Bureau Veritas Certification Holding SAS

BUREAU VERITAS
CERTIFICATION
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DETERMINATION REPORT

CHELYABINSK ELECTRO-METALLURGICAL INTEGRATED PLANT JOINT-STOCK COMPANY

DETERMINATION OF THE

"THE IMPLEMENTATION OF ENERGY EFFICIENCY MEASURES AT CHELYABINSK ELECTROMETALLURGICAL WORKS, OJSC"

REPORT NO. RUSSIA-DET/0126/2011

REVISION NO. 02

BUREAU VERITAS CERTIFICATION

Report No: Russia-det/0126/2011 rev.02

DETERMINATION REPORT ON JI PROJECT

"THE IMPLEMENTATION OF ENERGY EFFICIENCY MEASURES AT CHELYABINSK ELECTROMETALLURGICAL WORKS, OJSC"

Date of first issue: 09/08/2011	Organizational unit: Bureau Veritas Certification Holding SAS
Client: CJSC National Carbon Sequestration Foundation	Client ref.: Mr. Yuriy Fedorov

Summary:
Bureau Veritas Certification has made the determination of the "The implementation of energy efficiency measures at Chelyabinsk Electrometallurgical Works, OJSC" project of Chelyabinsk Electro-Metallurgical Integrated Plant Joint-Stock Company located in Chelyabinsk, Chelyabinsk Region, Russian Federation on the basis of UNFCCC criteria for the JI, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 6 of the Kyoto Protocol, the JI rules and modalities and the subsequent decisions by the JI Supervisory Committee, as well as the host country criteria.

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

The first output of the determination process is a list of 24 Corrective Actions Requests and 2 Clarification Requests presented in Appendix A. Taking into account this output, the project proponent revised its project design document.

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

Report No.: Russia-det/0126/2011 rev.02	Subject Group: JI	
Project title: "The implementation of energy efficiency measures at Chelyabinsk Electrometallurgical Works, OJSC"		
Work carried out by: Andrey Rodionov – Lead verifier		
Work reviewed by: Vera Skitina – Internal Technical Reviewer		
Work approved by: Leonid Yaskin – Operational Manager		
Date of this revision: 12/08/2011	Rev. No.: 02	Number of pages: 50

Abbreviations

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

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1 INTRODUCTION

CJSC National Carbon Sequestration Foundation (hereafter called NCSF) has commissioned Bureau Veritas Certification to determine its JI project "The implementation of energy efficiency measures at Chelyabinsk Electrometallurgical Works, OJSC" (hereafter called "the project") located in Chelyabinsk, Chelyabinsk Region, Russian Federation.

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

1.1 Objective

The determination serves as project design verification and is a requirement of all projects. The determination is an independent third party assessment of the project design. In particular, the project's baseline, the monitoring plan (MP), and the project's compliance with relevant UNFCCC and host country criteria are determined in order to confirm that the project design, as documented, is sound and reasonable, and meets the stated requirements and identified criteria. Determination is a requirement for all JI projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of emissions reductions units (ERUs).

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

1.2 Scope

The determination scope is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations.

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

1.3 Determination team

The determination team consists of the following personnel:

Andrey Rodionov
Bureau Veritas Certification, Lead Verifier

This verification report was reviewed by:
Vera Skitina
Bureau Veritas Certification, Internal Technical Reviewer

2 METHODOLOGY

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

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

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

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

2.1 Review of Documents

The Project Design Document (PDD) submitted by NCSF and additional background documents related to the project design and baseline, i.e. country Law, Guidelines for users of the joint implementation project design document form, Approved CDM methodology and/or Guidance on criteria for baseline setting and monitoring, Kyoto Protocol to be Checked by an Accredited Independent Entity were reviewed.

The first deliverable of the document review was the Determination Protocol dated 18/04/2011 which contained 24 CARs and 2 CLs.

To address Bureau Veritas Certification corrective action and clarification requests, NCSF revised the PDD v. 01 dated 14/02/11 and resubmitted final PDD version 04 on 02/08/2011.

The determination findings presented in this report relate to the project as described in the final PDD version 04 dated 02/08/2011 /1/.

2.2 Follow-up Interviews

On 17/06/2011 Bureau Veritas Certification performed on-site interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of Chelyabinsk Electro-Metallurgical Integrated Plant Joint-Stock Company (hereafter called OJSC ChEMW) were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

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

2.3 Resolution of Clarification and Corrective Action Requests

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

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

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

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

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

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

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

3 PROJECT DESCRIPTION (excerpts from PDD)

The project mission is to reduce power consumption during ferrosilicon production at Chelyabinsk Electrometallurgical Works, OJSC and to reduce greenhouse gas emissions.

Chelyabinsk Electrometallurgical Works, OJSC, is located in the Chelyabinsk Region (the Southern Urals, Russia), and is the largest ferroalloy producer in the Russian Federation. Its market share in the ferrosilicon market in Russia is about 40%.

Ferrous alloys are the iron-based alloys of silicon, manganese, chromium and tungsten, and other elements, which are used in steelmaking for the improvement of its properties and alloying. Ores are the feed stock for ferrous alloying. Thus, in ferrosilicon production they use ores rich in reducible silicon oxide (quartzite). Ferrosilicon is smelted in reduction electric arc ferroalloy melting furnaces, which are in continuous operation and consume a lot of power.

Before the project started, ChEMW, OJSC had used quartzite from the Bakalskoe deposit in silicon alloy production. The Bakalskoe deposit is also located in the Chelyabinsk Region, 270 km from the plant. But,

despite the 50-year experience of using quartzite from the Bakalskoe deposit and its satisfactory quality, in 2004 ChEMW began to use another type of quartzite, mined at the Antonovskoe deposit located in the Kemerovo Region (Siberia), 1710 km from the plant. Quartzite from the Antonovskoe deposit has a higher reduction ratio as compared to quartzite from the Bakalskoe deposit, as well as less slag-forming impurities, which lead to molten slag formation and a decrease in the reduction ratio. Besides, low alumina content in quartzite from the Antonovskoe deposit enabled ferrosilicon to be produced which was poor in aluminum without additional expenditures on ladle treatment.

Thus, the implementation of ferrosilicon smelting technology with the use of quartzite from the Antonovskoe deposit instead of quartzite from the Bakalskoe deposit made it possible to increase the furnace capacity, reduce silicon losses and reduce the specific electrical energy consumption.

4 DETERMINATION CONCLUSIONS

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

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

The Clarification and Corrective Action Requests are stated, where applicable, in the following sections and are further documented in the Determination Protocol in Appendix A. The determination of the Project resulted in 24 Corrective Action Requests and 2 Clarification Requests.

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

4.1 Project approvals by Parties involved (19-20)

The project has no approvals by the Host Party, therefore CAR 04 remains pending.

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

Outstanding issues related to Project approvals by Parties involved (19-20), PP's response and the AIE conclusion are summarized in Appendix A Table 2 (refer to CAR 04).

