DETERMINATION REPORT

CAMCO CARBON RUSSIA LIMITED

DETERMINATION OF THE

"Reconstruction of the OJSC "Nizhniy Tagil Iron and Steel Works" blast furnaces #5 and #6, Russian Federation"

BUREAU VERITAS CERTIFICATION

REPORT NO. RUSSIA/0033-2/2010, V.02

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Report No: RUSSIA/0033-2/2010 v.02

Final Determination Report on JI project
"Reconstruction of the OJSC "Nizhniy Tagil Iron and Steel Works" blast furnaces #5 and #6, Russian Federation"

Date of first issue:	Organizational unit:
01/12/2009	Bureau Veritas Certification Holding SAS
Client:	Client ref.:
Camco Carbon Russia Limited	Maxim Khamaza

Summary:

Bureau Veritas Certification was engaged by Camco Carbon Russia Limited to make the determination of the project "Reconstruction of the OJSC "Nizhniy Tagil Iron and Steel Works" blast furnaces #5 and #6, 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 guidelines 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, monitoring plan and other relevant documents, and consists of the following three phases: i) desk review of the project design document and particularly the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final determination report and opinion. The overall determination, from Contract Review to Determination Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

The first output of the determination process is a list of Clarification and Corrective Actions Requests (CL and CAR), presented in Appendix A, Table 5. Taking into account this output, the project proponent has revised its project design document.

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

Report No.:	Subject Group:
RUSSIA/0033-2/2010	JI

Project title:
"Reconstruction of the OJSC "Nizhniy Tagil Iron and Steel Works" blast furnaces #5 and #6, Russian Federation"

Work carried out by:
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Date of this revision:	Rev. No.:	Number of pages:
28/09/2010	02	85

Indexing terms:

Climate Change, Kyoto Protocol, JI, Emission Reductions, Verification,

Abbreviations

AIE	Accredited Independent Entity
BVC	Bureau Veritas Certification
BOFS	Basic Oxygen Furnace Shop
BF	Blast Furnace
CAR	Corrective Action Request
Camco	Camco Carbon Russia Limited
CL	Clarification Request
CO_2	Carbon Dioxide
CCO	Coke-chemical operations
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)
I	Interview
IE	Independent Entity
IETA/PCF	Validation and Verification Manual
IPCC	Intergovernmental Panel on Climate Change
IRR	Internal Rate of Return
JI	Joint Implementation
JISC	Joint Implementation Supervisory Committee
MoV	Means of Verification
NGO	Non Governmental Organization
OH	Open-Hearth
OHFS	Open-Hearth Furnace Shop
PDD	Project Design Document
NTMK	OJSC "Nizhniy Tagil Iron and Steel Works"
PP	Project Participant
RF	Russian Federation
TPRT	top pressure recovery turbine
tCO2e	Tonnes CO2 equivalent
UNFCCC	United Nations Framework Convention for Climate Change

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1 Introduction

Camco Carbon Russia Limited has commissioned Bureau Veritas Certification to determine its JI project "Reconstruction of the OJSC "Nizhniy Tagil Iron and Steel Works" blast furnaces #5 and #6, Russian Federation" (hereafter called the project) located in the city of Nizhniy Tagil, the Sverdlovsk region of the Russian Federation. Camco Carbon Russia Limited (hereafter called Camco) being the project participant and PDD developer coordinated the project and the determination process on behalf of the project participant OJSC "Nizhniy Tagil Iron and Steel Works" (hereafter called NTMK).

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 purpose of the determination is to provide an independent third party assessment of the project design. In particular, the project's baseline, the monitoring plan, 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 meet the stated requirements and identified criteria. Determination is a requirement for all JI projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of emission reduction units (ERUs).

UNFCCC criteria refer to Article 6 of the Kyoto Protocol, the JI rules and modalities and the subsequent decisions by the JI Supervisory Committee, as well as the host country criteria.

1.2 Scope

The determination scope is defined as an independent and objective review of the project design document (PDD), the project's baseline study (BLS) and monitoring plan (MP) and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements for Joint Implementation (JI) projects, the guidelines for the implementation of Article 6 of the Kyoto Protocol (Decision 9/CMP.1), in particular the verification procedure under the JI Supervisory Committee, and associated interpretations. Bureau Veritas Certification has, based on the recommendations in the Validation and Verification Manual (IETA/PCF), employed a risk based approach in the determination process, focusing on the identification of significant risks for project implementation and generation of ERUs.

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

1.3 GHG Project Description (quoted by PDD v.1.04)

Description of the enterprise

The Project Activity is to be implemented in City Nizhniy Tagil, the Sverdlovsk region of the Russian Federation and involves reconstruction of "NTMK" blast furnaces (BF) #5 and #6 with the introduction of resource saving technologies of molten iron production, with the employment of the up-to-date technology of molten iron production. The implementing company "NTMK" with the complete metallurgical cycle of steel production affiliates to "Evraz Group S.A.", one of the largest Russian metallurgical holdings and one of the world's largest vertically-integrated metallurgical and mining businesses holding. "NTMK" specializes in the manufacture of railway wheels and rails, products for construction purposes and pipe billet as well as the semi-finished steel products.

The key clients of "NTMK" are major Russian companies, such as OJSC "Russian railways" in the railway sector, "ChTPZ Group" in the pipe sector, and the number of enterprises in the construction industry.

"NTMK" primary production chain includes coke-chemical, blast furnace and steel-smelting operations and a series of rolling mills.

During the "NTMK" blast furnace operations (BFS) the vanadium-containing iron-ore raw material is processed and two kinds of molten iron are produced: standard steelmaking molten iron and the natural alloy vanadium molten iron. "NTMK" steelmaking operations included basic oxygen furnace shop (BOFS) and open-hearth furnace shop (OHFS).

OHF production technology is the conventional technology of steel production in Russia. The state program titled "Technical re-equipment and development of metallurgy in Russia planned for 1993-2000" stated the most important issues on the reconstruction of enterprises' in the ferrous metallurgy of Russia. Its completion level was less than 30% and it was funded mostly at the metallurgical companies' own expenses (the budget funds amounted to 2% only).Construction of new manufacturing capacities for the production of cast pipe billet at OJSC "ZSMK" and OJSC "NLMK", mill "2000" and BOF shop at OJSC "MMK" was realized in compliance with this program. But efficiency increase of blast furnaces' operations was not specified in the list of priority trends of enterprises' reconstruction.

Since 1993, the OHF operations at "NTMK" have been gradually replaced with the production of steel in the oxygen converters, the less expensive and environmentally effective process. Decision on the final OHFS shut down was made in April of 2009.

Project purpose

The goal of this proposed Joint Implementation (JI) project is to apply more resource saving technologies of molten iron production through the reconstruction of "NTMK" blast furnaces (BF) #5 and #6 and thus significantly reduce emissions associated with molten iron. Project realization allowed shutting down BF ## 2, 3, reducing the molten iron production at BF ## 1, 4 and ensuring the production of molten iron, needed for "NTMK" steelmaking operations, by a more efficient technique with lower fuel consumption. This results in significant reduction of negative environmental impact due to "NTMK" operations in the city of Nizhniy Tagil.

The project area is limited to the Ural federal district in the territory of Sverdlovsk Region.

Current status

Molten iron, which is produced in the blast furnace shop (BFS) from sinter and pellets, is used as the raw material for steel making at the "NTMK" basic oxygen furnace (BOFS) and open-hearth furnace (OHFS) shops. By the moment of the project realization commencement, five blast furnaces (BF) ## 1-5 with the following useful volumes: BF #1 - 1242m3; BF #2 - 1242m3; BF #3 - 1513m3; BF #4 - 1513m3; BF #5 - 1700m3 - were operated at the "NTMK" BFS. BF #6 with useful volume 2700m3 was suspended in 1995, due to significant drop in demand for the integrated plant products, and afterwards commissioned due to the project realization.

Each one of the reconstructed BF's (#5 and #6) has the working volume of 2200m3. The BF includes the furnace itself, system of iron-ore raw material charging, stove block, casting yard and the system of blast furnace gas extraction and cleaning.
In 2008 "NTMK" produced 5.2 mln tons of steel and over 4.6 mln tons of rolled metal products.

Baseline scenario
The flow process of "NTMK" with the blast furnace operations represents the usual technological processes of the metallurgical company and is meant for the production of molten iron from iron ore raw material.

The most likely scenario for providing the "NTMK" with the of molten iron, comparable in quality with the molten iron produced as a result of project operations without the JI project (baseline scenario) is continuation of the existing practices, including further continuation of BF #5 operations and BF #6 remains suspended. This scenario represents the usual "NTMK" activity (business-as-usual) under the Russian legislation, does not require significant investments for the BF reconstruction, and only the 1st category capital repairs at BF ##1, 4 and 5 during the years of 2005-2012 will be needed. According to this scenario, the molten iron production is ensured at the level, which corresponds to the project scenario.

More details on the baseline scenario are provided in PDD section B1.

Project scenario
The project is aimed at reconstruction of "NTMK" blast furnaces (BF) #5 and #6 with the introduction of resource saving technologies of molten iron production. The project intends to completely shut down BF # 2, 3, reduce the molten iron production at BF ##1, 4 and ensure the production of molten iron, needed for "NTMK" steelmaking operations, by a more efficient technique.

The general operational workflow of the blast furnace and auxiliary shops and subdivisions – suppliers of the BF operations, does not change under the project. The coke, made from

the coal charging material during coke-chemical operations, is used as the fuel for the BF as well as the natural gas. Besides, under the project, the blast furnaces should be supplied with the energy carriers required for ensuring the normal molten iron production workflow: oxygen, hot blast furnace blow, water, electric power and steam. Since the blast furnace is operated under pressure, installation of the top pressure recovery turbine (TPRT) at the furnace becomes possible, which uses the excessive pressure of the blast furnace gas for secondary power generation.

According to the predictive analysis of Technical Direction of "NTMK", the average project capacity of the BF #5 and BF #6 (project scenario) in 2009-2012 is about 4.5 mln tons per annum, which is lower that the production opportunities for the molten iron production in the BFS according to the baseline – 4.7 mln tons per annum.

The assessed data of BF #5 and #6 molten iron production volume in 2009-2012 made by the "NTMK" engineering department is the basis for the middle-term forecasting of the "NTMK" operations presented in PDD Section B.1 and taken as the level, which corresponds to the project and baseline scenarios.

Parameter	Unit	2009	2010	2011	2012
BF #5 molten iron production	t/year	2 154 000	2 266 000	2 300 000	2 340 000
BF #6 molten iron production	t/year	2 086 000	2 230 000	2 250 000	2 340 000
Total	t/year	4 240 000	4 496 000	4 550 000	4 680 000

Realization of this project results in the reduction of negative environmental impact caused by "NTMK" operations in the city of Nizhniy Tagil due to the introduction of the up-to-date system of BF aspiration system. Meanwhile the volume of the BFS contaminants' emissions before the project realization was meeting the requirements of the Russian environmental legislation.

The following project's outputs are expected:

- ✓ Change of furnace line (sectional shape) at BF's resulting in the total raw resources saving;
- ✓ Reduction of coke consumption for molten iron production in BF and for secondary electricity generation. The coke consumption at the reconstructed BF #5 and #6 was reduced to 450kg/t of molten iron as compared to the baseline 495 kg/t on the average for BF # #1-5;
- ✓ The estimated annual emission reduction is 276,557 (for the year 2008); 434,936 (for the year 2009); 461,641 (for the year 2010); 467,032 (for the year 2011); 480,989 (for the year 2012) tones of CO2 equivalent;
- ✓ Reconstruction and putting into operation of the BF#5, BF#6 with the introduction of resource saving technologies of molten iron production and abandoning the use of out-of-date BF ## 2, 3 with reducing the molten iron production at BF # 1 - #4;
- ✓ Construction and putting into operation of dust catching unit as part of the Central Bell Less Top with rotary hopper and modern industrial vacuum cleaners, enables the collection and venting of the exit gases, formed at the complex site. This unit will

facilitate the cleaning of the smoke gases from solid particles with carbon bearing raw materials prior to their emission into the atmosphere, which will result in significant reduction of negative environmental impact caused by the enterprise operations in the Sverdlovsk region;

- ✓ Construction of top-pressure recovery turbine (TPRT) at BF #6 in the System of blast furnace gas extraction and cleaning, which allows to use of furnace gas excess pressure for additional electricity generation for internal usage and thus decrease of electricity consumption;
- ✓ Installation of the modern shaftless Kalugin stoves at the Stove blocks, which allows enhancing natural gas combustion and decreasing CO2 emission in the exhausting gases.

The project is expected to provide the reduction of GHG emissions by 2,121,155 tCO2e over the crediting period 2008-2012.

CAR 1 was closed following determination of the PDD version 2.0.

Project background and description
In 1995, due to significant drop in demand for the integrated plant products, BF #6 was suspended and commissioned only as a result of this project realization.
Until recently, "NTMK" steelmaking operations included basic oxygen furnace shop (BOFS) and open-hearth furnace shop (OHFS). Starting 1993, the OHF operations at "NTMK" are being gradually replaced with the production of steel in the oxygen converters, as this is less expensive and environmentally friendlier process. Decision on the permanent OHFS liquidation was made in April of 2009.
The Board of Directors of OJSC "Nizhniy Tagil Iron and Steel Works" decided to conduct a feasibility study on the first stage (2002-2004) of the modernization project ("Reconstruction of BF#6 at OJSC "Nizhniy Tagil Iron and Steel Works"") in June 2002. The preliminary work on the project was commenced in 2002 with account given to the opportunity of the use of Kyoto protocol JI mechanisms during the project realization.
Glavgosexpertiza of Russian Federation approved the design documents in May 2007.

The project consists of two stages. The first stage includes Reconstruction of BF #6. Reconstruction of BF #6 was commenced in 2002 and completed in 2004. The second stage covers reconstruction of the BF#5 (starting date 2004 and commissioning date 2006). Project implementation schedule is presented in PDD Section A.4.2.

1.4 Determination team

The determination team consists of the following personnel:

Vera Skitina
Bureau Veritas Certification – Team Leader, Lead verifier

Leonid Yaskin
Bureau Veritas Certification – Team Member, Lead verifier

Flavio Gomes
Bureau Veritas Certification – Operational manager

Ivan Sokolov
Bureau Veritas Certification – Internal Technical Reviewer

2. Methodology

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

The determination consisted of the following three phases:

i) desk review of the project design document and the baseline and monitoring plan;
ii) on-site assessment on 21/10/2009 and on-line interactions with PDD developer throughout the determination process;
iii) resolution of outstanding issues (ref. to Appendix A Table 5 with CAR's and CL's) and the issuance of the final determination report and opinion.

