAR 19. CAR 08 is closed (refer to CAR 19).

CAR/CL	Ref. to checklist question in Table 1	Summary of project owner response	Determination team conclusion
		compressed air consumption at ASBs) are used for calculation of electricity and steam consumption at ASBs. These parameters are defined based on the actual data including the total compressed air production at ACS-1 or ACS-2 and used for both the project and baseline emissions calculation; • As indicated in Section A.4.2 the configuration of ASB-1 and volume of the process and tonnage oxygen gases were changed therefore the term of process oxygen equivalent (POE) is used for correct definition of baseline parameters. The volume of produced gases in POE is calculated based on the conversion factors for each gas of air separation. These conversion factors were defined based on "The methodology for accounting of expenses and calculating the cost of products in the integrated production of air separation"* and approved by Director of the NLMK TEK in 2002 (also please see	

* "The methodology for Accounting of Expenses and Calculating the Cost of Products in the Integrated Production of Air Separation", Scientific-Research Institute of Technical-Economic Research, 1975

CAR/CL	Ref. to checklist question in Table 1	Summary of project owner response	Determination team conclusion
		Annex 2); • The volumes of argon and rare gases production do not use for definition of the volume of produced gases in POE and, respectively, compressed air consumption in the baseline; • As indicated in Section A.4.2 the hydrogen consumption at ASBs is decreased in the project in comparison with the baseline. However the energy resources consumption for hydrogen production do not take into account in the baseline emission calculation; • Other specific parameters in the baseline are defined based on historical data. For subproject 2: • The IPCC default value of emission factor for BOF steel production (1.46 tCO_2 per tonne of steel) was used in the calculation of both the project and the baseline emissions. This emission factor is less than the local emission factor (about 1.68 tCO_2 per tonne of steel in 2006) that reduces ERUs by approximately 15%. This is very conservative assumption and	

CAR/CL	Ref. to checklist question in Table 1	Summary of project owner response	Determination team conclusion
		covers any uncertainties of the subproject. Also please see PP's response on CAR 09. And the following assumption was added in Section B.2 for subproject 2: • For definition of the slab price of the 3 and 4 classes the discount in 10 $ compared with 1 and 2 classes was used.	
CAR 09. Please justify conservativeness of IPCC default value used for emission factor for BOF steel production (parameter $EF_{BOF,y}$) although actual plant data may be used for calculation of this parameter.	23	Response 1 The IPCC default value of emission factor (EF) for BOF steel production (1.46 tCO_2 per tonne of steel) was defined based on the data of European steelmaking plants. The energy intensity of steel production in Russia is much greater than one is in the EU*. For 2006 the EF for BOF steel production at NLMK was about 1.68 tCO_2 per tonne of steel. The use of local EF should be increased baseline emission and emission reduction units by approximately 15% (or 5,000 tCO_2 in 2010). However the many parameters should be monitored at the sinter, coke, iron and BOF steel production shops. Therefore the project	Conclusion on response 1 CAR 09 is closed based on appropriate explanations given in response.

* http://www.ucee.ru/print.php?main=publication&id=100053

CAR/CL	Ref. to checklist question in Table 1	Summary of project owner response	Determination team conclusion
		participants have decided to use the IPCC EF for simplification of the monitoring process. It is also conservative assumption.	
CAR 10. Please provide consistency between names of scenarios and alternatives in Sections B.1 and B.2.	29(b)	Response 1 The names of scenarios and alternatives in Section B.1 and B.2 were corrected.	Conclusion on response 1 CAR 10 is closed based on due amendments made to the revised PDD.
CAR 11. The systematic market risk from mentioned source 26 for metal industry does not correspond with appropriate value in Table B.2.1 of the PDD. Moreover the source gives evidence for 2007 but not 2005. Please correct it.	29(b)	Response 1 The source was corrected (in new version of the PDD the source number is 27). And for calculation of systematic market risk the value of the Long Term Treasury bond rate (in the file according to the source) should be equal to zero. The recalculated value of systematic market risk is in the cell "K102" and corresponds to the value in the Table B.2.1.	Conclusion on response 1 CAR 11 is closed based on due amendments made to the revised PDD.
CAR 12. The investment analysis with collation of scenarios is more suitable for Option II (comparison analysis) but not Option III (benchmark analysis) of the Additionality Tool. Moreover the presented result in file "20110826_CF_NLMK2_ver1.0_en" means that the implementation of subprojects more attractive than the baseline scenarios. Please correct it.	29(b)	Response 1 The investment analysis (Section B.2 and cash flow calculation file) was corrected according to Option II.	Conclusion on response 1 CAR 12 is closed based on due amendments made to the revised PDD.