4.2 Authorization of project participants by Parties involved (21)

The participation for OJSC ChEMW listed as project participant in the PDD is not authorized by the Host Party because the project approval by the Host Party was not received. Party B is not determined.

The authorization is deemed to be carried out through the issuance of the project approvals.

4.3 Baseline setting (22-26)

The PDD explicitly indicates that using a methodology for baseline setting and monitoring developed in accordance with appendix B of the JI guidelines (hereinafter referred to as JI specific approach) was the selected approach for identifying the baseline.

JI specific approach

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

(a) By listing and describing the following plausible future scenarios on the basis of conservative assumptions and selecting the most plausible one being Alternative1:
   a. Alternative 1: Ferrosilicon production at ChEMW, OJSC using quartzite from the Bakalskoe deposit (i.e. maintaining the situation which existed before the project started);
   b. Alternative 2: Ferrosilicon production at ChEMW, OJSC using quartzite from the Antonovskoe deposit (the project itself without considering its registration as a JI-activity);
   c. Alternative 3: Ferrosilicon production at ChEMW, OJSC using quartzite from other deposits;

(b) Taking into account relevant national and/or sectoral policies and circumstances, such as sectoral reform initiatives, local fuel availability, power sector expansion plans, and the economic situation in the project sector. In this context, the following key factors that affect a baseline are taken into account:
   a. Sectoral reform policies and legislation in steel industry.
      The PDD refers to the main development goal of the metallurgical industry is satisfaction of domestic metal demand.
      Project activity and baseline scenario are in line with the mentioned goals (refer to PDD, Section B.1). Alternative 3 doesn't provide the growth of metal production competitive ability;

b. Economic situation in Russian steel industry and predicted demand.
   The PDD shows that the total output and quality of goods of the project activity and baseline scenario meet the market requirement and predicted demand. Alternative 3 provides lower quality of goods than under Alternative 1 and 2;
c. Availability of capital to OJSC ChEMW (including investment barriers).
   PDD shows that the capital is available but with the high bank rate and it is necessary to produce goods without additional investment. The PDD shows that using quartzite from the Bakalskoe deposit, the ferrosilicon production cost is lower than using quartzite from the Antonovskoe deposit. Thus, Alternative 1 is the most economically attractive. This aspect is considered during additionality proof (Section B.2);
d. Local availability of technology/techniques and equipment.
   The PDD shows that Alternative 1 is more attractive in terms of human skill in technology and techniques. This aspect was considered during baseline setting and additionality proof;
e. Price and availability of fuel.
   PDD shows that there are enough fuel resources in Russia and fuel prices are reasonable. Detailed information about materials consumption and their cost under the project activity and baseline scenario is given in the PDD, Sections B.1 and B.2.

After screening the second and the third alternatives Alternative 1 is left as the most plausible baseline scenario, namely:

Ferrosilicon production at ChEMW, OJSC using quartzite from the Bakalskoe deposit (i.e. maintaining the situation which existed before the project started).

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

(a) Alternative 1 is in line with the main development goal of the metallurgical industry;
(b) Alternative 1 is more attractive in terms of human skill in technology and techniques;
(c) Alternative 1 is the most economically attractive.

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

Outstanding issues related to Baseline setting (23), PP's response and the AIE conclusion are summarized in Appendix A Table 2 (refer to CARs 07-09).

4.4 Additionality (27-31)

JI specific approach

A JI-specific approach is chosen for justification of additionality. For this purpose the option a) is chosen defined in paragraph 2 of the Annex I to the Guidance on criteria for baseline setting and monitoring (Version 02). It envisages provision of traceable and transparent information showing that the baseline was identified on the basis of conservative assumptions (refer to PDD Section B.1), that the project scenario is not part of the identified baseline scenario and that the project will lead to emission reductions.

The following step-wise approach was applied:

Step 1. Indication and description of the approach applied: this is a JI-specific approach, based on the proofs that the project activity would not otherwise occur due to existence of the financial barrier (result of financial analysis) and that it is not a common practice.

Step 2. Application of the approach chosen including provision of additionality proofs:

- PDD developer described and scrutinized plausible alternative scenarios which have been provided in Section B.1. Alternative 3: "Ferrosilicon production at ChEMW, OJSC using quartzite from other deposits" is neglected due to existence of technological barrier;
- Financial barrier is justified through the financial analysis and includes the evaluation of the project's and baseline 's production cost. Production cost of ferrosilicon under baseline scenario is lower then under project and so the baseline is more financial attractive scenario;
- The sensitivity analysis of variations of key parameters confirms the conclusion of the basic investment analysis.
- The common practice analysis has reasonably shown that the proposed JI project does not represent a widely observed practice in the geographical area concerned.

Step 3. The spreadsheets with the investment and sensitivity analyses were made available for the verifier.

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

Outstanding issues related to Additionality (29), PP's response and the AIE conclusion are summarized in Appendix A Table 2 (refer to CARs 10-12).

4.5 Project boundary (32-33)

JI specific approach

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

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

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

Outstanding issues related to Project boundary (32), PP's response and the AIE conclusion are summarized in Appendix A Table 2 (refer to CARs 13 and 14).

4.6 Crediting period (34)

The PDD states the starting date of the project as the date on which the implementation or construction or real action of the project will begin or began, and the starting date is 07/02/2004, which is after the beginning of 2000.

The PDD states the expected operational lifetime of the project in years and months, which is 15 years or 180 months.

The PDD states the length of the crediting period in years and months, which is 5 years or 60 months, and its starting date as 01/01/2008, which is on the date the first emission reductions are generated by the project.

Outstanding issues related to Crediting period (34), PP's response and the AIE conclusion are summarized in Appendix A Table 2 (refer to CL 01).

4.7 Monitoring plan (35-39)

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

JI specific approach

The monitoring plan describes all relevant factors and key characteristics that will be monitored, and the period in which they will be monitored, in particular also all decisive factors for the control and reporting of project performance (refer to PDD, Sections B.1, D. 1.1.1, D.1.1.3 and D.1.3.1).

The monitoring plan specifies the indicators, constants and variables that are reliable (i.e. provide consistent and accurate values), valid (i.e. be clearly connected with the effect to be measured), and that provide a transparent picture of the emission reductions to be monitored (refer to PDD, Sections B.1, D. 1.1.1, D.1.1.3 and D.1.3.1).

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

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

The monitoring plan explicitly and clearly distinguishes:

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

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

(iii) Data and parameters that are monitored throughout the crediting period, such as electrical energy consumption, output of grade, silicon weight content in the alloy (refer to PDD, Sections D.1.1.1 and D.1.1.3).

Step-by-step application of the used approach for monitoring is described in PDD Section D and Annex 2 including monitoring procedures, formulae, parameters and data sources. The monitoring plan elaborates all algorithms and formulae used for the estimation of baseline emissions and project emissions refer to PDD, Sections D.1.1.2 and D.1.1.4. The internal quality system at OJSC ChEMW is functioning in accordance with the national standards and regulations in force. OJSC ChEMW has implemented procedures for monitoring and measuring system in

accordance with the federal law N102 about ensuring the uniformity of measurements.