In order to ensure transparency, a determination protocol was customized for the project, according to the Determination and Verification Manual (IETA/PCF).

The protocol shows, in a transparent manner, criteria (requirements), means of verification and the results from validating 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 independent entity will document how a particular requirement has been validated and the result of the determination.

The original determination protocol consists of five tables. The different columns in these tables are described in Figure 1.

The completed determination protocol is enclosed in Appendix A to this report. It consists of four tables. Table 3 for "Baseline and Monitoring Methodologies" is omitted because the project participants established their own baseline and monitoring approach that is in accordance with appendix B of the JI Guidelines and because the questions regarding the used approach are presented in Table 2.

Determination Protocol Table 1: Mandatory Requirements			
Requirement	**Reference**	**Conclusion**	**Cross reference**
The requirements the project must meet.	Gives reference to the legislation or agreement where the requirement is found.	This is either acceptable based on evidence provided (**OK**), a **Corrective Action Request (CAR)** or a **Clarification Request (CL)** of risk or non-compliance with stated requirements. The CAR's and CL's are numbered and presented to the client in the Determination Report.	Used to refer to the relevant protocol questions in Tables 2, 3 and 4 to show how the specific requirement is validated. This is to ensure a transparent determination process.

Determination Protocol Table 2: Requirements checklist				
Checklist Question	**Reference**	**Means of verification (MoV)**	**Comment**	**Draft and/or Final Conclusion**
The various requirements in Table 1 are linked to checklist questions the project should meet. The checklist is organized in several sections. Each section is then further sub-divided. The lowest level constitutes a checklist question.	Gives reference to documents where the answer to the checklist question or item is found.	Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.	The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.	This is either acceptable based on evidence provided (**OK**), or a **Corrective Action Request (CAR)** due to non-compliance with the checklist question. (See below). **Clarification Request (CL)** is used when the determination team has identified a need for further clarification.

Determination Protocol Table 3: Baseline and Monitoring Methodologies				
Checklist Question	**Reference**	**Means of verification (MoV)**	**Comment**	**Draft and/or Final Conclusion**
The various requirements of baseline and monitoring methodologies should be met. The checklist is organized in several sections. Each section is then further sub-divided. The lowest level constitutes a checklist question.	Gives reference to documents where the answer to the checklist question or item is found.	Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.	The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.	This is either acceptable based on evidence provided (**OK**), or a **Corrective Action Request (CAR)** due to non-compliance with the checklist question. (See below). **Clarification Request (CL)** is used when the determination team has identified a need for further clarification.

Determination Protocol Table 4: Legal requirements				
Checklist Question	**Reference**	**Means of verification (MoV)**	**Comment**	**Draft and/or Final Conclusion**
The national legal requirements the project must meet.	Gives reference to documents where the answer to the checklist question or item is found.	Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.	The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.	This is either acceptable based on evidence provided (**OK**), or a **Corrective Action Request (CAR)** due to non-compliance with the checklist question. (See below). **Clarification Request (CL)** is used when the determination team has identified a need for further clarification.

Determination Protocol Table 5: Resolution of Corrective Action and Clarification Requests			
Report corrective action and clarifications requests	**Ref. to checklist question in tables 1/2/3/4**	**Summary of project owner response**	**Determination conclusion**
If the conclusions from the Determination are either a Corrective Action Request or a Clarification Request, these should be listed in this section.	Reference to the checklist question number in Tables 1-4 where the Corrective Action Request or Clarification Request is explained.	The responses given by the Client or other project participants during the communications with the determination team should be summarized in this section.	This section should summarize the determination team's responses and final conclusions. The conclusions should also be included in Tables 1-4 under "Final Conclusion".

Figure 1 Determination protocol tables

2.1 Review of Documents

Bureau Veritas Certification (BVC) signed the contract with Camco Carbon Russia Limited on 19/08/2009 and received Project Design Document (PDD) Version 1.0 dated 01/09/2009 together with supporting documentation. The completeness check revealed some deviations of PDD from the JISC PDD Form. On 02/09/2009, BVC received the finally remade PDD Version 1.01 dated 02/09/2009. The PDD was made publicly available for comments on UNFCCC JI site from 04 September 2009 till 03 October 2009.

PDD Version 1.01 and supporting documentation as well as additional background documents related to the project design, baseline, and monitoring plan, such as Kyoto Protocol, host Country laws, JI guidelines, JI Guidance on criteria for baseline setting and monitoring, and Tool for demonstration and assessment of additionality were reviewed.

The first deliverable of the document review was the Draft Determination Report (DDR) version 1 dated 28/09/2009 with 32 CAR's and 4 CL's.

Before the site visit, BVC issued DDR Versions 02 and 03 issued on 14/10/2009 and 16/10/2009 respectively, which contained 2 additional CAR's and 1 CL. Following the site visit held on 21/10/2009, BVC issued DDR Versions 04 dated 26/102009, which contained 1 additional CAR. One CAR was withdrawn.

On 18/11/2009, Camco submitted the amended version 1.02 of PDD together with summaries of responses to the verifiers' requests. The Camco feedback was principally accepted by BVC. Following that, Camco issued the PDD Version 1.03 dated 26/11/09, and then Version 1.04 dated 30/11/09, which contained minor refinements. BVC reviewed these versions and found them acceptable and maintaining the earlier acceptance by BVC of Camco responses.

Bureau Veritas Certification issued DDR version 4 dated 26/11/2009 with conclusions about the closure of CAR's and CL's.

Draft Determination Report Version 1 was issued 01/12/2009 with CAR 1 not closed.

The determination findings presented in this Final Determination Report Version 02 relate to the project as described in the published PDD version 1.01 dated 02/09/2009, the PDD version 1.04 dated 30/11/2009 and the final PDD version 2.0 dated 28/09/2010.

2.2 Follow-up Interviews

Bureau Veritas Certification verifier Vera Skitina conducted a visit to the project site on 21/10/2009. On-site interviews with the project participant OJSC "Nizhniy Tagil Iron and Steel Works" and the PDD Developer Camco were conducted to confirm the selected information and to clarify some issues identified in the document review. The interview topics are listed in Table 6. The interviewees are listed in Section 6 References.

Following the submission of the DDR Version 1, on-line interactions between Camco and Bureau Veritas Certification took place to resolve pending CAR's and CL's.

Table 6 Interview topics

Date / Interviewed organization	Interview topics
21/10/2009 NTMK Camco	➢ NTMK current Investment Programme ➢ Project management organisation ➢ Implementation schedule ➢ Design documentation ➢ Baseline scenario ➢ Project scenario ➢ Reasoning for reconstruction BFS with BF#5 and BF#6 ➢ Resource saving effects ➢ Technical documentation ➢ Emission calculation ➢ Investment issues ➢ Common practice issues ➢ QC & QA Procedures ➢ Environmental Impact Assessment

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 followed on by the project participants for Bureau Veritas Certification positive conclusion on the project design.

Corrective Actions Requests (CAR) are issued, where:

i) there is a clear deviation concerning the implementation of the project as defined the PDD;
ii) requirements set by the Methodological Procedure or qualifications in a verification opinion have not been met; or
iii) there is a risk that the project would not be able to deliver high quality ERUs.

Clarification Requests (CL) are issued where

iv) additional information is needed to fully clarify an issue.

DDR Version 1.03 summarising Bureau Veritas Certification's findings of the desk document review and project site visit was submitted to Camco on 26/11/2009. The findings identified have been 34 Corrective Action Requests and 5 Clarification Requests.

The amendments made by Camco to the PDD Version 1.01 and reported in PDD Version 1.04 dated 30/11/2009 satisfactorily addressed the verifiers' requests. As a result, the present Determination Report Version 1 was issued on 01/12/2009 and sent, together with the final PDD Version 1.04, to BVC Internal Technical Reviewer (ITR) for review.

To guarantee the transparency of the determination process, the CAR's and CL raised are summarized in Appendix A, Table 5.

No comments on the PDD were received during the public review period.

3 Determination Findings

In the following sections, the findings of the determination are presented for each determination subject as follows:

i) the findings from the desk review of the original project design document and the findings from interviews during the site visit are summarized. A more detailed record of these findings can be found in the Appendix A Determination Protocol.
ii) where Bureau Veritas Certification had identified issues that needed clarification or that represented a risk to the fulfillment of the determination protocol criteria or the project objectives, a Clarification or Corrective Action Request, respectively, has been issued. The Clarification and Corrective Action Requests are stated in the in Appendix A Determination Protocol.
iii) where Clarification and Corrective Action Requests have been issued, the response by the project participants to resolve these requests is summarized in Appendix A Table 5.
iv) the conclusions of the determination are presented consecutively.

3.1 Project Design

The purpose of the project is to apply the more effective resource saving technologies of molten iron production under the reconstruction the existed BF # 5, 6. The project intends to completely shut down BF # 2, 3, reduce the molten iron production at BF ##1, 4 and ensure the production of molten iron, needed for "NTMK" steelmaking operations, by a more efficient technique and thus to significantly reduce emissions associated with molten iron production.

The project of "NTMK" is the only project in the Ural Federal District, among the regional metallurgy companies, which can be referred to the projects oriented on the construction or reconstruction of molten iron production facilities.

Under the project scenario, resource saving measures would result in reduction of coke consumption for molten iron production in BF and for secondary electricity generation. The coke consumption at the reconstructed BF #5 and #6 was reduced to 450kg/t of molten iron as compared to the baseline 495 kg/t on the average for BF # #1-5.

The project is expected to provide the reduction of GHG emissions by 2,121,155 tCO2e over the crediting period 2008-2012.

The identified areas of concern as to Project Design, PP's response and BV Certification's conclusion are described in Appendix A Table 5 (refer to CAR 01, CAR 02, CAR 03, CAR04, CAR 05, CAR 06 and CL 01).

CAR 1 was closed following determination of the PDD version 2.0 dated 28/09/2010.

3.2 Baseline and Additionality

The baseline is set on the basis of a JI specific approach in accordance with appendix B of JI guidelines and the JISC guidance on criteria for baseline setting and monitoring.

After screening of six identified alternatives, three alternative scenarios were selected as viable, namely:
- preservation of the current situation, i.e. continuation of BF #5 operations and BF #6 remains suspended;
- BF #6 reconstruction without reconstructing BF #5 and carbon financing;
- the project activity without JI registration.

All scenarios are in compliance with all mandatory applicable legal and regulatory requirements.

Continuation of the existing practices including further use of the blast furnace shop capacities at "NTMK" and does not require significant investments for the BF reconstruction, and only the 1st category capital repairs at BF ##1, 4 and 5 during the years of 2005-2012 will be needed. The second and third alternatives were proven to be not financially and economically feasible. This follows from the investment analysis carried out in the frame of the additionality proof. Hence, the first alternative was identified as most plausible scenario thus representing the baseline scenario.

To prove the project additionality the CDM Methodological "Tool for the demonstration and assessment of additionality" (Version 05.2) was applied. Its step 1 -Identification of alternatives to the project and step 2 – Investment analysis, in fact, repeat the steps used to set the baseline. It is shown by step 2 that the project NPV is less than the established baseline NPV, i.e. the project activity is not economically/financially attractive (without ERU sale). This conclusion is confirmed by a complementary sensitivity analysis. Under step 3, a common practice analysis is carried out to have proven that similar activities cannot be widely observed and the proposed project activity is not a common practice. Thus, the additionality analysis demonstrates that project emission reductions are additional to any that would otherwise occur.

The key additionality proofs were the results of the investment comparison and sensitivity analyses. All the input data for the financial analysis were not presented in the PDD as required by the Tool. Instead the spreadsheet with the analysis was made available for the verifiers, and Bureau Veritas Certification will submit it to JISC at the final determination as the supporting documentation.

The identified areas of concern as to Baseline and Additionality, PP's responses and BV Certification's conclusions are described in Appendix A Table 5 (refer to CAR 07, CAR 08, CAR 09, CAR 10, CAR 11, CAR 12, CAR 13, CAR 14, CAR 15, CAR 16, CAR 17, CAR 18, CAR 19, CAR 20, CAR 21, CL 02, CL 03).

The identified area of concern as to Project Duration / Crediting Period, PP's response and BV Certification's conclusion are described in Appendix A Table 5 (refer to CAR 22, CAR 23, CAR 24).

3.3 Monitoring Plan

The monitoring plan is established based on a JI specific approach, in accordance with JISC's Guidance on criteria for baseline setting and monitoring, Part B (Version 02) [3].

All categories of data to be collected in order to monitor project and baseline emissions (Option 1) as well as formulae for processing the collected data and calculation of GHG emissions are described in required details in PDD Annex 2. Step-by-step application of the used methodologies to the project activity is described in PDD Section D and Annex 3 including monitoring procedures, formulae, parameters, data sources etc.

The project and baseline emissions subject to monitoring relate to the molten iron production process, the fuel combustion, and the electricity, oxygen, steam, blast air and recycle water consumption as at raw materials stage preparation and for molten iron production (direct CO2 emissions at "NTMK") and indirect CO2 emissions at the RF UES power grids during generation of energy, consumed for molten iron production.

Collection of data required for estimation of GHG emission reductions is planned to be performed to high industry standard and the best practice of monitoring fuel and material consumption.

A multilayer operational and management structure that the project participant will implement in order to monitor emission reduction is clearly described in the PDD. Monitoring related quality control and quality assurance procedures are well detailed.

Monitoring related quality control and quality assurance procedures are backed up by the existing "NTMK" reporting system under the Quality Management Systems certified to ISO 9001.

The identified area of concern as to Monitoring Plan, PP's response and BV Certification's conclusion is described in Appendix A Table 5 (refer to CAR 25, CAR 26, CAR 27, CAR 28, CAR 29, CAR 30, CAR 31, CAR 32, CAR 33, and CL 04).

3.4 Calculation of GHG Emissions

Formulae used for calculation of project baseline and project are presented in PDD Sections B, D and E.

Input data for calculations and the calculations per se are presented on the spreadsheet made available to the verifiers by Camco. The verifiers checked the calculations and found them accurate. The results are summarised in Section E.

The estimated GHG emission reduction is 2,121,155 tCO2e over the crediting period 2008-2012.