<table>
<tr><th>CAR/CL</th><th>Ref. to checklist question in Table 1</th><th>Summary of project owner response</th><th>Determination team conclusion</th></tr>
<tr><td>CAR 13. Please justify why the investment analysis for subproject 1 does not take into account the possible benefit from residual value of KAr-30 (Kriogenmash), additional capacity for O2, N2, Ar and other rare gases production.</td><td>29(b)</td><td><u>Response 1</u>
As described in the PP's response on CAR06 and, respectively, in new version of the PDD the levels of oxygen and nitrogen production are same in both the project and baseline scenario. Therefore there are not any benefits relate to these types of gases.
The annual production of Ar and other rare gases for 2006-2010 is presented in the table below.

Ar, Kr-Xe and Ne-He mixes production, m^3
<table><tr><td>Year</td><td>Kr-Xe</td><td>Ne- He</td><td>Ar</td></tr><tr><td>2006</td><td>2,612</td><td>20,272</td><td>11,259</td></tr><tr><td>2007</td><td>2,849</td><td>18,783</td><td>12,095</td></tr><tr><td>2008</td><td>3,084</td><td>19,236</td><td>14,903</td></tr><tr><td>2009</td><td>2,781</td><td>14,461</td><td>9,805</td></tr><tr><td>2010</td><td>4,098</td><td>17,934</td><td>11,925</td></tr></table>
Only the Kr-Xe mixes production increased by about 1,000 m^3 after project implementation.
Price of krypton is 944 RUR/m^3 (or about 23.6 euro/ m^3) and price of xenon is 9440 RUR/m^3 (or about 236 euro/ m^3)</td><td><u>Conclusion on response 1</u>
The investment analysis for subproject 1 does not take into account the possible benefit from residual value of KAr-30 (Kriogenmash).

<u>Conclusion on response 1</u>
CAR 15 is closed. The possible revenues from the scrap sale were taken into account in the investment analysis.</td></tr>
</table>

CAR/CL	Ref. to checklist question in Table 1	Summary of project owner response	Determination team conclusion
		http://www.niikm.ru/products/krypton/. It means that price of the Kr-Xe mixes is about 130 euro/ m^3 and the benefit from additional volume of the Kr-Xe mixes production is about 130,000 euro per year. This benefit was included in the investment analysis. Response 2 In connection with the project implementation old ASP No 9 was dismantled and ASPs No 6 and 8 were stopped and may be dismantled in the future (some equipment was dismantled already). Necessary information was added in Section B.2 and the possible revenues from the scrap sale were taken into account in the investment analysis.	
CAR 14. Common practice analysis of the PDD does not provide evidence explaining essential distinctions between similar activities that explain why the similar activities enjoyed certain benefits that rendered it economically attractive. Moreover consideration JI projects which are not similar with proposed subprojects ("reconstruction of Oxygen shop and steel continuous	29(b)	Response 1 The common practice analysis was corrected. Response 2 Common practice analysis of the PDD was reworked.	Conclusion on response 1 Common practice analysis of the PDD does not meet requirements of Tool used to demonstrate additionality. Please rework it. Conclusion on response 2

CAR/CL	Ref. to checklist question in Table 1	Summary of project owner response	Determination team conclusion
casting section") is not correct.			CAR 14 is closed. Common practice analysis of the PDD was reworked and approved by verifier.
CAR 15. Please provide the starting dates of JI projects in correct form (DD/MM/YYYY) and give appropriate references to demonstrate evidence of these events.	34(a)	Response 1 The starting dates were corrected in Section C.1 of the PDD and the supporting documents (the title list of contracts) were submitted to AIE.	Conclusion on response 1 CAR 15 is closed base on due amendments based to the revised PDD.
CAR 16. Please give an appropriate reference to demonstrate evidence of the starting date of the crediting period.	34(c)	Response 1 The appropriate references (# 6-10) were added in Section A.4.2 and the starting date of the crediting period was corrected in Section C.3 in accordance with the references.	Conclusion on response 1 CAR 16 is closed base on due amendments based to the revised PDD.
CAR 17. Please specify in the monitoring plan the procedures to be followed if expected data are unavailable.	36(b)(iii)	Response 1 The information about the troubleshooting procedures for all measuring parameters was added in Section D.2.	Conclusion on response 1 CAR 17 is closed base on due amendments based to the revised PDD.
CAR 18. Baseline emissions are estimated using conversion factor POE in contrast to project where direct measuring of consumption of energy resources is used to calculate project emissions. Please justify	36(f)(v)	Response 1 Baseline emissions are also estimated based on the energy resources (electricity and steam) consumption (please see formulae	Conclusion on response 1 The using of conversion factor POE is clear and transparent. The different approaches –"Using POE for baseline