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

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

The monitoring plan clearly identifies the responsibilities and the authority regarding the monitoring activities. All monitoring data are transferred to Engineering Department for preparing reports on GHG emission reduction (refer to PDD, Section D.3). The monitoring report is approved by the General Director.

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

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

The monitoring plan provides, in tabular form, a complete compilation of the data that need to be collected for its application, including data that are measured or sampled and data that are collected from other sources but not including data that are calculated with equations

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

Outstanding issues related to Monitoring plan (36), PP's response and the AIE conclusion are summarized in Appendix A Table 2 (refer to CARs 14-22 and CL 02).

4.8 Leakage (40-41)

JI specific approach

The PDD appropriately describes an assessment of the potential leakage of the project which is associated with transportation of quartzite by trains from Antonovskoe deposit (refer to PDD, Section D.1.3.2).

Outstanding issues related to Leaage (40-41), PP's response and the AIE conclusion are summarized in Appendix A Table 2 (refer to CARs 22-24).

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

JI specific approach

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

The PDD provides the ex ante estimates of:

(a) Emissions for the project scenario (within the project boundary), which are 3,113,093 tons of CO2eq;

(b) Emissions for the Leakage which are 38,045 tons of CO2eq;

(c) Emissions for the baseline scenario (within the project boundary), which are 3,455,811 tons of CO2eq;

Emission reductions (based on (c)-(a)-(b) above), which are

(d) 304,673 tons of CO2eq.

Reporting period: From 01/01/2008 to 31/12/2012.

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

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

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

The estimates referred to above are consistent throughout the PDD.

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

The PDD Section E includes an illustrative ex ante emissions calculation /1/.

4.10 Environmental impacts (48)

The PDD justified that the project does not require any supplemental support documentation related to the environmental impact analysis, and approval by the State Environmental Expert Review. The project is not undertaking any new construction, sanitary zone expansion or new equipment installation.

4.11 Stakeholder consultation (49)

Public hearings were not organized.

4.12 Determination regarding small scale projects (50-57)

Not applicable.

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

Not applicable.

4.14 Determination regarding programmes of activities (65-73)

Not applicable.

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

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

6 DETERMINATION OPINION

Bureau Veritas Certification has performed a determination of the "The implementation of energy efficiency measures at Chelyabinsk Electrometallurgical Works, OJSC" project in Russia. The determination was performed on the basis of UNFCCC criteria and host country criteria and also on the criteria given to provide for consistent project operations, monitoring and reporting.

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

Project participant used the JI specific approach for demonstration of the additionality. In line with this approach, the PDD provides investment analysis and common practice analysis to determine that the project activity itself is not the baseline scenario.

Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. Given that the project is implemented and maintained as designed, the project is likely to achieve the estimated amount of emission reductions.

The review of the project design documentation and the subsequent follow-up interviews have provided Bureau Veritas Certification with sufficient evidence to determine the fulfilment of stated criteria.

The determination revealed one pending issue related to the current determination stage of the project: the issue of the written approval of the Parties involved. If the written approval and the authorization by the host Party are awarded, it is our opinion that the project as described in the Project Design Document, Version 04 dated 02/08/11 meets all the relevant UNFCCC requirements for the determination stage and the relevant host Party criteria.

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

7 REFERENCES

Category 1 Documents:
Documents provided by Type the name of the company that relate directly to the GHG components of the project.

/1/ PDD "The implementation of energy efficiency measures at Chelyabinsk Electrometallurgical Works, OJSC", Version 01, dated 14/02/11

PDD "The implementation of energy efficiency measures at Chelyabinsk Electrometallurgical Works, OJSC", Version 04, dated 02/08/11

Supporting documentation:

a. Calculation_GHG_reduction@invest_analyses 19.07;

b. Prime cost of FS.

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

/3/ Guidance on criteria for baseline setting and monitoring (Version 02).

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

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

/1/ Article "Kinetics of interaction between the Antonovskiy quartzite and graphite", Thematic collection of ferroalloy production N4, Moscow, 1975

/2/ GOST 24991-81

/3/ Technical reports of OJSC ChEMW , shop N1, 2001, shop N2, 2008

/4/ Technical reports of OJSC Kuznetskiy ferroalloy plant , shop N1, 2003

/5/ Technical report on pilot work of using the Antonovskiy quartzite in OJSC ChEMW, 2004

/6/ Schedule N13 and N46 for pilot work of using the Antonovskiy quartzite in OJSC ChEMW, 2003

/7/ Agreement for Antonovskiy quartzite delivering for OJSC ChEMW, 2003

/8/ Schedule of supplies of Antonovskiy quartzite to OJSC ChEMW, 2003

/9/ Protocol of meeting of pilot work result and project implementation, 2003

/10/ Protocol of meeting N 4-06-38 (JI history evidence) of project implementation, 2003

/11/ Cost analysis, 2002

/12/ Dynamic of shipping operations and specific power inputs, Russian railway, 2004-2012

/13/ Certificate of measuring laboratory until 2012

/14/ Arial of measuring laboratory accreditation, 2007

/15/ Schedule for strain-gauge balances calibration, 2010
/16/ Weighing machine, passport with calibration evidence until 2011
/17/ Watthourmeters, passports with calibration evidence
/18/ Permit for pollutant emissions, Rostehnadzor, 2002-2015

Persons interviewed:

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

/1/ S. Slascheva – OJSC ChEMW, Director for finance and economy
/2/ D.Rakitin – OJSC ChEMW, Chief technologist
/3/ A.Shinkin – OJSC ChEMW, Head of technical department
/4/ M. Zheleznyak – OJSC ChEMW, Chief specialist of technical department
/5/ L. Osminina – OJSC ChEMW, Leading engineer of technical department
/6/ D. Tezin – OJSC ChEMW, Chief metrologist
/7/ V. Gurvich – OJSC ChEMW, Deputy chief metrologist
/8/ S. Postnikov – OJSC ChEMW, Head of the central plant laboratory
/9/ M. Ustianseva – OJSC ChEMW, Chief economist
/10/ E. Baydakova – NSCF, Senior expert Project Development Department

Appendix A: company PROJECT Determination Protocol

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

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
General description of the project				
Title of the project				
-	Is the title of the project presented?	The title of the project is: "The implementation of energy efficiency measures at Chelyabinsk Electrometallurgical Works, OJSC".		
-	Is the sectoral scope to which the project pertains presented?	**CAR 01.** The indicated sectoral scope (3) Energy demand is incorrect. Please change it to sectoral scope (9) Metal production.	CAR 01	OK
-	Is the current version number of the document presented?	The PDD version 01 was originally presented to Bureau Veritas and reviewed as a part of determination. The current version of the PDD is 04.		OK
-	Is the date when the document was completed presented?	PDD v.04 is dated 02/08/2011.		OK
Description of the project				
-	Is the purpose of the project included with a concise, summarizing explanation (max. 1-2 pages) of the: a) Situation existing prior to the starting date of the project; b) Baseline scenario; and c) Project scenario (expected outcome, including	The Project's purpose is to reduce power consumption during ferrosilicon production at Chelyabinsk Electrometallurgical Works, OJSC (hereafter called OJSC CheMW). The situation existed prior the project start along with brief description of project and baseline scenario is represented in section A.2. The management of OJSC CheMW decided to use the JI mechanism		OK