The estimated annual emission reduction is 276,557 (for the year 2008); 434,936 (for the year 2009); 461,641 (for the year 2010); 467,032 (for the year 2011); 480,989 (for the year 2012) tCO2e.

The identified areas of concern as to Calculation of GHG Emissions, PP's response and BV Certification's conclusion are described in Appendix A Table 5 (refer to CAR 34, and CL 05).

3.5 Environmental Impacts

The project has all permissions, limits and license required by the Russian environmental legislation for the stage of technical design and construction. The evidence is presented in PDD Section F and by the list of documents obtained by the verifier at the site visit (refers to Section 6 References).

3.6 Comments by Local Stakeholders

No comments from local stakeholders were received.

No areas of concern as to Comments by Local Stakeholders are identified.

4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

In accordance with the Section E "Verification procedure under the Article 6 Supervisory Committee" of the JI guidelines, Bureau Veritas Certification published the PDD Version 1.01 on UNFCCC JI site on 04 September 2009 and invited comments within 03 October 2009 by Parties, stakeholders and UNFCCC accredited observers. No comments have been received.

5 DETERMINATION OPINION

Bureau Veritas Certification has been engaged by Camco Carbon Russia Limited to perform a determination of the JI project "Reconstruction of the OJSC "Nizhniy Tagil Iron and Steel Works" blast furnaces #5 and #6, Russian Federation". The determination was performed on the basis of UNFCCC criteria for JI projects, in particular the verification procedures under the JI Supervisory Committee, as well as host country criteria and the criteria given to provide for consistent project operations, monitoring and reporting.

The determination is based on the information made available to us and on the engagement conditions detailed in this report. The determination has been performed using a risk-

based approach as described above. The only purpose of the report is its use for the formal approval of the project under JI mechanism. Hence, Bureau Veritas Certification cannot be held liable by any party for decisions made or not made based on the determination opinion, which will go beyond that purpose.

The determination consisted of the following three phases: i) a desk review of the project design and the baseline and monitoring plan; ii) follow-up on-line interviews with the project participant and PDD developer; iii) the issuance of the determination report and opinion.

The review of the project design documentation, the subsequent follow-up interviews, and the resolution of the Corrective Action Requests have provided Bureau Veritas Certification with the sufficient evidences to determine the fulfilment of the above stated criteria and to demonstrate that the project is additional.

The investment analysis and common practice analysis demonstrate that the proposed project activity is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. Given that it is implemented and maintained as designed, the project is likely to achieve the estimated amount of emission reductions.

It is our opinion that the project as described in the Project Design Document, Version 2.0 dated 28/09/2010 meets all the relevant UNFCCC requirements for the determination stage and the relevant host Party criteria.

Bureau Veritas Certification thus recommends this project for the formal approval by the Russian Federation as the JI project in accordance with the RF Government Decree # 843 dated 28/10/2009.

Bureau Veritas Certification Holding SAS
28 September 2010

Vera Skitina – Team Leader, Lead verifier

Leonid Yaskin – Team Member, Lead Verifier

Flavio Gomes – Operational Manager

Bureau Veritas Certification Holding SAS

BUREAU VERITAS
CERTIFICATION
Reviewed
Init
Date: 08/10/2010

6 REFERENCES

Reviewed document or Type of Information referred to in Appendix A and available before the site visit

1	"Reconstruction of the OJSC "Nizhniy Tagil Iron and Steel Works" blast furnaces #5 and #6, Russian Federation", PDD Version 1.04 dated 30/11/2009.
2	Guidelines for Users of the Joint Implementation Project Design Document Form/Version 04, JISC.
3	JISC Guidance on criteria for baseline setting and monitoring. Version 02.
4	Glossary of Joint Implementation terms. Version 02, JISC.
5	Tool for the demonstration and assessment of additionality. Version 05.2, CDM.
6	"Regulation of realization of Article 6 of Kyoto Protocol to United Nation Framework Convention on Climate Change". Approved by the RF Government Decree # 843 of 28/10/2009 "About measures on realization of Article 6 of Kyoto Protocol to United Nation Framework Convention on Climate Change".
7	Excel spreadsheet with calculation of emission reduction. Provided by PDD Developer.
8	Excel spreadsheet with calculation of investment analysis. Provided by PDD Developer.

Reviewed document or type of information obtained at the site visit

9	Technical Protocol of Board of Directors of "NTMK" meeting "Decision about the project of BF#6 reconstruction (first stage)" dated 03.06.02.
10	Technical Protocol of the conference concerning the BF#5 reconstruction dated 14.08.03.
11	Technical Protocol of the conference concerning the BF#6 reconstruction dated 05.07.01.
12	Evraz Holding. Order #682 "About an installation a working group to JI Project realization in Evraz Holding "dated 28.09.05.
13	Common Environmental Program "NTMK" for 2001-2005, June 2001.
14	Positive Safety conclusion of State Russian Safety Board Rostekhnadzor to BF#6 of "NTMK", #04-15/7637 dated 27.08.08.
15	Positive State Opinion on the the BF Complex reconstruction #06-199/1u dated 28/09/05.
16	Permit to commissioning of the BF#5 issued by Local State Authority of the city Nizhny Tagil in 19.05.07.
17	Document confirming final acceptance of executed reconstruction work at BF#6 issued by the acceptance board, dated 2003.

18	Contract to BFA/16-01.2003, dated 14.02.08. Training of the "NTMK" personnel.
19	The Environmental Impact Assessment (OVOS); document prepared by the "Nikomproekt" design institute (T-69735-P32) for BF #6 reconstruction, and by the LLC 'Metpromproekt" (MPP-01-RP-PZ.3) for BF #5 reconstruction project.
20	Training Programs for BF - maintenance operating personnel.
21	Environmental permissions and limits issued for "NTMK" by Interregional Department of Rostekhnadzor for Ural Federal Okrug. All valid on the date of the site visit.
22	State statistic environmental form 2-tp (air) of "NTMK" in 2008.
23	Technical Data of the cast iron volume production in the years 2001-2003 and 2008.
24	Technical Data of the daily cast iron volume production for 26/10/09.
25	Technical restricted plan for BF's in BFS of "NTMK".
26	A memo of Evraz Holding about corporate threshold of 20% for the investments in to corporate projects, dated25.03.02.
27	Quality Certificate of cast iron produced at BF#5, "NTMK", August 2009.
28	Quality Certificate of fuel liquid oil for NTMK, Sr4ptember 2009.
29	Monthly Technical Reports of BFS, "NTMK", 2001-2003, 2008.
30	Measuring appliances records of BFS, "NTMK".

Persons interviewed during site visit on 07/10/09 at "NTMK"

1	S.Druzhynin– "NTMK" Main Engineer
2	S.Permyakov – "NTMK" Head of Department for environment protection
3	M.Tkachenko - "NTMK" Deputy Head of Department for environment protection, Coordinator of JI project
4	Y.Khamlov – Main Specialist in agglomerative and blast furnace production
5	M.Gel'manov –Head of BFS
6	E.Kotlyagin –Production Director
7	O.Knittel – BFS supervising foreman
8	E.Rybakova - BFS Economist
9	M.Shtan'ko – Economist of Economic Bureau of BFS and steel production, Planning and Economic Department of Economic Directorate
10	V.Predein - Chief of NTMK Central Electrotechnology Laboratory
11	S.Sladkov – Chief of Gas production unit

12	E.Dudin – Chief of Centralization of control Laboratory
13	I.Kurshin – Deputy Head of technical automatic production unit
14	N.Pshenichnikov – Senior supervising foreman of technical automatic production unit
15	V.Rostovshikov – Chief of Energy Saving and Perspective Development Department
16	D.Shikhaleev – Chief Manager of Project Management Office
17	Oleg Ryumin – PDD developer, Camco Carbon Russia Limited specialist

APPENDIX A: COMPANY JI PROJECT DETERMINATION PROTOCOL

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

1. REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
1. The project shall have the approval of the Parties involved.	Kyoto Protocol Article 6.1 (a)	**CAR 01**. The project has no approval of the Host Party. **CAR 01** is closed based on determination of PDD version 2.0. Verifiers' Note: JISC Glossary of JI terms/Version 01 defines the following: a) At least the written project approval(s) by the host Party(ies) should be provided to the AIE and made available to the secretariat by the AIE when submitting the determination report regarding the PDD for publication in accordance with paragraph 34 of the JI guidelines; (b) At least one written pro-	Table 2, Section A.5.

1. REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
		ject approval by a Party involved in the JI project, other than the host Party(ies), should be provided to the AIE and made available to the secretariat by the AIE when submitting the first verification report for publication in accordance with paragraph 38 of the JI guidelines, at the latest.	
2. Emission reductions, or an enhancement of removal by sinks, shall be additional to any that would otherwise occur.	Kyoto Protocol Article 6.1 (b)	OK	Table 2, Section B.2
3. The sponsor Party shall not acquire emission reduction units if it is not in compliance with its obligations under Articles 5 & 7.	Kyoto Protocol Article 6.1 (c)	OK	N/A
4. The acquisition of emission reduction units shall be supplemental to domestic actions for the purpose of meeting commitments under Article 3.	Kyoto Protocol Article 6.1 (d)	OK	N/A
5. Parties participating in JI shall designate national focal points for approving JI projects and have in place national guidelines and procedures for the approval of JI projects.	Marrakech Accords, JI Modalities, §20	OK	The Russian national focal point is the Ministry of Economic Development. The Russian national guidelines and procedures are estab-

1. REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
			lished by the "Regulation of realization of Article 6 of Kyoto Protocol to United Nation Framework Convention on Climate Change". Approved by the RF Government Decree # 843 of 28/10/2009 "About measures on realization of Article 6 of Kyoto Protocol to United Nation Framework Convention on Climate Change".
6. The host Party shall be a Party to the Kyoto Protocol.	Marrakech Accords, JI Modalities, §21(a)/24	OK	Russia has ratified the Kyoto Protocol by Federal Law N 128-FL dated 04/11/04.
7. The host Party's assigned amount shall have been calculated and recorded in accordance with the modalities for the accounting of assigned amounts.	Marrakech Accords, JI Modalities, §21(b)/24	OK	The Russian Federation's assigned amount has been calculated and recorded In the 4th National Communication dated 12/10/06.

1. REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
8. The host Party shall have in place a national registry in accordance with Article 7, paragraph 4.	Marrakech Accords, JI Modalities, §21(d)/24	OK	Russian Federation has established the GHG Registry by the RF Government Decree N 215-p dated 20/02/06.
9. Project participants shall submit to the independent entity a project design document that contains all information needed for the determination.	Marrakech Accords, JI Modalities, §31	OK	Camco Carbon Russia Limited has submitted a PDD to Bureau Veritas Certification, which contains all information needed for determination.
10. The project design document shall be made publicly available and Parties, stakeholders and UNFCCC accredited observers shall be invited to, within 30 days, provide comments.	Marrakech Accords, JI Modalities, §32	OK	The PDD Version 1.01 dated 02/09/2009 was made publicly available for comments on UNFCCC JI site from 04 September 2009 till 03 October 2009.
11. Documentation on the analysis of the environmental impacts of the project activity, including transboundary impacts, in accordance with procedures as determined by the host Party shall be submitted, and, if those impacts are considered significant by the project participants or the host Party, an environmental impact as-	Marrakech Accords, JI Modalities, §33(d)	OK	Table 2, Section F

1. REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
sessment in accordance with procedures as required by the host Party shall be carried out.			
12. The baseline for a JI project shall be the scenario that reasonably represents the GHG emissions or removal by sources that would occur in absence of the proposed project.	Marrakech Accords, JI Modalities, Appendix B	OK	Table 2, Section B.2
13. A baseline shall be established on a project-specific basis, in a transparent manner and taking into account relevant national and/or sectoral policies and circumstances.	Marrakech Accords, JI Modalities, Appendix B	OK	Table 2, Section B.2
14. The baseline methodology shall exclude to earn ERUs for decreases in activity levels outside the project activity or due to force majeure.	Marrakech Accords, JI Modalities, Appendix B	OK	Table 2, Section B.2
15. The project shall have an appropriate monitoring plan.	Marrakech Accords, JI Modalities, §33(c)	OK	Table 2, Section D
16. A project participant may be: (a) A Party involved in the JI project; or (b) A legal entity authorized by a Party involved to participate in the JI project.	JISC "Modalities of communication of Project Participants with the JISC" Version 01, Clause A.3	The Russian project participant will be authorized by the Host Party through the issuance of the approval for the project. Conclusion is pending a follow-up on CAR 01. Refer to Verifiers' Note in 1 above. Closed. The Russian project participant OJSC	Table 2, Section A

1. REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
		"Nizhniy Tagil Iron and Steel Works" was authorized by the issued Russian LoA.	

Table 2 Requirements Checklist

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
A. General Description of the project					
A.1 Title of the project					
A.1.1. Is the title of the project presented?	1,2	DR	The title of the project is: "Reconstruction of the OJSC "Nizhniy Tagil Iron and Steel Works" blast furnaces #5 and #6, Russian Federation". The indicated Sectoral Scope is (9) Metal production.		OK
A.1.2. Is the current version number of the document presented?	1,2	DR	The current version number of PDD is 1.04. CARs and CLs are issued based on a review of PDD Version 01 dated 02/09/2009, Version 1.03 dated 30.11.09, and findings of the project site visit held on 21/10/2009.		OK
A.1.3. Is the date when the document was completed presented?	1,2	DR	PDD Version 1.01 dated 02/09/2009. PDD Version 1.04 dated 30/11/2009.		OK

A.2. Description of the project					
A.2.1. Is the purpose of the project included?	1,2	DR I	The project is aimed at reconstruction of "NTMK" blast furnaces (BF) #5 and #6 with the introduction of resource saving technologies of molten iron production. The key saving solutions implemented during "NTMK" BF #5 and #6 reconstruction are indicated in PDD Section A.2, Table A.1 and page 2. The project intends to completely shut down BF # 2, 3 and 4 and ensure the production of molten iron, needed for "NTMK" steelmaking operations, by a more efficient technique. The baseline as described in PDD Section A.4.3 assumes the further use of the existing capacities with preservation of the furnace useful volume of BF ##1-5 and suspension of BF #6 and represents business-as-usual "NTMK" operations under the RF legislation and with the same quality as in the project. **CAR 02.** Please include in PDD Section A.2 as per [2] the description of the purpose of the project with a concise explanation of the baseline scenario and the project scenario (expected outcome). Please summarize the history of the project including its JI component. **CAR 03.** Please ensure that the kinds of carbon-bearing materials, fuel and energy carriers used at "NTMK" for molten iron production are correctly referenced (refer to PDD,	CAR 02 CAR 03	OK OK

			Section A.2, page 3).		