CAR/CL	Ref. to checklist question in Table 1	Summary of project owner response	Determination team conclusion
conservativeness of the approach.		#15 and #22 in Section D.1.1.4 of the PDD). In the baseline the energy resources consumption is calculated using the term of POE (gases volume in the Process Oxygen Equivalent). Before and after subproject 1 implementation different gases (process oxygen, tonnage oxygen, nitrogen and others) were produced at ASB-1 and ASB-2 as described in Section A.4.2 of the PDD. And these gases were produced at different ASPs (ASP for nitrogen production, it was in before the subproject 1 implementation only, ASPs for process oxygen production, ASPs for tonnage oxygen production and ASPs for joint production of oxygen and nitrogen). Also please see Annex 2 of the PDD. For producing of each type of gases at the different ASPs the different values of energy resources consumption are used. For definition of energy resources consumption in the baseline is usually used specific factors. However in this case the energy resources separation for each of gases production is very difficult task especially for joint production of oxygen and nitrogen.	and not for project" is not balanced. The site-visit shown that the using of conversion factor POE is correctly used for estimation of baseline emission. Please make available for AIE the method of conversion factor POE calculation. <u>Conclusion on response 2</u> CAR 18 is closed. The method of conversion factor POE calculation is submitted to AIE. This method is confirmed by verifier as available for using in the project and baseline emissions calculation.

CAR/CL	Ref. to checklist question in Table 1	Summary of project owner response	Determination team conclusion
		Therefore the project participants used the term of POE which is defined using the conversion factors for each gas. These conversion factors were defined based on "The methodology for accounting of expenses and calculating the cost of products in the integrated production of air separation" developed by Scientific-Research Institute of Technical-Economic Research in 1975 and approved by Director of the NLMK TEK in 2002 (please see Annex 2 of the PDD, page 75). The similar situation is when total GHG emission is defined in tonnes of CO_2 equivalent. For definition of volume of POE was not used the volume of argon and rare gases production. It is conservative assumption. Response 2 The copy of the "The methodology for Accounting of Expenses and Calculating the Cost of Products in the Integrated Production of Air Separation" (Scientific-Research Institute of Technical-Economic Research, 1975) was submitted to AIE.	

CAR/CL	Ref. to checklist question in Table 1	Summary of project owner response	Determination team conclusion
CAR 19. Baseline emissions are estimated using total consumption of electricity and steam in ASC-1 and ASC-2 in contrast to project where only part of it connected with compressed air consumption in ASB-1 and ASB-2 is used to calculate project emissions. Please justify conservativeness of the approach.	36(f)(v)	Response 1 At the ASC-1 and ASC-2 the compressed air is produced for the supply on ASB-1 and ASB-2 and for output in NLMK networks. The specific factors of electricity and steam consumption for compressed air production for each ASC are calculated based on the actual data (please see Table E.1.1) and total compressed air production in formula #4 and formula #10, respectively. Then these factors and compressed air consumption at ASB-1 and ASB-2 are used for definition of electricity and steam consumption for the compressed air production supplied on the ASB-1 and ASB-2 *in both the project scenario and the baseline*. This is conservative approach because it enables to exclude electricity and steam consumption (and emission) which is spent for the production of compressed air supplied to the network. The using of current data and exclusion of the compressed air volume supplied in NLMK networks are conservative assumptions. And the using of the same specific factors based on actual data in both the project and baseline calculation allows avoiding the	Conclusion on response 1 There is not balance in provided formulae to estimate consumption of electricity and steam in ASC-1 and ASC-2 for project and baseline scenarios. This request will be discussed during site-visit. CAR 19 is closed based on due explanations and evidences which are provided by project participant - NLMK and the PDD developer during site-visit.

CAR/CL	Ref. to checklist question in Table 1	Summary of project owner response	Determination team conclusion
		uncertainty of energy resources consumption definition. Also please see the PP's response on CAR08 and assumptions of subproject 1 in Section B.1 of the PDD. The data of compressed air output in NLMK network (in Table Anx.2.2 of the PDD and on the spreadsheet "air-separate" in the file "20110826_ER_NLMK2_ver1.0_en") was shown for information only. This data was deleted in new version of the PDD and calculation file to avoid of illegibility.	
CAR 20. Please specify key assumptions used for monitoring plan elaboration and explain them in a transparent manner in the PDD.	36(f)(vii)	Response 1 The explanation of the key assumptions used for monitoring plan was added in Section D.1 of the PDD	Conclusion on response 1 CAR 20 is closed base on due amendments based to the revised PDD.
CAR 21. The requirement for data keeping is incorrectly reproduced in the PDD, Section D.1.	36(m)	Response 1 It was corrected.	Conclusion on response 1 CAR 21 is closed base on due amendments based to the revised PDD.
CAR 22. The values of Oxygen production and electricity consumption used for GHG estimation (subproject 1) do not correspond with actual initial data. Please check data using for subproject 1 and recalculate GHG emission reduction.	36(f)(v)	Response 1 The correct initial data was used and GHG emission reduction was recalculated. Also the refined data of capital cost (subproject 1) was used and cash flow of subproject 1 was recalculated.	Conclusion on response 1 CAR 22 is closed base on due amendments based to the revised PDD.

CAR/CL	Ref. to checklist question in Table 1	Summary of project owner response	Determination team conclusion
		New version files of the PDD, the emission reduction calculation and the investment analysis were submitted to AIE.	