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
	a technical description). Is the history of the project (incl. its JI component) briefly summarized?	to compensate for the cost increase of ferrosilicon production when changing Bakalskoe deposit of quartzite to Antonovskoe (refer to Protocol of meeting N4-06-38 dated 19/03/2003).		
Project participants				
-	Are project participants and Party(ies) involved in the project listed?	Host Party is the Russian Federation (Party A). Party B is not identified.		OK
-	Is the data of the project participants presented in tabular format?	Yes.		OK
-	Is contact information provided in Annex 1 of the PDD?	The contact information is provided in PDD Annex 1.		OK
-	Is it indicated, if it is the case, if the Party involved is a host Party?	Host Party is the Russian Federation.		OK
Technical description of the project				
-	Host Party(ies)	The Russian Federation.		OK
-	Region/State/Province etc.	Chelyabinsk Region.		OK
-	City/Town/Community etc.	Chelyabinsk.		OK
-	Detail of the physical location, including information allowing the unique identification of the project. (This section should not exceed one page)	Sec. A 4.1.4. provides consistent information of the physical location and information of the unique identification of the project location. Chelyabinsk is situated in 1492 km to the east of Moscow. The address of OJSC CheMW: 80-p/80 Geroev Tankograda St., 454081 Chelyabinsk.		OK
Technologies to be employed, or measures, operations or actions to be implemented by the project				
-	Are the technology(ies) to be employed, or measures, operations or actions to be	Section A.4.2 PDD provides description of technology and measures	CAR 02	OK

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
	implemented by the project, including all relevant technical data and the implementation schedule described?	to be implemented to gain proposed emission reductions. **CAR 02.** Please provide the project implementation schedule. **CAR 03.** PDD, Section A.4.2, page 7 reads: "The silicon losses during ferrosilicon ladle treatment result in an increase in all of the specific output indicators." Please provide more detailed information about each specific output indicators.	CAR 03	OK
Brief explanation of how the anthropogenic emissions of greenhouse gases by sources are to be reduced by the proposed JI project, including why the emission reductions would not occur in the absence of the proposed project, taking into account national and/or sectoral policies and circumstances				
-	Is it explained briefly how anthropogenic GHG emission reductions are to be achieved? (This section should not exceed one page.)	It is briefly explained in PDD that the implementation of the project leads to anthropogenic GHG emission reduction due to the reduction of electric power consumption from the united power grid.		OK
Estimated amount of emission reductions over the crediting period				
-	Is the length of the crediting period Indicated?	The length of the crediting period is indicated to be 60 months.		OK
-	Are estimates of total as well as annual and average annual emission reductions in tonnes of CO2 equivalent provided?	Total as well as annual and average annual emission reductions in tonnes of CO2 equivalent are provided.		OK
Project approval by the Parties involved				
19	Have the DFPs of all Parties listed as "Parties involved" in the PDD provided written project approvals?	**CAR 04.** The project has no approval by Parties involved. **CAR 05**: The status of the project approval by a Party involved other than the host Party is not explained. The project approval by the Host Party will be provided after the determination statement is issued by the AIE.	CAR 04 CAR 05	Pending OK

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
19	Does the PDD identify at least the host Party as a "Party involved"?	It is indicated that the Russian Federation is the host Party.		OK
19	Has the DFP of the host Party issued a written project approval?	No, pending a response to CAR 04.	Pending	Pending
20	Are all the written project approvals by Parties involved unconditional?	Yes, the written project approvals by Parties involved are unconditional.		OK
Authorization of project participants by Parties involved				
21	Is each of the legal entities listed as project participants in the PDD authorized by a Party involved, which is also listed in the PDD, through: − A written project approval by a Party involved, explicitly indicating the name of the legal entity? or − Any other form of project participant authorization in writing, explicitly indicating the name of the legal entity?	Legal entity for Party A is OJSC CheMW. Party B is not identified. Project participants will be authorized with the issue of related project approvals. Pending a response to CAR 04 and CAR 05.	Pending	Pending
Baseline setting				
22	Does the PDD explicitly indicate which of the following approaches is used for identifying the baseline? − JI specific approach − Approved CDM methodology approach	**CAR 06.** PDD does not explicitly indicate which of the approaches is used for identifying the baseline. Revised PDD explicitly indicates that the JI specific approach is used for identifying the baseline.	CAR 06	OK
JI specific approach only				
23	Does the PDD provide a detailed theoretical description in a complete and transparent manner?	The revised PDD includes detailed theoretical description in a complete and transparent manner.		OK

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
23	Does the PDD provide justification that the baseline is established: (a) By listing and describing plausible future scenarios on the basis of conservative assumptions and selecting the most plausible one? (b) Taking into account relevant national and/or sectoral policies and circumstance? − Are key factors that affect a baseline taken into account? (c) In a transparent manner with regard to the choice of approaches, assumptions, methodologies, parameters, date sources and key factors? (d) Taking into account of uncertainties and using conservative assumptions? (e) In such a way that ERUs cannot be earned for decreases in activity levels outside the project or due to force majeure? (f) By drawing on the list of standard variables contained in appendix B to "Guidance on criteria for baseline setting and monitoring", as appropriate?	Three alternative scenarios are listed in PDD Section B.1. 1. Ferrosilicon production at ChEMW, OJSC using quartzite from the Bakalskoe deposit (i.e. maintaining the situation which existed before the project started); 2. Ferrosilicon production at ChEMW, OJSC using quartzite from the Antonovskoe deposit (the project itself without considering its registration as a JI-activity); 3. Ferrosilicon production at ChEMW, OJSC using quartzite from other deposits. **CAR 07**. There is no evidence that the baseline is established taking into account relevant national and/or sectoral policies and circumstances, local fuel availability, power sector expansion plans, and the economic situation in the project sector as required by the Guidance Paragraph 25. **CAR 08.** PDD, page 14 reads: "Alternative scenario 1 is the least influenced by the key factors and, consequently, this scenario - ferrosilicon production at ChEMW, OJSC using quartzite from the Bakalskoe deposit is the baseline one." Please select the most plausible scenario as required by the Guidance Paragraph 24. The baseline is established by drawing on the list of standard variables contained in appendix B to "Guidance on criteria for baseline setting and monitoring" such as production output of ferrosilicon, electricity consumption, etc. **CAR 09.** The value of parameter $P_{2\,FS\,75\,PE\,f}$ for 2009 defers from the same in the provided spreadsheet. Please correct it.	CAR 07 CAR 08 CAR 09	OK OK OK