A.2.2. Is it explained how the proposed project reduces greenhouse gas emissions?	1,2	DR	GHG emissions are reduced due to the implementation of the following key technological and operational resource saving measures: - change of furnace line (sectional shape) at BF's; - introduction of furnace expert control system at BF's; - installation of Central Bell Less Top with rotary hopper manufactured by "Paul Wurth" within a System of iron-ore raw material charging and modern industrial vacuum cleaners; it allows to significantly reduce the amount of exhausting dust with carbon bearing raw materials; - installation of the modern shaftless Kalugin stoves at the Stove blocks, which allows to enhance natural gas combustion and decrease CO2 emission in the exhausting gases; - installation of top-pressure recovery turbine (TPRT) at BF #6 in the System of blast furnace gas extraction and cleaning, which allows to use of furnace gas excess pressure for additional electricity generation for internal usage. These measures would result in reduction of coke consumption for molten iron production in BF and for secondary electricity generation. The coke consumption at the recon-		OK

			structed BF #5 and #6 was reduced to 450kg/t of molten iron as compared to the baseline 495 kg/t on the average for BF # #1-5.		
A.3. Project participants					
A.3.1. Are project participants and Party(ies) involved in the project listed?	1,2	DR	The project participants are listed in PDD Section A.3 and Annex 1. Party A is the Russian Federation. Party B is the United Kingdom of Great Britain and Northern Ireland.		OK
A.3.2. The data of the project participants are presented in tabular format?	1,2	DR	The data is presented in the tabular format as per [2].		OK
A.3.3. Is contact information provided in Annex 1 of the PDD?	1,2	DR	The contact information is provided in PDD Annex 1.		OK
A.3.4. Is it indicated, if it is the case, if the Party involved is a host Party?	1,2	DR	It is indicated that the Russian Federation is the host Party.		OK
A.4. Technical description of the project					
A.4.1. Location of the project activity					
A.4.1.1. Host Party(ies)	1,2	DR	The Russian Federation is indicated as the host Party in PDD Section A.3.		OK
A.4.1.2. Region/State/Province etc.	1,2	DR	Sverdlovsk Region, Russian Federation.		OK
A.4.1.3. City/Town/Community etc.	1,2	DR	City of Nizhniy Tagil, Sverdlovsk region.		OK
A.4.1.4. Detail of the physical location, including information allowing the unique identification of the project. (This section should not exceed one page)	1,2	DR	The unique identification is given by the following information: "NTMK" is located in the city of Nizhniy Tagil in the Sverdlovsk region		OK

			of the Russian Federation. Its coordinates are 57° 55' 04" N, 60° 00' 32" E.		
A.4.2. Technology(ies) to be employed, or measures, operations or actions to be implemented by the project					
A.4.2.1. Does the project design engineering reflect current good practices?	1,2	DR, I	The replacement of key sections of the blast furnace complex BF #5 and #6 with more efficient ones used for the production of molten iron from iron raw material presents a current good practice from the resource consumption standpoint. **CAR 04.** Blast furnace and coke gases used as fuel at the TPP boilers and the purified coke gas used as fuel for heating the coke furnace batteries are not indicated on the Figure A.2 in PDD Section A.4.2 (refer to PDD, pages 9-10).	CAR 04	OK
A.4.2.2. Does the project use state of the art technology or would the technology result in a significantly better performance than any commonly used technologies in the host country?	1,2	DR I	The general operational workflow of the blast furnace and auxiliary shops and subdivisions – suppliers of the BF operations, do not change in the project. The project technology is based on the advanced metallurgical technique of upgrading the existing blast furnace shops with the introduction of resource saving technologies of molten production (refer to A.2.2 above). Project realization allows reducing CO2 emissions primarily due to the decrease of coke consumption, which is produced in "NTMK" coke-chemical operations from the coking coal and used as fuel in the		OK

			blast furnaces. The coke consumption at the reconstructed BF #5 and #6 is reduced to 450 kg/t of molten iron as compared to the baseline 495 kg/t on the average for BF ##1-5.		
A.4.2.3. Is the project technology likely to be substituted by other or more efficient technologies within the project period?	1,2	DR I	The project technology is unlikely to be substituted by other or more efficient technologies within the project period.		OK
A.4.2.4. Does the project require extensive initial training and maintenance efforts in order to work as presumed during the project period?	1,2	DR, I	**CL 01.** Please clarify if provisions for meeting training needs with regards monitoring are made if appropriate.	CL 01	OK
A.4.2.5. Does the project make provisions for meeting training and maintenance needs?	1,2	DR	Conclusion is pending a response to CL 01.	Pending	OK
A.4.3. 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					
A.4.3.1. Is it stated how anthropogenic GHG emission reductions are to be achieved? (This section should not exceed one page)	1,2	DR	The explanation is given in Section A.4.3 as follows. Under the project, emissions of CO2 will be significantly reduced as a result of "NTMK" BF #5 and #6 reconstruction and introduction of the following resource saving molten iron production technologies at the furnaces: - change of furnace line (shape), which results in the more uniform processing of the iron ore raw material with BF gases and, accordingly, in	CAR 05 CAR 06	

			higher degree of value-added use of carbon coke chemical energy; - installation of the unique expert system of furnace operations control to monitor the alteration of the raw material parameters and furnace operations in the real time mode and adjusts them. This allows ensuring the optimal furnace run with regard to the resource saving standpoint and excluding the influence of the "human factor" on furnace operations; - installation of the state of the art stoves, providing the temperature increase of the blast blown into the furnace, thus reducing the coke consumption; - installation of the state of the art Central Bell Less Top with rotary hopper, manufactured by "Paul Wurth", which allows a higher control opportunity over the charging of materials into the furnace for ensuring maximum value-added use of gas thermal and chemical energy in the BF and also results in the significant decreasing of carbon barring dust emissions into the atmosphere; - installation of top-pressure recovery turbine (TPRT) at the blast furnace #6, which uses the excess furnace gas pressure for generating secondary energy. It would result in reducing the fuel consumption for energy generation. Under the baseline scenario, further use of the existing capacities with preservation of the fur-		

			nace useful volume of BF ##1-5 and suspension of BF #6 are assumed and represents business-as-usual "NTMK" operations under the RF legislation and with the same quality as in project. **CAR 05.** Please include the implementation schedule in PDD Section A.4.3 as per [2]. **CAR 06.** Please provide data sources of the diagram Figure A.3 (refer to PDD Section A.4.3, page 10) [2].		
A.4.3.2. Is it provided the estimation of emission reductions over the crediting period?	1,2	DR	The estimated GHG emission reduction is 1 753 152 tons of CO2 equivalent over the crediting period 2008 - 2012. Refer to PDD Section A.4.3.1. Conclusion is pending responses to CAR's 11-15, 18, 25-26, 27, 28, which may result in re-calculation of the CO2 emissions.		OK
A.4.3.3. Is it provided the estimated annual reduction for the chosen credit period in tCO_2e?	1,2	DR	The estimated annual emission reduction is 342 904 (for the year 2008); 352 530 (for the year 2009); 352 550 (for the year 2010); 352 573 (for the year 2011); 352 595 (for the year 2012); tones of CO2 equivalent. Refer to PDD Section A.4.3.1. Conclusion is pending responses to CAR's 11-15, 18, 25-26, 27, 28, which may result in re-calculation of the CO2 emissions.		
A.4.3.4. Are the data from questions A.4.3.2 and A.4.3.3 above presented in tabular format?	1,2	DR	The data is presented in the tabular format. Refer to PDD Section A.4.3.1.		OK

A.5. Project approval by the Parties involved					
A.5.1. Are written project approvals by the Parties involved attached?	1,2	DR	Conclusion is pending a response to CAR 01.		OK

B. **Baseline**					
B.1. Description and justification of the baseline chosen					
B.1.1. Is the chosen baseline described?	1,2,3	DR	The baseline is defined as further use of the existing capacities with preservation of the furnace useful volume of BF ##1-5 and suspension of BF #6. Refer to PDD Section B1 and Annex 2. Key information and data used to establish the baseline is presented in tabular format in PDD Annex 2 as per [2]. **CAR 07.** Please ensure that all rows of prescribed tabular form [Ref. 2, page 12] are filled in PDD Annex 2 tables.	CAR 07	OK
B.1.2. Is it justified the choice of the applicable baseline for the project category?	1,2,3	DR	**CAR 08.** Please justify the choice of the baseline and explicitly indicate which of approaches to baseline setting is used [2].	CAR 08	OK
B.1.3. Is it described how the methodology is applied in the context of the project?	1,2,3	DR	Not applicable since this is the own project-specific approach.		OK
B.1.4. Are the basic assumptions of the baseline methodology in the context of the project activity presented (See Annex 2)?	1,2,3	DR	Main assumptions of the baseline approach are as follows:	CAR 09 CAR 10	OK OK

			- the planned total BFS baseline molten iron production is accepted equal to the project production; - the duration of the obligatory first category capital repairs, which should otherwise be carried out for BF#1 and #4 within 2008-2012, does not significantly influence on the total baseline molten iron production. Thus, the BFS production decline during BF #1 and #4 repairs will result in amount to less that 0.1 million tons of molten iron or about 2%; - the specific consumption of raw materials, fuel and energy carriers as well as steam and blast air both for baseline and project scenario within 2008-2012 were calculated on the bases of average annual values of the actual production data in 2001-2003; - the carbon mass fraction in the limestone is fixed both for baseline and project scenario as 12% with reference to IPCC Guidelines for National Greenhouses Gas Inventories, 2006, Vol. 3, Ch. 4 (refer to PDD, pages 14, 17); - the volume of power, generated by the TPRT-12 installed at blast furnace #6 commissioned in 2007, is fixed ex-ante for the period of 2009-2012 based on the actual production data of 2008; - the calculation of CO2 emissions at "NTMK" is made by means of forming the carbon balance during metal production;	CAR 11 CAR 12 CAR 13 CAR 14 CAR 15	OK OK OK OK OK

			- the fuel emission factors for natural gas both for baseline and project scenario is used as conservative with reference to IPCC Guidelines for National Greenhouses Gas Inventories, 2006, Vol. 2, Ch. 2; - the emission factor for power generation both for baseline and project scenario is used as conservative from the Operational Guidelines for Project Design Documents of JI Projects, Vol.1, 2004, Netherlands. **CAR 09.** Please provide a transparent description of the approach to calculate baseline BF## 1-5 performance figures for 2008-2012 in PDD Section B.1 as required in [2]. **CAR 10.** Some parameters (e.g. carbon content in the coking coal, Coke Chemical Operations performance indicators and the data, needed for the calculation of natural gas and power consumption at TPP-steam blower, in the oxygen shop and water supply shop) according to baseline and project scenario were accepted as per the "NTMK" actual production data for 2006-2008 (refer to PDD Section B.1, Tables B.4, B.5). The yearly values are not presented nor the uncertainty and conservatism of this approach is assessed. The same item of concern is actual with regard to the calculation approach of BFS baseline and project consumption of fuel, materials and energy carriers in 2008-2012 (refer to PDD Section B.1, Table B.3, and p. 13) [2].		

			CAR 11. The spreadsheet for calculation project CO2 emissions takes into account BF #4 for 2008 and therefore contradicts with the specified in PDD Sections A.1 and B.1 project concept described as follows "reconstruction of "NTMK" blast furnaces #5 and #6 with the introduction of resource saving technologies of molten iron production and shut down BF # 2, 3 and 4". **CAR 12.** In PDD Section B.1, page 15 it is stated that "the actual performance indexes of reconstructed BF #5 and #6, required for the calculation of project CO2 emissions and the molten iron production volumes in 2008, are taken based on the "NTMK" BFS reports for 2008". However in the presented to the verifier spreadsheet for calculation of project CO2 emissions they are taken as average data for 2007-2008. **CAR 13.** The ex-ante "NTMK" BF #5 project performance data for 2009-2012 are not correct with regard to the taken approach of using the average annual performance values in 2006-2008 (refer to the spreadsheets for calculation project CO2 emissions and PDD Section B.1, Table B.8). **CAR 14.** There is no evidence that the exclusion of a part of flows of materials and fuel (coke, blast furnace gas, coke gas, pellets and sinter) from the calculation of CO2 emissions by the carbon balance method both for base-		

			line and project scenario meets with the requirements of [3, para 11] (refer to PDD Section B.1, page 17). **CAR 15.** Baseline scenario description in PDD Section B.1 does not consider the obligatory first category capital repairs, which should otherwise be carried out for BF#5 within 2005-2012 (please refer to PDD Section B.2, p.19).		
B.1.5. Is all literature and sources clearly referenced?	1,2,3	DR	**CAR 16.** Please provide a correct reference for the JI Guidelines and Appendixes in PDD Section B.1 on p.12, Section B.2 on p. 18.	CAR 16	OK
B.2. Description of how the anthropogenic emissions of greenhouse gases by sources are reduced below those that would have occurred in the absence of the JI project					
B.2.1. Is the proposed project activity additional?	1,2, 3,5	DR	To prove the project additionality, an approach is used similar to the provisions of the CDM "Tool for demonstration and assessment of additionality" [4]. After screening of six alternatives, three alternative scenarios were selected as viable, namely: - Scenario 1. Preservation of the current situation: continuation of BF #5 operations and BF #6 remains suspended. This scenario does not require significant investments for the BF reconstruction, and only the 1st category capital repairs at BF ##1, 4 and 5 during the years of 2005-2012 will be needed; - Scenario 5. BF #6 reconstruction without	CAR 17 CAR 18 CAR 19 CL 02 CL 03	OK OK OK OK OK

			reconstructing BF #5 and carbon financing; - Scenario 6. Project realization without attracting carbon financing. Analysis of investments similar to the financial benchmark analysis [4] with using the corporate "NTMK" capital return rate 20% and planning horizon 21 years was used with and without the revenue from the sale of ERU's. Investment analysis of Scenarios 6 and 5 has shown that the Scenario 6 does not meet the corporate profitability requirements and cannot compensate for high investment costs (281.9 $ mln.) without the revenue from the sale of ERU's and, as a result, it is the worst scenario with regard to Scenario 5 (NPV= - 6.2 mln $ versus - 4.5 mln $ for Scenario 5). The project payback within the planning horizon can be ensured only by means of including the additional funds, drawn from the sales of ERU's, with IRR = 20.5% and NPV = 2.8 $ mln. (refer to Table B.11 Section B.2 PDD, page 20). Thus, the proposed project activity (Scenario 6) is not most economically or financially attractive alternative scenario. Therefore, the Scenario 1 is taken as the baseline scenario. The common practice analysis was conducted. The project of "NTMK" is the only project in the Ural Federal District, among the regional metallurgy companies, which can be referred to the projects oriented on the construction or reconstruction of molten iron production facilities		

			(please refer to "Expert Ural"#38(255)http://www.expert.ru/printissues/ural/2006/38/investicionnye_proekty). Thus, the project of "NTMK" BF #5 and #6 reconstruction, including the complex introduction of new technologies of molten iron production and installation of modern equipment, is unique for the Russian metallurgical enterprises. So, the project provides emission reduction that is additional to any that would otherwise occur. **CAR 17.** It is not explicitly indicated which of approaches to demonstrate addtionality is chosen (ref. to [2]). In PDD, the approach similar to that in CDM "Tool for demonstration and assessment of additionality" is used [4]. **CAR 18.** There is no confidence that the proposed scenario 3 could not be considered as the baseline scenario since the wrong data are put in Table B.10 (compare Table B.1 on page 12 with Table B.10 on page 19). **CAR 19.** Please include a sensitivity analysis to show whether the conclusion regarding the financial/economic attractiveness is robust. This is particularly relevant since IRR in Scenarios 5 and 6 are just 1% below the threshold of 20%. **CL 02.** Please clarify the choice of the planning horizon of 21 years in the investment analysis.		

			CL 03. Please clarify the share of investments for the BF ##1, 4 and 5 obligatory first category capital repairs as compared with the total project investments to justify that the scenario 1 would be most economically or financially attractive alternative scenario.		
B.2.2. Is the baseline scenario described?	1,2,3	DR	Please refer to PDD Section B.2.		OK
B.2.3. Is the project scenario described?	1,2,3	DR	The project scenario, being Alternative 6, is described in PDD Sections A.4.2. A.4.3, B.2. **CAR 20.** Please ensure the adequate description of the title of project scenario, being Alternative 6.	CAR 20	OK
B.2.4. Is an analysis showing why the emissions in the baseline scenario would likely exceed the emissions in the project scenario included?	1,2,3	DR	The analysis is presented in PDD Section B.2.		OK
B.2.5. Is it demonstrated that the project activity itself is not a likely baseline scenario?	1,2,3	DR	Please refer to PDD Section B.2. The project activity without registration under JI mechanism is not a likely baseline scenario if the sensitivity analysis confirms that the project is not economically and financially attractive as compared with the chosen baseline scenario.		OK
B.2.6. Are national policies and circumstances relevant to the baseline of the proposed project activity summarized?	1,2,3	DR	Currently "NTMK" has no commitments to federal, regional or municipal authorities regarding the blast furnaces' operations shutdown. Among the primary goals of the current state Program "Strategy of the RF ferrous metallurgy development for 2015", the main goals are the increase of steel casting volumes at continuous casting plants and reduction of steel pro-		OK

			duction in open-hearth furnaces. The efficiency increase of blast furnaces' operations is not specified in the list of priority trends of enterprises' reconstruction in the Program. The modern furnace expert control system, system of iron-ore raw material charging, a modern shaftless Kalugin stoves, and the system of blast furnace gas extraction and vacuum cleaners are installed in the BH complex along with the contractual change of furnace's sectional shape allowing the effective and steady BF running and higher degree of the value-added use of carbon coke chemical energy and coke consumption reduction. Furthermore after the BF ## 5 and 6 reconstruction, the ground level concentrations of carbon bearing gaseous emissions and the sprays of solids and their constituents will be significantly lower than the accepted in the RF sanitary standards. Refer to PDD Section A.4.3, B.2 and F.1.		
B.3. Description of how the definition of the project boundary is applied to the project activity					
B.3.1. Are the project's spatial (geographical) boundaries clearly defined?	1,2,3	DR I	**CAR 21.** The assessment with regard to the provisions of paragraph 11 of the JISC Guidance for baseline setting and monitoring [3, para 11] towards to the project's spatial boundaries definition is not presented in PDD Section B.3 with regard to the incoming flows of the pellets and sinter [2].	CAR 21	OK

B.4. Further baseline information, including the date of baseline setting and the name(s) of the person(s)/entity(ies) setting the baseline					
B.4.1. Is the date of the baseline setting presented (in DD/MM/YYYY)?	1,2	DR	The date of the baseline setting is 30/06/2009.		OK
B.4.2. Is the contact information provided?	1,2	DR	The baseline was developed by Camco Carbon Russia Limited. Contact person: Ryumin Oleg; e-mail: Project.participant.ru@camcoglobal.com Tel/fax +7 495 721 2565		OK
B.4.3. Is the person/entity also a project participant listed in Annex 1 of PDD?	1,2	DR	Camco Carbon Russia Limited is a project participant listed in Annex 1 of the PDD [2].		OK
***C.* Duration of the project and crediting period**					
C.1. Starting date of the project					
C.1.1. Is the project's starting date clearly defined?	1,2	DR	**CAR 22.** Please indicate and substantiate the project's starting date having in mind that the presented to the verifier spreadsheets for invest analysis calculation states the project starting date as Q4 2002 [2].	CAR 22	OK
C.2. Expected operational lifetime of the project					
C.2.1. Is the project's operational lifetime clearly defined in years and months?	1,2	DR	**CAR 23.** The project's operational lifetime in months is not defined [2].	CAR 23	OK
C.3. Length of the crediting period					

C.3.1. Is the length of the crediting period specified in years and months?	1,2	DR	**CAR 24.** The length of the crediting period in months is not defined [2].	CAR 24	OK
***D.* Monitoring Plan**					
D.1. Description of monitoring plan chosen					
D.1.1. Is the monitoring plan defined?	1,2,3	DR	The monitoring plan is defined on the basis of an own approach without using any approved methodologies. Option 1 – Monitoring of the emissions in the project scenario and baseline scenario – is chosen. The carbon balance method is used for calculation of direct CO2 emissions. Refer to PDD Section B.2. Data to be collected is defined in PDD Sections D.1.1.1 and D.1.1.3. **CAR 25.** Please explicitly indicate which of the approaches regarding monitoring, defined in the JISC Guidance on criteria for baseline setting and monitoring is chosen [2]. **CAR 26.** There is no description in PDD of the assumption to monitor coke instead of coking coal for molten iron production, taking into account that coke was taken out of CO2 emissions calculation as stated in Section B.1, page 18. Please state how uncertainties are taken into account and conservativeness is safeguarded with regard to the above applied assumption as per [2]. **CAR 27.** The project monitoring plan does not	CAR 25 CAR 26 CAR 27	OK OK OK

			consider CO2 emissions due to: - electricity consumption for nitrogen production used in the Central Bell Less Top with rotary hopper and coolant system BF #5 and BF #6; - electricity consumption for CCO end products production.		
D.1.2. Option 1 – Monitoring of the emissions in the project scenario and the baseline scenario.	1,2	DR	This option is selected.		OK
D.1.3. Data to be collected in order to monitor emissions from the project, and how these data will be archived.	1,2	DR I	Data to be collected in order to monitor emissions from the project is defined in PDD Section D.1.1.1. These data and relevant monitoring points are defined in PDD as follows: - direct CO2 emissions of the molten iron manufacture at BF #1, 4, 5, 6 (calculated); - the molten iron production in BF #1, 4, 5, 6 (measured); - the consumed amounts of coke, limestone, natural gas, steam and air blast at BF #5 and 6 (measured); - the project consumption of coke, limestone, natural gas, steam and blast air at BF #1 and #4 (calculated); - indirect CO2 emissions at the RF UES power grids during generation of energy, consumed for molten iron production (calculated); - electricity, oxygen and recycle water at BF #5 and #6 consumption (measured); - the project consumption of electricity, oxy-	CAR 28 CAR 29 CL 04	OK OK OK

			gen and recycle water at BF #1 and #4 (calculated). Parameters that are not monitored throughout the crediting period, but are determined only once, and that are available already at the stage of the PDD development, have been described and determined in PDD Section B.1 (refer to Table B.8 on page 16). They are also explained in Section D.1.2.2 (refer Tables D.1, D.2, D.3 on pages 29, 31, 32). There are no parameters that are not monitored throughout the crediting period, but are determined only once, and that are not available already at the stage of determination regarding the PDD. It is defined that the data will be archived electronically only. **CAR 28.** Please clearly distinguish why the project consumption of coke, limestone, natural gas, steam and blast air, electricity, oxygen and recycle water at BF #1 and #4 are fixed ex-ante based on the historical data for 2001-2003 while the actual molten iron production for BF #1 and #4 are monitored in 2008 (refer to PDD Section B.2, page 15 and Section D.1. page 25) [3]. The same issue of concern is relevant to BF #1, 4, 5, 6 with regard to the constants, related to the CCO, BFS and TPP-steam blower operations, which were calculated in PDD Sec-		

			tion B.1 for the baseline scenario, and fixed ex-ante for the calculation of actual project CO2 emissions within the project boundary (refer to PDD Section B.1, page 13-14, Table B.4 and Section D.1.1.2 Table D.1) **CAR 29.** Table D.1 Section D.1.1.1 does not include the parameters as follows: - $SC_{BF\ X\ PJ}$ – specific consumption of coke, limestone, natural gas, steam and blast air at BF_x; - $SC_{BF\ X\ PJ}$ – specific consumption of electricity, oxygen and recycle water at BF *x*, MW •hr (m3) /t; - Net calorific value of natural gas used at "NTMK". **CL 04.** Please clarify in PDD Sections D.1 the date of BF #1 and #4 operations shutdown (refer to PDD Section B.1, p.15 and Section D.1, p.25). Conclusion is pending a response to CAR 10.		
D.1.4. Description of the Formulae used to estimate project emissions (for each gas, source etc.; emissions in units of CO2 equivalent).	1,2,5	DR	Calculation of project CO2 emissions is based on both direct CO2 emissions at "NTMK" and indirect emissions at the RF UES power grids. These are Formulae (D.3) – (D.16) on p. 28-33 presented in PDD Section D.1.1.2. They allow calculating CO2 project emissions on the basis of data defined in D.1.3 above.		
D.1.5. Relevant data necessary for determining the	1,2	DR	Calculation of baseline CO2 emissions takes	CAR 30	OK

baseline of anthropogenic emissions of greenhouse gases by sources within the project boundary, and how such data will be collected and archived.		I	into account both direct CO2 emissions at "NTMK" and indirect emissions at the RF UES power grids. Baseline direct CO2 emissions are calculated based on the actual project molten iron production and estimated specific consumption of coke, limestone, natural gas, and steam and air blast, calculated in section B.1. Baseline indirect emissions are calculated based on the actual the project molten iron production and estimated specific consumption of the electricity, coke, oxygen, and water and blast air, calculated in section B.1. Parameters that are not monitored throughout the crediting period, but are determined only once, and that are available already at the stage of the PDD development, have been described and determined in PDD Section B.1 (refer to Table B.8, page 16). They are also explained within the Section D.1.1.4 (refer to pages 35-38, Section D.1.1.2, Table D.1, page 29). There are no parameters that are not monitored throughout the crediting period, but are determined only once, and that are not available already at the stage of determination regarding the PDD. **CAR 30.** The data in PDD Section D.1.1.3 are indicated as measured what does not reflect the baseline approach described in Section	CAR 31 CAR 32	OK OK

			D.1.1.4, page 35 and Section B.1, page 12, under which all the data are estimated and/or calculated. **CAR 31.** Please ensure the correct dimension of parameters as follows SO_{Benz} , Benzol yield from coking coal; SO_{Naph} , Naphthalene yield from coking coal in PDD Section D.1.1.2, page 28, used in formulae (D.24), page 37. **CAR 32.** Please ensure the correspondence of data in Section D.1.1.3 PDD, page 35 with the key information and data used to establish the baseline presented in Annex 2. Conclusion is pending a response to CAR 10.		
D.1.6. Description of the Formulae used to estimate baseline emissions (for each gas, source etc, emissions in units of CO2 equivalent).	1,2	DR	These are Formulae (D.9) – (D.17) presented in PDD Section D.1.1.4, which allow to uniformly calculating CO2 baseline emissions of the two components of baseline emissions: - direct CO2 emissions at "NTMK" and; - indirect emissions at the RF UES power grids. Detailed and transparent description of the formulae is given. The formulae were checked and found correct.		OK
D.1.7. Option 2 – Direct monitoring of emissions reductions from the project (values should be consistent with those in section E)	1,2	DR	Not applicable.		OK
D.1.8. Data to be collected in order to monitor emission reductions from the project, and how these	1,2	DR	Not applicable.		OK

data will be archived.					
D.1.9. Description of the Formulae used to calculate emission reductions from the project (for each gas, source etc; emissions/emission reductions in units of CO2 equivalent).	1,2	DR	Not applicable.		OK
D.1.10. If applicable, please describe the data and information that will be collected in order to monitor leakage effects of the project.	1,2	DR	The leakages are reasonably considered negligible.		OK
D.1.11.Description of the Formulae used to estimate leakage (for each gas, source etc,; emissions in units of CO2 equivalent).	1,2	DR	Not applicable.		OK
D.1.12. Description of the Formulae used to estimate emission reductions for the project (for each gas, source etc.; emissions in units of CO2 equivalent).	1,2	DR	This is the straightforward Formula (D.32) $ER_y = BE_y – PE_y$. Refer to PDD Section D.1.4.		OK
D.1.13. Is information on the collection and archiving of information on the environmental impacts of the project provided?	1,2	DR I	The environmental monitoring at "NTMK" is carried out in accordance with environmental legislative requirements of the Russian Federation. The company periodically monitors its emission parameters, according to the schedules of environmental impact monitoring. Supporting documentation was checked during the site visit.		OK
D.1.14. Is reference to the relevant host Party regulation(s) provided?	1,2	DR	**CAR 33.** References to the Russian Federation regulations with regard to the environmental impacts of the project are not provided in PDD as required in [2], Section D.1.5.	CAR 33	OK
D.1.15. If not applicable, is it stated so?	1,2	DR	Refer to D.1.14.	Pending	OK