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
		The revised PDD is developed with regard to the following key factors: – Tradition of quartzite use at ChEMW; – Remoteness of the quartzite deposit; – Quality of the raw material; – Ferrosilicon production cost; – Sectoral policy; – Economic situation and availability of capital; – Fuel prices and availability. The revised PDD excludes raw materials consumption for ladle treatment during the baseline setting. It is conservative assumption. Verifier confirms that the baseline of the revised PDD is established in a complete and transparent manner.		
24	If selected elements or combinations of approved CDM methodologies or methodological tools for baseline setting are used, are the selected elements or combinations together with the elements supplementary developed by the project participants in line with 23 above?	N/A		OK
25	If a multi-project emission factor is used, does the PDD provide appropriate justification?	N/A		OK
Approved CDM methodology approach only_Paragraphs 26(a) – 26(d)_Not applicable				
Additionality				
JI specific approach only				

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
28	Does the PDD indicate which of the following approaches for demonstrating additionality is used? (a) Provision of traceable and transparent information showing the baseline was identified on the basis of conservative assumptions, that the project scenario is not part of the identified baseline scenario and that the project will lead to emission reductions or enhancements of removals; (b) Provision of traceable and transparent information that an AIE has already positively determined that a comparable project (to be) implemented under comparable circumstances has additionality; (c) Application of the most recent version of the "Tool for the demonstration and assessment of additionality. (allowing for a two-month grace period) or any other method for proving additionality approved by the CDM Executive Board".	PDD v.01 explicitly indicates that the CDM "Tool for the demonstration and assessment of additionality" (Version 05.2) was used. In accordance with paragraph (3) of the tool project proponents should "provide evidence that the incentive from the CDM was seriously considered in the decision to proceed with the project activity. This evidence shall be based on (preferably official, legal and/or other corporate) documentation that was available at, or prior to, the start of the project activity". Such evidence is referred to in PDD on page 3. **CAR 10.** A documented evidence of JI "prior consideration" is not provided nor referred to. **CAR 11.** The additionality proofs of PDD are not in compliance with requirements of the CDM "Tool for the demonstration and assessment of additionality" namely in part of: - Sequence of accomplishment of the steps; - Indication of the steps and sub-steps; - Completeness of accomplishment of steps and sub-steps; - Choice of options of investment analysis. Please stick to the tool. The revised PDD explicitly indicates that JI specific approach is used for demonstration of additionality of the project in accordance with the paragraph 2(a) of the Annex 1 to the "Guidance on criteria for baseline setting and monitoring" (Version 02).	CAR 10 CAR 11	OK OK
29 (a)	Does the PDD provide a justification of the applicability of the approach with a clear and	Pending a response to CAR 11.	Pending	OK

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
	transparent description?	The revised PDD provides a justification of the applicability of JI specific approach. A clear and transparent description of the steps is provided. The same alternatives to the JI project activity as in Section B.1 are defined. They are consistent with mandatory laws and regulations.		
29 (b)	Are additionality proofs provided?	Step-by-step application of the used approach to proof additionality described in PDD Section B.2 including indication and description of the approach applied, application of the approach chosen and provision of additionality proofs. The revised PDD provides additionality proof as a result of identification of alternative scenarios, investment analysis, barrier analysis and common practice analysis. The revised PDD demonstrates that the project scenario is not part of the identified baseline (refer to PDD, Section B.2). **CAR 12**. Common practice analysis of PDD does not take into account an activity in Kuznetsk Ferro-Alloy Plant which is similar to the proposed project activity. It is explicitly indicated in Section B.2, Technological barrier, Alternative scenario 2 that project processing characteristics became known only due to the experience of the Kuznetskiy Ferro-Alloy Plant. Additionally pending a response to CAR 11. The common practice analysis has shown that the project activity is not the common practice in Russian metal industry. This conclusion is determined by AIE through Internet search.	CAR 12	OK
29 (c)	Is the additionality demonstrated appropriately	With CAR 10, CAR 11, CAR 12, the additionality is not demonstrated	Pending	OK

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
	as a result?			
30	If the approach 28 (c) is chosen, are all explanations, descriptions and analyses made in accordance with the selected tool or method?	Pending a response to CAR 11.	Pending	OK
Approved CDM methodology approach only_ Paragraphs 31(a) – 31(e)_Not applicable				
Project boundary (applicable except for JI LULUCF projects				
JI specific approach only				
32 (a)	Does the project boundary defined in the PDD encompass all anthropogenic emissions by sources of GHGs that are: (i) Under the control of the project participants? (ii) Reasonably attributable to the project? (iii) Significant?	The project boundary defined in the PDD encompass all anthropogenic emissions by sources of GHGs that are: (i) Under the control of the project participants. (ii) Reasonably attributable to the project. (iii) Significant. **CAR 13.** Please justify why PDD does not take into account the GHG emission from the raw materials and fuel consumptions during the ferrosilicon production process. The revised PDD excludes raw materials consumption for ladle treatment during the baseline setting. It is conservative assumption.	CAR 13	OK
32 (b)	Is the project boundary defined on the basis of a case-by-case assessment with regard to the criteria referred to in 32 (a) above?	Project boundary is defined on the basis of case-by-case analysis (not always quantitative) of emission sources.		OK
32 (c)	Are the delineation of the project boundary and the gases and sources included appropriately described and justified in the PDD by using a figure or flow chart as appropriate?	Pending a response to CAR13. The delineation of the project boundary and the gases and sources are included appropriately described and justified in the PDD by using a Figure B.3.1.	Pending	OK
32 (d)	Are all gases and sources included explicitly stated, and the exclusions of any sources	Pending a response to CAR13. All gases and sources included are explicitly stated. The exclusions	Pending	OK

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
	related to the baseline or the project are appropriately justified?	of sources related leakage are not appropriately justified in Section B.3.		
Approved CDM methodology approach only_ Paragraph 33_Not applicable				
Crediting period				
34 (a)	Does the PDD state the starting date of the project as the date on which the implementation or construction or real action of the project will begin or began?	The starting date is defined as February 7, 2004 when the first delivery of quartzite from the Antonovskoe deposit to OJSC ChEMW.		OK
34 (a)	Is the starting date after the beginning of 2000?	Yes, it is.		OK
34 (b)	Does the PDD state the expected operational lifetime of the project in years and months?	Operational life time is defined as 9 years or 108 months. **CL 01.** Please clarify why operational life time is defined as 9 years. The revised PDD states that in accordance with Resolution RF # 1 from 01.01 2002 (revised 10.12.2010) operational life time of the project is defined as 15 years or 180 months.	CL 01	OK
34 (c)	Does the PDD state the length of the crediting period in years and months?	The length of crediting period is defined as 5 years or 60 months.		OK
34 (c)	Is the starting date of the crediting period on or after the date of the first emission reductions or enhancements of net removals generated by the project?	Starting day is 01/01/2008 which is the date of the first emission reductions generated by the project.		OK
34 (d)	Does the PDD state that the crediting period for issuance of ERUs starts only after the beginning of 2008 and does not extend beyond the operational lifetime of the project?	The crediting period is defined as from 01/01/2008 till 31/12/2012.		OK
34 (d)	If the crediting period extends beyond 2012,	N/A		OK

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
	does the PDD state that the extension is subject to the host Party approval? Are the estimates of emission reductions or enhancements of net removals presented separately for those until 2012 and those after 2012?			
Monitoring plan				
35	Does the PDD explicitly indicate which of the following approaches is used? − JI specific approach; − Approved CDM methodology approach.	The PDD explicitly indicates that the JI specific approach is used.		OK
JI specific approach only				
36 (a)	Does the monitoring plan describe: − All relevant factors and key characteristics that will be monitored? − The period in which they will be monitored? − All decisive factors for the control and reporting of project performance?	The monitoring plan describes: - data to be monitored (refer to Section D.1.1.1 of PDD for project activity); - the period in which they will be monitored permanently; - all decisive factors (refer to PDD Sections D.1.1.1, D.1.1.3 and Annex 2) for the control and reporting of project performance: quality control (QC) and quality assurance (QA) procedures; the operational and management structure that will be applied in implementing the monitoring plan (refer to PDD Sections B.1, D.2, D.3, D.4 and Annex 2). **CL 02.** Monitoring plan includes some parameters which indicate energy consumption values, such as "Energy consumption during production of grade x ferrosilicon in shop No. y". Please clarify what kind of energy is meant (electric, heat, compressed gases, etc.) Pending a response to CAR 13.	CL 02	OK

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
36 (b)	Does the monitoring plan specify the indicators, constants and variables used that are reliable, valid and provide transparent picture of the emission reductions or enhancements of net removals to be monitored?	The monitoring plan specifies the indicators, constants and variables used that are reliable, valid and provide transparent picture of the emission reductions to be monitored. For data to be monitored, please refer to 36(a) above. For constants please refer to the next paragraph.		OK
36 (b)	If default values are used: − Are accuracy and reasonableness carefully balanced in their selection? − Do the default values originate from recognized sources? − Are the default values supported by statistical analyses providing reasonable confidence levels? − Are the default values presented in a transparent manner?	Yes, monitoring plan includes the following default values: Electricity grid CO2 emission factor for JI projects in regional energy system "Ural" (from the determined JI project "Construction of a new 400 MW CCGT unit at the Yaivinskaya hydroelectric power plant, Wholesale Generating Company-4, Perm Territory, Russia"); Average specific energy consumption rates of ferrosilicon production at ChEMW, OJSC in 2001-2003. **CAR 14**. Please refer to the source of information: UNFCCC; the project registration number. Project registration number on UNFCCC site is 0215. PDD selection of default values are accuracy and reasonableness carefully balanced.	CAR 14	OK
36 (b) (i)	For those values that are to be provided by the project participants, does the monitoring plan clearly indicate how the values are to be selected and justified?	PDD clearly indicates how the values are to be selected (refer to PDD Sections D.1.5).		OK
36 (b) (ii)	For other values, − Does the monitoring plan clearly indicate the	The monitoring plan clearly indicates the references from which these	CAR 15	OK

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
	precise references from which these values are taken? − Is the conservativeness of the values provided justified?	values are taken. **CAR 15.** Please provide evidence of all initial data used to calculate GHG emission reduction and justify conservativeness of them. Evidence of all initial data are provided during on site visit .		
36 (b) (iii)	For all data sources, does the monitoring plan specify the procedures to be followed if expected data are unavailable?	All parameters included in the monitoring plan are to be either monitored under regular operational practice or taken as constants.		OK
36 (b) (iv)	Are International System Unit (SI units) used?	International System Units (SI units) are used.		OK
36 (b) (v)	Does the monitoring plan note any parameters, coefficients, variables, etc. that are used to calculate baseline emissions or net removals but are obtained through monitoring?	PDD in Sections B.1, D.1.1.3 and Annex 2 notes parameters, coefficients and variables to calculate baseline emissions.		OK
36 (b) (v)	Is the use of parameters, coefficients, variables, etc. consistent between the baseline and monitoring plan?	There is consistency between parameters, coefficients, variables, etc. used in baseline and monitoring plan.		OK
36 (c)	Does the monitoring plan draw on the list of standard variables contained in appendix B of "Guidance on criteria for baseline setting and monitoring"?	The monitoring plan is constructed based on the list of standard variables contained in appendix B of "Guidance on criteria for baseline setting and monitoring".		OK
36 (d)	Does the monitoring plan explicitly and clearly distinguish: (i) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), and that are available already at the stage of determination?	Description of the monitoring plan in Section D.2 explicitly and clearly distinguishes: i) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period) such as: - average specific energy consumption rates of ferrosilicon production at ChEMW, OJSC in 2001-2003;		OK

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
	(ii) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), but that are not already available at the stage of determination? (iii) Data and parameters that are monitored throughout the crediting period?	- rate of greenhouse gas emissions from the electric power plants of the United Power Grid "Ural" (refer to PDD, Sections D.1, D.1.1.1, D.1.1.3, D.1.3.1 and Annex 2); (ii) N/A. (iii) Data and parameters that are to be monitored throughout the crediting period such as (refer to PDD, Sections D.1, D.1.1.1, D.1.1.3 and D.1.3.1): - silicon production at ChEMW, OJSC; - silicon weight content in ferrosilicon; - energy consumption rate for the production of ferrosilicon at ChEMW, OJSC.		
36 (e)	Does the monitoring plan describe the methods employed for data monitoring (including its frequency) and recording?	Yes, the methods used and data collection frequency and recording are clearly defined in the monitoring plan.		OK
36 (f)	Does the monitoring plan elaborate all algorithms and formulae used for the estimation/calculation of baseline emissions/removals and project emissions/ removals or direct monitoring of emission reductions from the project, leakage, as appropriate?	The monitoring plan elaborated all algorithms and formulae used for the estimation of baseline and project emissions except for the following findings. **CAR 16.** PDD does not distinguish the difference between dimension of kWh and MWh in Formula D.1-2. Please correct it. **CAR 17.** PDD has two different parameters (ID M3 and ID M4) with the same notation $P_{x\,FS\,y\,PE}$. Please correct it.	CAR 16 CAR 17	OK OK
36 (f) (i)	Is the underlying rationale for the algorithms/formulae explained?	The underlying rationale for the formulae is explained as appropriate.		OK
36 (f) (ii)	Are consistent variables, equation formats, subscripts etc. used?	Consistent variables, equation formats, subscripts are used. **CAR 18.** Please describe all data and information in order to monitor	CAR 18 CAR 19	OK OK