D.2. Qualitative control (QC) and quality assurance (QA) procedures undertaken for data monitored					
D.2.1. Are there quality control and quality assurance procedures to be used in the monitoring of the measured data established?	1,2	DR I	The measurement devices are envisaged to be calibrated periodically by the specialized organization. This was confirmed at the site visit.		OK
D.3. Please describe of the operational and management structure that the project operator will apply in implementing the monitoring plan					
D.3.1. Is it described briefly the operational and management structure that the project participants(s) will implement in order to monitor emission reduction and any leakage effects generated by the project	1,2	DR I	Refer to PDD Section D.3.		OK

D.4. Name of person(s)/entity(ies) establishing the monitoring plan					
D.4.1. Is the contact information provided?	1,2	DR	Monitoring plan was developed by "Camco Carbon Russia Limited": contact person: Ryumin Oleg; e-mail: Project.participant.ru@camcoglobal.com Tel/fax +7 495 721 2565		OK
D.4.2. Is the person/entity also a project participant listed in Annex 1 of PDD?	1,2	DR	"Camco Carbon Russia Limited" is a project participant.		OK
***E.* Estimation of greenhouse gases emission reductions**					
E.1. Estimated project emissions					
E.1.1. Are described the Formulae used to estimate anthropogenic emissions by source of GHGs due to the project?	1,2	DR	These are Formulae (E.1) – (E.18) presented in PDD Section E.1. These were checked and found correct.		OK
E.1.2. Is there a description of calculation of GHG project emissions in accordance with the Formula specified in for the applicable project category?	1,2	DR	GHG project emissions PE are calculated by Formulae (E.1) – (E.18) on the excel spreadsheet, which was made available to the verifier. Calculations of GHG emissions PE by the Formulae (E.1) – (E.18) are shown in PDD Section E.1 and in Table E.20 on page 56 PDD. **CL 05**. Please clarify whether the total yearly electricity consumption within the project boundary includes the yearly TPRT electricity generation (ref. PDD, Section E.1, Formulae	CL 05	OK

			(E.17)). Conclusion is pending also a response to CAR's 11-15, 18, 25-26, 27, 28, which may result in recalculation of the CO2 emissions.		
E.1.3. Have conservative assumptions been used to calculate project GHG emissions?	1,2	DR	Not applicable.		OK
E.2. Estimated leakage					
E.2.1. Are described the Formulae used to estimate leakage due to the project activity where required?	1,2	DR	Not applicable (refer to PDD Section E.2).		OK
E.2.2. Is there a description of calculation of leakage in accordance with the Formula specified in for the applicable project category?	1,2	DR	Not applicable.		OK
E.2.3. Have conservative assumptions been used to calculate leakage?	1,2	DR	Not applicable.		OK
E.3. The sum of E.1 and E.2.					
E.3.1. Does the sum of E.1. and E.2. represent the project activity emissions?	1,2	DR	As no leakage is expected, E.1+E.2=E.1. Refer to PDD Table E.21.		OK
E.4. Estimated baseline emissions					
E.4.1. Are described the Formulae used to estimate the anthropogenic emissions by source of GHGs in the baseline using the baseline methodology for the applicable project category?	1,2	DR	These are Formulae (E.19) – (E.36) presented in PDD Section E.4. The Formulae were checked and found correct.		OK
E.4.2. Is there a description of calculation of GHG baseline emissions in accordance with the Formula specified for the applicable project category?	1,2	DR	GHG baseline emissions BE are calculated by Formulae (E.19) – (E.36) on the excel spreadsheet, which was made available to the verifier.		OK

			Calculations of GHG baseline emissions BE by Formulae (E.19) – (E.36) are shown in PDD Section E.4 and Tables E.32- E.45.		
E.4.3. Have conservative assumptions been used to calculate baseline GHG emissions?	1,2	DR	The fuel emission factors for natural gas are used as conservative with reference to IPCC Guidelines for National Greenhouses Gas Inventories, 2006, Vol. 2, Ch. 2. The emission factor for power generation is used as conservative from the Operational Guidelines for Project Design Documents of JI Projects, Vol.1, 2004. Conclusion is pending a response to CAR 21.	Pending	OK
E.5. Difference between E.4. and E.3. representing the emission reductions of the project					
E.5.1. Does the difference between E.4. and E.3. represent the emission reductions due to the project during a given period?	1,2	DR	Yes, it does. Refer to Formula (E.47) $ER_y = BE_y – PE_y$ in PDD Section E. 5. Conclusion is pending a response to CAR's 11-15, 18, 25-26, 27, 28, which may result in recalculation of the CO2 emissions.	Pending	OK
E.6. Table providing values obtained when applying Formulae above					
E.6.1. Is there a table providing values of total CO_2 abated?	1,2	DR	PDD Section E.6 Table E.46 provides the total values of project emissions, leakage, baseline emissions, and emission reductions in accordance with the JI reporting format. Conclusion is pending a response to CAR's 11-15, 18, 25-26, 27, 28, which may result in recalculation of the CO_2 emissions.	Pending	OK

***F.* Environmental Impacts**					
F.1. Documentation on the analysis of the environmental impacts of the project, including transboundary impacts, in accordance with procedures as determined by the host Party					
F.1.1. Has an analysis of the environmental impacts of the project been sufficiently described?	1,2	DR I	**CAR 34**. Please list the documentation in the PDD [2].	CAR 34	OK
F.1.2. Are there any host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?	1,2,5	DR I	Under the RF Urban Development Code N 190-FL [5], the capital construction cannot start without an authority's permission. The latter is granted if there is a positive conclusion of the state expertise on the project documentation, which shall contain the results of EIA. Permissions of the environmental authority Rostekhnadzor shall also be issued for both the construction of the object and for its exploitation. Once the new equipments have been constructed and commissioned, it should have all the permissions granted. . Environmental permissions was checked during verifier's site-visit and found out in compliance with RF environmental legal requirements.		OK
F.1.3. Are the requirements of the National Focal Point being met?	1,2, 6,7	DR I	The requirements of the National Focal Point to present the EIA should be met before the submission of the project to the Coordination Centre of National Focal Point [7, 8]. Refer to F.1.		OK

F.1.4. Will the project create any adverse environmental effects?	1,2	DR I	Permits for Air Emissions were checked during verifier's site-visit and found out in compliance with RF environmental legal requirements.		OK
F.1.5. Are transboundary environmental impacts considered in the analysis?	1,2	DR I	The project activity has no transboundary environmental impacts.		OK
F.1.6. Have identified environmental impacts been addressed in the project design?	1,2	DR I	Conclusion is pending a response to CAR 34.	Pending	OK
***G.* Stakeholders' comments**					
G.1. Information on stakeholders' comments on the project, as appropriate					
G.1.1. Is there a list of stakeholders from whom comments on the project have been received?	1,2	DR I	There is no information about any comments from stakeholders.		OK
G.1.2. The nature of comments is provided?	1,2	DR I	Refer to G.1.		OK
G.1.3. Has due account been taken of any stakeholder comments received?	1,2	DR I	Refer to G.1.		OK

Table 4 Legal requirements

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
1. Legal requirements					
1.1. Is the project activity environmentally licensed by the competent authority?	1,2	DR	Refer to F.1.	Pending	OK
1.2. Are there conditions of the environmental permit? In case of yes, are they already being met?	1,2	DR	The conditions of the environmental permissions were checked during verifier's site-visit and found out in compliance with RF environmental legal requirements.		OK
1.3. Is the project in line with relevant legislation and plans in the host country?	1,2	DR	Yes, the project is in line with relevant legislation and plans in the host country.		OK

Table 5 Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
CAR 01. The project has no approval of the Host Party.	1 Table 1	According to the Russian legislation the letter of approval will be issued by the Russian Government on the basis of an expert statement issued by AIE after the project has been determined against the JI criteria and requirement set forth on both international and domestic level. PDD version 2.0 was issued on 28/09/2010 which refers in Section A.5 to the received Russian LoA. The Russian project participant OJSC "Nizhniy Tagil Iron and Steel Works" was authorized by the issued Russian LoA.	The CAR is closed based on the evidence that the LoA was issued
CAR 02. Please include in PDD Section A.2 as per [2] the description of the purpose of the project with a concise explanation of the baseline scenario and the project scenario (expected outcome). Please summarize the history of the project including its JI component.	A.2.1	The description of the purpose of the project with concise explanation of the baseline scenario and project scenario, as well as history of the project with JI component is included at the PDD Section A.2 (See PDD, p.2-3)	The response is accepted. This CAR is closed based on a concise explanation given in PDD with regard to the project scenario (expected outcome).
CAR 03. Please ensure that the kinds of carbon-bearing materials, fuel and energy carriers used at "NTMK" for molten iron produc-	A.2.1	This list is prepared based on the BFS operations technical reports, which give data on the consumption of materials, fuel and energy carriers for the production	The response is accepted. This CAR is closed based

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
tion are correctly referenced (refer to PDD, Section A.2, page 3).		of molten iron at blast furnaces (See PDD p.11, reference to the figure A.7). See also response to CAR 06.	on a concise explanation given in PDD with regard to the o figure A.7 in PDD Section A.4.3 explaining the structure of identified kinds of carbon-bearing materials, fuel and energy carriers used at "NTMK" for molten iron production.
CAR 04. Blast furnace and coke gases used as fuel at the TPP boilers; the purified coke gas used as fuel for heating the coke furnace batteries are not indicated on the Figure A.2 in PDD Section A.4.2 (refer to PDD, pages 9-10).	A.4.2.1	Flows of purified blast furnace gas and coke gas, burned in the steam blower boilers are presented in the figure A.5 (Numbering of the figures in Section A was corrected). The flow of coke gas purposed for heating the coke furnace batteries is not presented in the figure, since it does not go beyond the coke chemical operations' boundary (See PDD, p.9).	The response is accepted. This CAR is closed based on a concise explanation given in PDD. The Scheme in PDD Section A.4.2, on p. 9 is adequately present an actual technological flow chart.
CAR 05. Please include the implementation schedule in PDD Section A.4.3 as per [2].	A.4.3.1	Implementation schedule is included in PDD Section A.4.2 (See PDD, p.10, Figure A.6).	The response is accepted. Implementation schedule was checked during site visit. This CAR is closed based on a concise addition

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
			made in PDD.
CAR 06. Please provide data sources of the diagram Figure A.3 (refer to PDD Section A.4.3, page 10) [2].	A.4.3.1	The data, presented in diagram, was acquired as a result of CO_2 emissions calculation, made in section E of this PDD based on the technical reports on the BFS operations, which give data on the specific consumption of materials, fuel and energy carriers for the production of molten iron at blast furnaces. The link to the data source is given in the PDD (See PDD, p.11).	The response is accepted. This CAR is closed based on a concise explanation given in PDD. The link to the source of data is presented in PDD Section A.4.2, on p.11.
CAR 07. Please ensure that all rows of prescribed tabular form [Ref. 2, page 12] are filled in PDD Annex 2 tables	B.1.1	All necessary rows of prescribed tabular form for Annex 2 PDD are filled (See PDD, pp.87 - 99, rows "Time of determination/monitoring", "QA/QC Procedures (to be) applied").	The response is accepted. This CAR is closed based on a concise additions made in PDD.
CAR 08. Please justify the choice of the baseline and explicitly indicate which of approaches to baseline setting is used [2].	B.1.2	Selection of baseline is made based on the requirements of the Guidance on criteria for baseline setting and monitoring and with regard to the requirements of the Decision 9/CMP.1, Appendix B "Criteria for baseline setting and monitoring". Baseline is established on project specific basis, because the emissions intensity depends significantly on technology of iron production, that doesn't allow using the standard emission factor. The project developer used his own approach for establishing the baseline, since among the approved	The baseline is established in line with Appendix B of JI Guidelines and the JISC Guidance on criteria for baseline setting and monitoring and in line with the Decision 9/CMP.1, Appendix B "Criteria for baseline setting and monitoring". The

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
		CDM methodologies there is not a single one that would be associated with the iron-making sector. However, during the baseline setting, individual elements of the approved CDM methodology AM0068 Methodology for improved energy efficiency by modifying ferroalloy production facility --- Version 1 (Scope 9: Metal production) were used in order to determine the "NTMK" baseline specific consumption of raw materials, fuel and energy carriers (See PDD, p.13). See also response to CAR 10.	own approach for establishing the baseline is described in PDD Sections VB.1 and B.2. This CAR is closed based on a concise additions made in PDD.
CAR 09. Please provide a transparent description of the approach to calculate baseline BF## 1-5 performance figures for 2008-2012 in PDD Section B.1 as required in [2].	B.1.4	In order to calculate the project emission reduction units, the total BFS baseline molten iron production is accepted as equal to the project production. This allows for avoiding the overestimate of the baseline GHG emissions. According to the project scenario, after the OHFS shutdown at the OJSC "NTMK" in 2009 only reconstructed BF ## 5 and 6 remain in the operations. The average project capacity of these BF in 2009-2012 is about 4.5 mln tons per annum, according to the data from the "NTMK" engineering department (PDD, Section B.1, Table B.9). This is lower that the production opportunities for the molten iron production in the BFS according to the baseline – 4.7 mln tons per annum (PDD, Section B.1, Table B.2). In order to determine the production capacity for	This CAR is closed based on a concise explanation given in PDD. Please provide the explanation in PDD to ensure transparency as required in [2].

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
		each of the BF working according to the baseline, one needs to find their share in the total shop production capacity. The shares of BF ##1-5 in the BFS production are determined based on the data on the BF operations in 2001-2003, i.e. the data for the last three years of operations before BF #6 was commissioned and project started. Further on, the project activity significantly influenced the BFS operations, and the share of each BF in the total BFS production. Throughout 2004-2009 BF ##2, 3, 1, 4 were consecutively shut down and BF #5 was reconstructed. During the selection of the Vintage of data for 2001-2003 the approved CDM baseline and monitoring methodology AM0068 Methodology for improved energy efficiency by modifying ferroalloy production facility --- Version 1 was used (See also answer to CAR 10). Molten iron production and average shares of BF ##1-5 in 2001-2003 are presented in table B.2 (See PDD, p.16).	
CAR 10. Some parameters (e.g. carbon content in the coking coal, Coke Chemical Operations performance indicators and the data, needed for the calculation of natural gas and power consumption at TPP-steam blower, in the oxygen shop and water supply shop) according to baseline and project scenario were	B.1.4	According to the Guidance on criteria for baseline setting and monitoring (version 01) paragraph 20 (b) during the baseline setting on the project-specific basis the project developer can use individual elements of the approved CDM baseline and monitoring methodologies, as appropriate. When choosing the vintage of data for the project	The response is accepted. This CAR is closed based on the adequate explanation and addition made to the PDD.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
accepted as per the "NTMK" actual production data for 2006-2008 (refer to PDD Section B.1, Tables B.4, B.5). The yearly values are not presented nor the uncertainty and conservatism of this approach is assessed. The same item of concern is actual with regard to the calculation approach of BFS baseline and project consumption of fuel, materials and energy carriers in 2008-2012 (refer to PDD Section B.1, p. 13 and Table B.7, page 16 [2].		and baseline consumption of materials and energy carriers, the developer used the elements of AM0068 Methodology for improved energy efficiency by modifying ferroalloy production facility --- Version 1 (Scope 9: Metal production). The justification for the use of this methodology is the similarity of the technological process of ferroalloys production and the iron production in the blast furnace. The materials containing carbon are used in the ferroalloy furnace charging material, as well as various types of fuel used for its heating and smelting. The AM0068 methodology establishes that for the calculation of the baseline GHG emissions the average data on the specific consumption of fuel and carbon-bearing materials for the production of ferroalloys for not less than the last three years must be used (See AM0068, p 9-10/31 in Section on the Process baseline emission factor). Since the project operations only affect the BF reconstruction, then for the calculation of the baseline performance figures of the other OJSC "NTMK" divisions, which are within the project boundary, the latest available data is used. According to the AM0068 methodology used the data for last three years (2006-2008). For the calculation of project production and specific consumption of raw materials, fuel and energy carriers	The conservatism is proven by the project owners: (1) for the calculation of the baseline CO2 emissions the average data on the specific consumption of fuel and carbon-bearing materials for the production of cast iron for the last three years were applied with reference to the used elements of AM0068 Methodology for improved energy efficiency by modifying ferroalloy production facility --- Version 1, p 9-10/31; (2) the ex-ante BF #5 and #6 molten iron production volume in 2009-2012, with reference to the "NTMK" engineering department, are presented in PDD Section B.1, table B.9. The above approach was

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
		at BF in 2009-2012 the latest three years available data (2006-2008) was also used. For the calculation of the shares of BF ##1-5 in the total baseline BFS production (as is shown in the answer to CAR09), and baseline specific consumption of raw materials, fuel and energy carriers at BF the data for 2001-2003 was used, i.e. for the last three years of operations prior to the BF #6 commissioning. The later data is distorted by the project influence on the BFS operations and cannot be accepted as the basis for the baseline calculation. Thus, the choice of the vintage of baseline and project data is based on the use of this approved CDM baseline and monitoring methodology (See PDD pp.17,20).	applied in calculation of BFS baseline and project consumption of fuel, materials and energy carriers in 2008-2012. The justification is sufficient. The sufficient evidence was available to the verifier during site visit.
CAR 11. The spreadsheet for calculation project CO2 emissions takes into account BF #4 for 2008 and therefore contradicts with a specified in PDD Section A.1 and B.1 the project concept given as follows "reconstruction of "NTMK" blast furnaces #5 and #6 with the introduction of resource saving technologies of molten iron production and shut down BF # 2, 3 and 4".	B.1.4	In PDD Sections A.1 and B.1 the wording of the project concept "shutting down BF ## 2,3 and reducing the molten iron production at BF # 1 and #4" is specified. Such change in wording of the project concept is justified, since after the project realization the BF #4 was not shut down right away, but continued the operations till 2008 (See PDD pp.2,19).	The response is accepted. This CAR is closed based on the adequate addition made to the PDD.
CAR 12. In PDD Section B.1, page 15 it is	B.1.4	The actual performance indexes of reconstructed BF	The response is ac-

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
stated that "the actual performance indexes of reconstructed BF #5 and #6, required for the calculation of project CO2 emissions and the molten iron production volumes in 2008, are taken based on the "NTMK" BFS reports for 2008". However in the presented to the verifier spreadsheet for calculation project CO2 emissions they are taken as average data for 2007-2008.		#5 and #6, required for the calculation of project CO2 emissions and the molten iron production volumes in 2008, are taken based on the "NTMK" BFS reports for 2008. Incorrect tables in the spreadsheet are corrected. Table B.8 in Section B.1 of the PDD is corrected (See PDD p.20).	cepted. This CAR is closed based on the adequate corrections made to the PDD.
CAR 13. The ex-ante "NTMK" BF #5 and #6 project performance data for 2009-2012 are not correct with regard to the taken approach as using of the average annual performance values in 2006-2008 (refer to the spreadsheets for calculation project CO2 emissions and PDD Section B.1, Table B.8).	B.1.4	The ex-ante "NTMK" BF #5 and #6 project performance data for 2009-2012 are taken using of the average annual performance values in 2006-2008. Incorrect tables in the spreadsheet are corrected. Table B.10 in Section B.1 of the PDD is corrected (See PDD pp.20).	The response is accepted. This CAR is closed based on the adequate corrections made to the PDD.
CAR 14. There is no evidence that the exclusion of a part of flows of materials and fuel (coke, blast furnace gas, coke gas, pellets and sinter) from the calculation of CO2 emissions by the carbon balance method both for baseline and project scenario meets with the requirements of [3, para 11] (refer to PDD	B.1.4	According to the Guidance on criteria for baseline setting and monitoring* the flows of carbon bearing raw materials and fuel should be considered, during the calculation which are: - under the control of the project participants; - reasonably attributable to the project; - significant.	This CAR is closed based on a concise explanation given in PDD Section B.1, p.22-23.

* Guidance on criteria for baseline setting and monitoring (version 01), JISC

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Section B.1, page 17)		Given that the molten iron production includes a number of stages, during the calculation of CO_2 emissions one should avoid multiple registration of the same amount of the coking coal carbon, which is transferred into various intermediate products during technological processes. The coking coal carbon is used as the reducing agent and energy source at the following stages of molten iron production (See PDD, Figure A.5): - as raw material for coke production during coking process in CCO with the associated generation of the coking gas; - as coke in the form of energy source and recovering agent of iron ore in blast furnaces with the associated blast furnace gas generation; - as coke and BF gas in the form of secondary energy source for coke-chemical and BF operations and at the "NTMK" TPP-steam blower. Therefore during the calculations of the emission reduction only the flows of carbon, coming into the project boundary and leaving them, are registered. The flows of coke, blast furnace gas and coke gas are not considered since their carbon is already registered in the coming flow of the coking coal. Data on the BF coke consumption is only used for the calculation of the coking coal amount needed for	

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
		the coke production, but it is not considered directly during the CO_2 emissions calculation both for baseline and project scenarios. See also response to CAR 26. Besides, during the calculations of the emission reduction, the flows of iron ore raw materials (pellets and sinter) are not considered either, since according to the plant data they are not carbon-bearing materials and do not influence the volume of CO_2 emissions during molten iron production (See PDD p.22-23).	
CAR 15. Baseline scenario description in PDD Section B.1 does not consider the obligatory first category capital repairs, which should otherwise be carried out for BF#5 within 2005-2012 (please refer to PDD Section B.2, p.19).	B.1.4	The commitment to carry out the first category repairs at BF #5 in 2005 is included into the description of baseline scenario (See PDD Section B.1, p.16), and into the project investment calculations.	This CAR is closed based on a concise explanation given in PDD Section B.1, p.16. The sufficient evidence was available to the verifier during site visit.
CAR 16. Please provide a correct reference for the JI Guidelines and Appendixes in PDD Section B.1 on p.12, Section B.2 on p. 18.	B.1.5	Reference for the Decision 9/CMP.1, Appendix B "Criteria for baseline setting and monitoring" is provided (See PDD, p.13)	The response is accepted. This CAR is closed based on the adequate corrections made to the PDD.
CAR 17. It is not explicitly indicated which of approaches to demonstrate addtionality is	B.2.1	Link to the use of "Tool for the demonstration and assessment of additionality" (version 05.2) approved by	CDM "Tool for demonstration and assessment of

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
chosen (ref. to [2]). In PDD, the approach similar to that in CDM "Tool for demonstration and assessment of additionality" is used [4].		the CDM Executive Board for the proof of the project additionality is included in section B.2 of the PDD (See PDD, p.23).	additionality" (version 05.2) was used to demonstrate that the project provides emission reduction that is additional to any that would otherwise occur listed in PDD Section B.1. The response is accepted. This CAR is closed based on the adequate references made to the PDD.
CAR 18. There is no confidence that the proposed scenario 3 could not be considered as the baseline scenario since the wrong data are put in Table B.10 (compare Table B.1 on page 12 with Table B.10 on page 19).	B.2.1	Mentioned table is corrected in line with BF ##1-4 production data for 2001-2003 (See PDD, p.14).	The response is accepted. This CAR is closed based on the adequate corrections made to the PDD, Section B.2, and p.14. PDD reads for the Scenario 3: "the maximum total volume of the molten iron production in BF ##1-4 amounts to 3.8 mln tons per annum with the actual

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
			demand for molten iron in 2002-2003 of 4.7-4.8 mln tons per annum . This does not provide the "NTMK" steelmaking operations with the required volume of molten iron for the period of BF #5 reconstruction in 2002-2003". Thus, the proposed scenario 3 reasonably could not be considered as the baseline scenario.
CAR 19. Please include a sensitivity analysis to show whether the conclusion regarding the financial/economic attractiveness is robust. This is particularly relevant since IRR in Scenarios 5 and 6 are just 1% below the threshold of 20%.	B.2.1	Since all alternatives to the project scenario can be represented as investment projects, requiring capital expenses, the investment analysis technique was altered from benchmark analysis to investment comparison analysis. During the "NTMK" operations in the event of such cases the investment figures of the considered alternatives are considered. The key prerequisites for running the investment comparison analysis are presented in section B.2 of the PDD. Results of the sensitivity analysis also are included in	In accordance with provision of "Tool for the demonstration and assessment of additionality" (version 05.2) the sensitivity analysis was performed. It was carried out with regard to three variables that constitute more than 20%: (1) Investment expenditures level; (2) price level; (3) production

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
		Section B.2 (See PDD, pp. 24-26).	expenses level. The key prerequisites applied to the investment comparison analysis and the sensitivity analysis is presented now in PDD Section B.2. Based on the sensitivity analysis and barrier analysis it was proved that the project has significant barriers during its realization, associated with the variation of the investment volume, production volume, and products' price. The response is accepted. This CAR is closed based on the adequate corrections made to the PDD, Section B.2
CAR 20. Please ensure the adequate description of the title of project scenario, being	B.2.3	The title of the Alternative 6 is corrected (See PDD, p.13).	The response is accepted.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
Alternative 6.			This CAR is closed based on the adequate amendments made to the PDD, Section B.1.
CAR 21. The assessment with regard to the provisions of paragraph 11 of the JISC Guidance for baseline setting and monitoring [3, para 11] towards to the project's spatial boundaries definition is not presented in PDD Section B.3 with regard to the incoming flows of the pellets and sinter [2].	B.3.1	According to the plant data, iron ore raw material, sinter and pellets do not contain carbon and consequently do not influence the CO_2 emissions that are due to the BFS molten iron production. Therefore, the incoming flows of the pellets and sinter are not considered during the project boundary establishment in section B.3 of the PDD (See PDD, p.23). See also response to CAR 14.	The response is accepted. This CAR is closed based on the adequate amendments made to the PDD, Section B.3.
CAR 22. Please indicate and substantiate the project's starting date having in mind that the presented to the verifier spreadsheets for invest analysis calculation states the project starting date as Q4 2002 [2].	C.1.1	Project starting date is changed to the 1st of October 2002, which is the date of construction operations commencement on the reconstruction BF #6 and corresponds to the initial data for the invest analysis calculation (See PDD, p.30). Therefore, the incoming flows of the pellets and sinter are not considered during the project boundary establishment in section B.3 of the PDD (See PDD, p.23). See also response to CAR 14.	The response is accepted. This CAR is closed based on the adequate corrections made to the PDD, Section B.3.
CAR 23. The project's operational lifetime in months is not defined [2].	C.3.1	Project's operational lifetime is defined as the time of work of the new reconstructed BF between the 1st category capital repairs – 15 years (180 months), according to the "Provisions for the technical maintenance and repair of mechanical equipment of the USSR fer-	The response is accepted. This CAR is closed based on the adequate correc-

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
		rous metallurgy system enterprises (TMR)" of 1983 (See PDD, p.30). Reference on this document is included into the description of the investment analisys assumption (See PDD, p.24).	tions made to the PDD, Section C.2
CAR 24. The length of the crediting period in months is not defined [2].	C.4.1	The length of the crediting period in months is estimated at 60 months (See PDD, p.30).	The response is accepted. This CAR is closed based on the adequate corrections made to the PDD, Section C.3.
CAR 25. Please explicitly indicate which of the approaches regarding monitoring, defined in the JISC's Guidance on criteria for baseline setting and monitoring is chosen [2].	D.1. 1	Selection of baseline is made based on the demands of the "Guidance on criteria for baseline setting and monitoring" and given the requirements of Decision 9/CMP.1, Appendix B "Criteria for baseline setting and monitoring". The project developer used project-specific approach for establishing the monitoring, since among the approved CDM methodologies for baseline and monitoring there is not a single one that would be associated with the steel-making sector. According to the Guidance on criteria for baseline setting and monitoring during the monitoring plan setting the project developer can use individual elements of the approved CDM baseline and monitoring methodologies, as appropriate. When choosing the vintage of data for the "NTMK" blast fur-	The response is accepted provided the explanation, given as to the use of selected elements of the approved CDM methodology AM0068 Methodology for improved energy efficiency by modifying ferroalloy production facility --- Version 1 in line with the response to CAR 10. The response is accepted.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
		nace shop baseline specific consumption of materials and energy carriers ex-ante estimation, the developer used the elements of AM0068 Methodology for improved energy efficiency by modifying ferroalloy production facility --- Version 1 (Scope 9: Metal production) in line with approach used during baseline setting in Section B.1 (See PDD, p.31).	The CAR is closed.
CAR 26. There is no description in PDD of the assumption to monitor coke instead of coking coal for molten iron production, taking into account that coke was taken out of CO2 emissions calculation as stated in Section B.1, page 18. Please state how uncertainties are taken into account and conservativeness is safeguarded with regard to the above applied assumption as per [2].	D.1. 1	Only the total amount of the coking coal, used for the coke production is registered at the "NTMK". Therefore, the calculation of the coking coal amount, required for every BF, is made based on the data on the BF coke consumption and the known factor of coke yield from the coking coal. This approach allows for the vivid demonstration of the fuel consumption reduction at the reconstructed BF #5 and #6, as compared to the old furnaces. Thus, the data on the BF coke consumption is used only for the calculation of the used coking coal. It is not considered directly during the CO_2 emissions' calculation to avoid the duplication of the data on carbon consumption for molten iron production. (See PDD, pp.23-24).	The response is accepted. This CAR is closed based on a concise explanation and amendments. made in PDD.
CAR 27. The project monitoring plan does not consider CO2 emissions due to: - electricity consumption for nitrogen pro-	D.1.1	According to the "NTMK" data, the electricity consumption for oxygen generation amounted to 629,8 KW*hrc/thou.m^3 in 2006-2008 and included all the con-	The response is accepted. This CAR is closed based