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
		leakage effects of the project in Section D.1.3.1. **CAR 19.** PDD, Section D.1.1.4 does not include formula to estimate baseline emissions and formula to calculate **SEC** $_{x\ FS\ y\ BE}$.		
36 (f) (iii)	Are all equations numbered?	There are numbers of formulae except for the following findings. **CAR 20.** Please number the formulae in Section D.1.3.2. and Section D.1.4.	CAR 20	OK
36 (f) (iv)	Are all variables, with units indicated defined?	Yes, except for the following finding. **CAR 21.** Please indicate dimension of parameter "**I**" in Section D.1.3.2.	CAR 21	OK
36 (f) (v)	Is the conservativeness of the algorithms/procedures justified?	**CAR 22.** Please justify conservativeness of the approach according to which the average rather than actual silicon content of grade alloy is used to estimate the specific baseline emission SEC.	CAR 22	OK
36 (f) (v)	To the extent possible, are methods to quantitatively account for uncertainty in key parameters included?	N/A		N/A
36 (f) (vi)	Is consistency between the elaboration of the baseline scenario and the procedure for calculating the emissions or net removals of the baseline ensured?	There is consistency between the elaboration on the baseline scenario and calculating the baseline emission in the spreadsheet. Pending a response to CAR 09.	Pending	OK
36 (f) (vii)	Are any parts of the algorithms or formulae that are not self-evident explained?	There are no parts of the algorithms or formulae that are not self-evident in PDD. Pending a response to CARs 16-21.	Pending	OK
36 (f) (vii)	Is it justified that the procedure is consistent with standard technical procedures in the relevant sector?	Yes, the monitoring is in line with current operational routines.		OK

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
36 (f) (vii)	Are references provided as necessary?	Yes, all references are provided except that in CAR 14.	Pending	
36 (f) (vii)	Are implicit and explicit key assumptions explained in a transparent manner?	Pending a response to CAR 22.	Pending	
36 (f) (vii)	Is it clearly stated which assumptions and procedures have significant uncertainty associated with them, and how such uncertainty is to be addressed?	N/A		OK
36 (f) (vii)	Is the uncertainty of key parameters described and, where possible, is an uncertainty range at 95% confidence level for key parameters for the calculation of emission reductions or enhancements of net removals provided?	N/A		N/A
36 (g)	Does the monitoring plan identify a national or international monitoring standard if such standard has to be and/or is applied to certain aspects of the project? Does the monitoring plan provide a reference as to where a detailed description of the standard can be found?	PDD Section D.1.5 provides the explicit identification of main relevant Russian Federation environmental regulations.		OK
36 (h)	Does the monitoring plan document statistical techniques, if used for monitoring, and that they are used in a conservative manner?	N/A		OK
36 (i)	Does the monitoring plan present the quality assurance and control procedures for the monitoring process, including, as appropriate, information on calibration and on how records on data and/or method validity and accuracy are	QC/QA procedures are specified in PDD Section D.2.		OK

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
	kept and made available upon request?			
36 (j)	Does the monitoring plan clearly identify the responsibilities and the authority regarding the monitoring activities?	The operational and management structure for GHG monitoring is described in PDD Section D.3, Fig. D.3.		OK
36 (k)	Does the monitoring plan, on the whole, reflect good monitoring practices appropriate to the project type? If it is a JI LULUCF project, is the good practice guidance developed by IPCC applied?	Monitoring techniques are in line with current operation routines at OJSC CheMW.		OK
36 (l)	Does the monitoring plan provide, in tabular form, a complete compilation of the data that need to be collected for its application, including data that are measured or sampled and data that are collected from other sources but not including data that are calculated with equations?	These data are provided in the PDD, Section D.1.		OK
36 (m)	Does the monitoring plan indicate that the data monitored and required for verification are to be kept for two years after the last transfer of ERUs for the project?	Yes, it is indicated.		OK
37	If selected elements or combinations of approved CDM methodologies or methodological tools are used for establishing the monitoring plan, are the selected elements or combination, together with elements supplementary developed by the project participants in line with 36 above?	N/A		OK
Approved CDM methodology approach only_Paragraphs 38(a) – 38(d)_Not applicable				

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
Applicable to both JI specific approach and approved CDM methodology approach_Paragraph 39_Not applicable				
Leakage				
JI specific approach only				
40 (a)	Does the PDD appropriately describe an assessment of the potential leakage of the project and appropriately explain which sources of leakage are to be calculated and which can be neglected?	The PDD appropriately describes the assessment of the potential leakage except for the following finding (refer to PDD, Section D.1.3). **CAR 23.** Calculation of leakage in PDD differs from the calculation in the provided spreadsheet. The parameter weight of train in year is used for calculation leakage of GHG in the spreadsheet. This parameter is not used in PDD. **CAR 24.** Please provide the exact reference 12 instead of that given on page 37.	CAR 23 CAR 24	OK OK
40 (b)	Does the PDD provide a procedure for an ex ante estimate of leakage?	N/A		OK
Approved CDM methodology approach only_Paragraph 41_Not applicable				
Estimation of emission reductions or enhancements of net removals				
42	Does the PDD indicate which of the following approaches it chooses? (a) Assessment of emissions or net removals in the baseline scenario and in the project scenario (b) Direct assessment of emission reductions	Assessment of emissions in the baseline scenario and in the project scenario is chosen.		OK
43	If the approach (a) in 42 is chosen, does the PDD provide ex ante estimates of: (a) Emissions or net removals for the project scenario (within the project boundary)? (b) Leakage, as applicable? (c) Emissions or net removals for the baseline scenario (within the pr	PDD provides ex ante estimates of: (a) Emissions for the project scenario (Section E.1); (b) Leakage (Section E.2); (c) Emissions for the baseline scenario (Section E.4); (d) Emission reductions adjusted by leakage (Section E.6).		OK

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
	oject boundary)? (d) Emission reductions or enhancements of net removals adjusted by leakage?			
44	If the approach (b) in 42 is chosen, does the PDD provide ex ante estimates of: (a) Emission reductions or enhancements of net removals (within the project boundary)? (b) Leakage, as applicable? (c) Emission reductions or enhancements of net removals adjusted by leakage?	N/A		OK
45	For both approaches in 42 (a) Are the estimates in 43 or 44 given: (i) On a periodic basis? (ii) At least from the beginning until the end of the crediting period? (iii) On a source-by-source/sink-by-sink basis? (iv) For each GHG? (v) In tones of CO2 equivalent, using global warming potentials defined by decision 2/CP.3 or as subsequently revised in accordance with Article 5 of the Kyoto Protocol? (b) Are the formula used for calculating the estimates in 43 or 44 consistent throughout the PDD? (c) For calculating estimates in 43 or 44, are key factors influencing the baseline emissions or removals and the activity level of the project and	- Estimates in 43 are given on the periodic basis, from the beginning until the end of the crediting period, in tones of CO2 equivalent. - The formulae used in PDD are consistent. - Key factors influencing the baseline emissions and the activity level of the project and the emissions are taken into account, as appropriate. - Data sources used for calculating the estimates are basically clearly identified, reliable and transparent. Additionally pending a response to CAR 15. - Emission factors (including default emission factors) are basically selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice. Additionally pending a response to CAR 22. - Estimation in 43 is based on conservative assumptions and the most plausible scenario in a transparent manner. - Estimates in 43 are consistent throughout the PDD. The annual average of estimated emission reductions calculated by dividing the total estimated emission reductions over the crediting	Pending	OK