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
duction used in the Central Bell Less Top with rotary hopper and coolant system BF #5 and BF #6; - electricity consumption for CCO end products production.		sumption of electricity used for generation of all products of air separation, including nitrogen. Therefore, the data on the electricity consumption for nitrogen production, used in the blast furnace shop, is already included into the monitoring plan, being a part of the figure on electricity consumption for oxygen generation (See PDD, Table D.2, p.40). The PDD includes the calculation of the consumption of electricity for the production of the final CCO – the coke. However, no separate recording of the electricity spent for the coke gas and its side products generation is done. As is shown in section B.1, the project realization does not affect the CCO, and the specific consumption of electricity, used for the CCO products generation, remains constant. Then there will be the reduction of the amount of the produced associated CCO products, as a result of the coke consumption reduction according to the project scenario. Therefore, the need in the electricity for the production of these products according to the project scenario will be reduced as compared to the baseline scenario. Thus, the electricity consumption for the production of the associated CCO products is excluded from the monitoring plan, which is a conservative assumption	on a concise explanation and amendments made to PDD Section D.1.1.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
		(See PDD, p.39).	
CAR 28. Please clearly distinguish why the project consumption of coke, limestone, natural gas, steam and blast air, electricity, oxygen and recycle water at BF #1 and #4 are fixed ex-ante based on the historical data for 2001-2003 while the actual molten iron production for BF #1 and #4 are monitored in 2008 (refer to PDD Section B.2, page 15 and Section D.1. page 25) [3]. The same issue of concern is relevant to BF #1, 4, 5, 6 with regard to the constants, related to the CCO, BFS and TPP-steam blower operations, which were calculated in PDD Section B.1 for the baseline scenario, and fixed ex-ante for the calculation of actual project CO2 emissions within the project boundary (refer to PDD Section B.1, page 13-14, Table B.4 and Section D.1.1.2 Table D.1)	D.1.3	Specific consumption of raw materials, fuel and energy carriers at BF #1 and #4 in 2008, considered during the calculation of the project CO2 emissions, are accepted based on the 2008 actual data in compliance with the approach, applicable for BF #5 and #6 and the project monitoring plan (See PDD, p.19). Constants, related to the CCO, BFS and TPP-steam blower operations, are calculated by the same technique both for baseline and project scenarios, since the activity under the project does not affect theses divisions of "NTMK". In order to establish these constants the data for the last three years of operations was used (2006-2008) in compliance with the requirements of the AM0068 methodology. See also response to CAR 10.	The response is accepted. This CAR is closed based on a concise explanations and ccorrections made to PDD Section B.1, p.19 as follows:" The actual performance indexes of BF ##1, 4, 5 and #6 in 2008, required for the calculation of project CO2 emissions, are taken based on the "NTMK" BFS reports: "Fulfillment of the molten iron production plan" and "Consumption, entry and remains of raw materials, fuel and other resources" for 2008 and are presented in table B.8". The described approach was applied to the constants, related to the

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
			CCO, BFS and TPP-steam blower operations at BF #1, 4, 5, 6. It was carefully checked by the verifier.
CAR 29. Table D.1 Section D.1.1.1 does not include parameters as follows: - $SC_{BF\ X\ PJ}$ – specific consumption of coke, limestone, natural gas, steam and blast air at BF $_x$; - $SC_{BF\ X\ PJ}$ – specific consumption of electricity, oxygen and recycle water at BF *x*, MW •hr (m3) /t; Net calorific value of natural gas used at "NTMK".	D.1.3	Table D.1 presents the constants, used for "NTMK" project CO_2 emissions monitoring. The parameters, specified in CAR 29, are not constants. Specific consumption of coke, limestone, natural gas, steam, blast air, electricity, oxygen and recycle water at BF *x* can be calculated during monitoring by the following formulae: $SC_{BF\ X\ PJ\ Y} = C_{BF\ X\ PJ} / P_{BF\ X\ PJ\ Y}$, where $P_{BF\ X\ PJ\ Y}$ – project molten iron production at BF *x*, measured during monitoring according to table D.1.1.1, t ; $C_{BF\ X\ PJ}$ – consumption of coke, limestone, natural gas, steam, blast air, electricity, oxygen and recycle water at BF *x*, measured during monitoring according to table D.1.1.1, MW •hr (m^3); *X* – BF number. However, as is demonstrated in section D.1.1.2, for the calculation of project CO2 emissions, not specific, but general data on the consumption of coke, limestone, natural gas, steam and blast air at each of the	The response is accepted. This CAR is closed based on concise explanations to the verifier.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
		furnaces is used. Net calorific value of natural gas also is measured during monitoring according to table D.1.1.1 (P-38). Thus, there is no need to include this data into Table D.1 of Section D.1.1.1.	
CAR 30. The data in PDD Section D.1.1.3 are indicated as measured what does not reflect the baseline approach described in Section D.1.1.4, page 35 and Section B.1, page 12, under which all the data are estimated and/or calculated.	D.1.5	Total baseline molten iron production within the project boundary, as defined in section B.1, is equal to the project production. During the baseline monitoring, the BF ##1-5 molten iron production figures are calculated based on the data on the molten iron production data, acquired during the project scenario monitoring. Table D.1.1.3 should include the data, the monitoring of which is necessary for the calculation of the project emissions. Therefore, amongst other figures, this Table includes the data on the BF ##1, 4, 5, 6 molten iron production, which are measured during the project scenario monitoring (P-1,10, 19, 28). Besides, table D.1.1.3 now includes the data on the net calorific value of the natural gas, supplied to "NTMK", calculated during the monitoring process according to the project scenario (See PDD, p.43). Baseline approach described in Section D.1.1.4 is altered to reflect the given technique of the baseline pa-	The response is accepted. This CAR is closed based on a concise explanation and amendments made to PDD Section D.1.1.4.

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		rameters calculation.	
CAR 31. Please ensure the correct dimension of parameters as follows SO_{Benz} , Benzol yield from coking coal; SO_{Naph} , Naphthalene yield from coking coal in PDD Section D.1.1.2, page 28, used in formulae (D.24), page 37.	D.1.5	Changes are made, in order to adjust formulae (D.24) and Table D.1 (See PDD, pp.37,46).	The response is accepted. This CAR is closed based on a concise corrections made to PDD Section D.1.1.2
CAR 32. Please ensure the correspondence of data in Section D.1.1.3 PDD, page 35 with the key information and data used to establish the baseline presented in Annex 2.	D.1.5	Tables D.1.1.1 and D.1.1.3 are adjusted according to the key information used to establish the baseline presented in Annex 2. The following standard data in included into tables D.1.1.1 and D.1.1.3: — natural gas emission factor; — emission factor during power generation in the RF energy system; — carbon content in limestone (See PDD, pp.35-36,43-44).	The response is accepted. This CAR is closed based on a concise corrections made to PDD Section D.1.1.1 and D.1.1.3.
CAR 33. References to the Russian Federation regulations with regard to the environmental impacts of the project are not provided in PDD as required in [2], Section D.1.5.	D.1.14	Section D.1.5 includes information on the acts of state authorities based on which the monitoring of the project environmental impact is carried out (See PDD, pp. 50-51).	The response is accepted. This CAR is closed based on a concise amendments made to PDD Section D.1.5.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
CAR 34. Please list the documentation in the PDD [2].	F.1.1	The link to the RF Urban-planning codex is added to section F.1, which obligates the inclusion of the section on the "Environmental protection" in the PDD for getting the approval on the object construction and operation (See PDD, p.81).	The response is accepted. This CAR is closed based on a concise amendments made to PDD Section F.1.
CL 01. Please clarify if provisions for meeting training needs with regards monitoring are made if appropriate.	A.4.2.4	During the project realization, the training of workers, maintenance personnel, specialists and shop managers in terms of the use of the state-of-the-art technologies, included into the new BF design, is planned: - training of workers under the BF equipment delivery contract with VAI; - training courses for the qualification upgrade foe managers and BFS specialists "Work with the BF automation system"; - qualification upgrade courses for personnel "BF electric equipment and its maintenance"; - qualification upgrade courses for personnel "Aspiration system operation and maintenance" (See PDD, p.10).	The response is accepted. This CL is closed based on a concise explanation and amendments made to PDD Section A.4.2. The sufficient provisions for training have been provided to the verifier on the site visit.
CL 02. Please clarify the choice of the planning horizon of 21 years in the investment analysis.	B.2.1	The planning horizon was determined in compliance with the investment period timeline, which is 5 years (BF reconstruction during 2002-2006) and the reconstructed BF service life – 15 years, according to the "Provisions for the technical maintenance and repair of	The response is accepted. This CL is closed based on a concise explanation and amendments made to

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
		mechanical equipment of the USSR ferrous metallurgy system enterprises (TMR)" of 1983. Thus, the total duration of the investment planning period is 20 years (2002-2021). See PDD, p.24.	PDD Section B.2. The planning horizon duration was discussed with the top managers of the "NTMK" during the site visit. The arguments were accepted by the verifier.
CL 03. Please clarify the share of investments for the BF ##1, 4 and 5 obligatory first category capital repairs compared with the total project investments to justify that the scenario 1 would be most economically or financially attractive alternative scenario.	B.2.1	According to the "NTMK" data, total baseline investment volume is 72 mln. USD (See PDD, p.25). Project investment expenditures is 281.9 mln. USD. Total baseline investment volume 72 mln. USD is the capital expenditures for the 1st category capital repairs for BF#1,4 and 5 throughout 2005-2012 (See PDD, p.16,25). Other investment expenditures are not required for the baseline BFS operations.	The response is accepted. This CL is closed based on a concise explanation and amendments made to PDD Section B.2.
CL 04. Please clarify in PDD Sections D.1 the date of BF #1 and #4 operations shutdown (refer to PDD Section B.1, p.15 and Section D.1, p.25).	D.1.3	BF #4 was shut down in November of 2008, and BF #1-on January 7th of 2009, and BF #1 thereat was in the cooling regime prior to its shutdown as was operated with very low efficiency. Therefore the 2009 figures pertaining this BF are not considered. It is accepted that the year of 2008 was the year of BF #1 and #4 operations shutdown. (See PDD, p.31)	The response is accepted. This CL is closed based on a concise explanation and amendments made to PDD Section D.1.3.
CL 05. Please clarify whether the total yearly electricity consumption within the project	E.1.2	Electricity, generation by TPRT, is included into the calculation of the total electricity consumption within the	The response is accepted.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
boundary includes the yearly TPRT electricity generation (ref. PDD, Section E.1, Formulae (E.17)).		project boundary as the positive flow. Comments to formula E.17 include this remark (See PDD, p.68).	This CL is closed based on a concise explanation and amendments made to PDD Section E.1.2, p.68.

Appendix B: Verifiers CV's

Ms. Vera Skitina, PhD (metallurgical)
Lead Verifier
Bureau Veritas Certification Rus Technical Director - Lead Auditor, Lead Tutor, Lead Verifier

She has over 15 years of experience in powder metallurgy, aluminium metallurgy, plastic metal working, physical-chemistry processes, gas production at power plant, environmental science. She worked in Irkutsk Aluminium Plant, SUAL powder metallurgy plant, Nadvoitzky aluminium plant, Central Scientific Institute of Metals. She is a Lead auditor of Bureau Veritas Certification for Quality Management Systems (IRCA registered), Environmental Management System (IRCA registered), Occupational Health and Safety Management System (IRCA registered). She performed over 200 audits since 2004. Also she is a Lead Tutor of the IRCA registered ISO 14000 EMS Lead Auditor Training Course, and a Lead Tutor of the IRCA registered ISO 9001 Lead Auditor Training Course. She is an Assuror of Social Reports. She has undergone intensive training on Clean Development Mechanism /Joint Implementation and was/is involved in the determination of over 15 JI projects and verification of 2 JI projects.

Mr. Leonid Yaskin, PhD (thermal engineering)
Lead Verifier.
Bureau Veritas Certification Rus General Director- Lead Auditor, Lead Tutor, Lead Verifier

He has over 30 years of experience in heat and power R&D, engineering, and management, environmental science and investment analysis of projects. He worked in Krrzhizhanovsky Power Engineering Institute, All-Russian Teploelectroproject Institute, JSC Energoperspectiva. He worked for 8 years on behalf of European Commission as a monitor of Technical Assistance Projects. He is a Lead auditor of Bureau Veritas Certification for Quality Management Systems (IRCA registered), Environmental Management System (IRCA registered), Occupational Health and Safety Management System (IRCA registered). He performed over 250 audits since 2002. Also he is a Lead Tutor of the IRCA registered ISO 14000 EMS Lead Auditor Training Course, and a Lead Tutor of the IRCA registered OHSAS 18001 Lead Auditor Training Course. He is an Assuror of Social Reports. He has undergone intensive training on Clean Development Mechanism /Joint Implementation and was/is involved in the determination of over 40 JI projects.

Mr. Flavio Gomes:
Lead Verifier
Bureau Veritas Certification Holding SAS – Global Manager for Climate Change

Flavio Gomes is a Chemical and Safety Engineer graduated from «UNICAMP – Universidade Estadual de Campinas», with a MSc title in Civil Engineer (Sanitation). He spent four years at RIPASA Pulp and Paper as Environmental Process Engineer. He is, since 2006 the Global Manager for Climate Change. Previously and since 1997, he was senior developer for Bureau Veritas Consulting in fields of Environment, Health, Safety, Social Accountability and Sustainability audit and management systems. He also acted as Clean Development Mechanism verifier, and Social/Environmental Report auditor, in the name of Bureau Veritas Certification. Flavio is pursuing his PhD on Energy Management at the Imperial College – London.