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
	the emissions or net removals as well as risks associated with the project taken into account, as appropriate? (d) Are data sources used for calculating the estimates in 43 or 44 clearly identified, reliable and transparent? (e) Are emission factors (including default emission factors) if used for calculating the estimates in 43 or 44 selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice? (f) Is the estimation in 43 or 44 based on conservative assumptions and the most plausible scenarios in a transparent manner? (g) Are the estimates in 43 or 44 consistent throughout the PDD? (h) Is the annual average of estimated emission reductions or enhancements of net removals calculated by dividing the total estimated emission reductions or enhancements of net removals over the crediting period by the total months of the crediting period and multiplying by twelve?	period by the total months of the crediting period and multiplying by twelve.		
46	If the calculation of the baseline emissions or net removals is to be performed ex post, does the PDD include an illustrative ex ante emissions or net removals calculation?	Illustrative ex-ante estimation of baseline emissions is made on the spreadsheet.		OK
Approved CDM methodology approach only_Paragraphs 47(a) – 47(b)_Not applicable				

DVM Paragraph	Check Item	Initial finding	Draft Concl.	Final Concl.
Environmental impacts				
48 (a)	Does the PDD list and attach documentation on the analysis of the environmental impacts of the project, including transboundary impacts, in accordance with procedures as determined by the host Party?	The project does not require any supplemental support documentation related to the environmental impact analysis, and the State Environmental Expert Review.		OK
48 (b)	If the analysis in 48 (a) indicates that the environmental impacts are considered significant by the project participants or the host Party, does the PDD provide conclusion and all references to supporting documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party?	The project does not have any significant negative impacts on the environment. Furthermore, the project leads to a decrease of energy consumption and to the reduction of GHG emissions. The project does not have any transboundary environmental impacts.		OK
Stakeholder consultation				
49	If stakeholder consultation was undertaken in accordance with the procedure as required by the host Party, does the PDD provide: (a) A list of stakeholders from whom comments on the projects have been received, if any? (b) The nature of the comments? (c) A description on whether and how the comments have been addressed?	N/A		OK
Determination regarding small-scale projects (additional elements for assessment)_Paragraphs 50 - 57_Not applicable				
Determination regarding land use, land-use change and forestry projects _Paragraphs 58 – 64(d)_Not applicable				
Determination regarding programmes of activities_Paragraphs 66 – 73_Not applicable				

DETERMINATION PROTOCOL

Table 2 Resolution of Corrective Action and Clarification Requests

CAR/CL	Ref. to checklist question in Table 1	Summary of project owner response	Determination team conclusion
CAR 01. The indicated sectoral scope (3) Energy demand is incorrect, please change it to sectoral scope (9) Metal production.	-	Response 1 Corrected, see PDD, p. 2	Conclusion on Response 1 CAR 01 is closed based on due amendments made to the revised PDD.
CAR 02. Please provide the project implementation schedule.	-	Response 1 Done, see PDD, p.8	Conclusion on Response 1 CAR 02 is closed based on due amendments made to the revised PDD.
CAR 03. PDD, Section A.4.2, page 7 reads: "The silicon losses during ferrosilicon ladle treatment result in an increase in all of the specific output indicators." Please provide more detailed information about each specific output indicators.	-	Response 1 See file "Prime cost FS" and comments in CAR 13.	Conclusion on Response 1 CAR 03 is closed based on given explanation.
CAR 04. The project has no approval by Parties involved.	19	Response 1 The Project can be approved by the host party after a positive opinion is given by the determinator. See PDD, p 10.	Pending
CAR 05: The status of the project approval by a Party involved other than the host Party is not explained.	19	Response 1 The other Party hasn't determined yet (Section A3 in PDD), that is	Conclusion on Response 1 As follows from the response the other Party is not determined because the project is not

CAR/CL	Ref. to checklist question in Table 1	Summary of project owner response	Determination team conclusion
		why the project is not approved by other than the host Party. Response 2 The other Party hasn't determined yet (Section A3 in PDD).	approved by other Party. It is not correct. Conclusion on Response 2 CAR 05 is closed based on appropriate explanations.
CAR 06. PDD does not explicitly indicate which of the approaches is used for identifying the baseline.	22	Response 1 Corrected, see PDD, p 11.	Conclusion on Response 1 CAR 06 is closed based on due amendments made to the revised PDD.
CAR 07. There is no evidence that the baseline is established taking into account relevant national and/or sectoral policies and circumstances, local fuel availability, power sector expansion plans, and the economic situation in the project sector as required by the Guidance Paragraph 25.	23	Response 1 This factors are considered in established EF grid in Annex 2 of PDD "Installation of new CCGT-400 at Yaivinskaya TPP, OGK-4, Perm area, Russia". http://ji.unfccc.int/UserManagement/FileStorage/SWGB8ROL1D0K7MFAXT24PYZJHUQV96 Response 2 Corrected,see PDD, p.13-14 Response 3 Done.	Conclusion on Response 1 Please establish baseline taking into account requirements of the Guidance Paragraph 25. It must be integral part of PDD. Conclusion on Response 2 1. Please establish baseline (Section B.1.) taking into account key factors (Guidance, Paragraph 25): (b)Economic situation; (c)Availability of capital; (e)Fuel prices and availability. 2. What are conservative assumptions used for baseline setting? Please include them in Section

CAR/CL	Ref. to checklist question in Table 1	Summary of project owner response	Determination team conclusion
			B.1. (Guidance, Paragraph 26). 3. Please indicate data sources (for Tables B.1.1-1.4 and B.2.6-2.9 of PDD). 4. Please provide a detailed theoretical description of the baseline in Section B.1 (Guidelines, B.1)/or include references on other Sections of PDD where it is provided. Conclusion on Response 3 CAR 07 is closed based on due amendments made to the revised PDD.
CAR 08. PDD, page 14 reads: "Alternative scenario 1 is the least influenced by the key factors and, consequently, this scenario - ferrosilicon production at ChEMW, OJSC using quartzite from the Bakalskoe deposit is the baseline one." Please select the most plausible scenario as required by the Guidance Paragraph 24.	23	Response 1 Corrected, see PDD, p.14	Conclusion on Response 1 CAR 08 is closed based on due amendments made to the revised PDD.
CAR 09. The value of parameter $P_{2\,FS\,75\,PE\,f}$ for 2009 defers from the same in the provided spreadsheet. Please correct it.	23	Response 1 Corrected, see PDD, p.16	Conclusion on Response 1 CAR 09 is closed based on due amendments made to the revised PDD.
CAR 10. A documented evidence of JI "prior consideration" is not provided nor referred to.	28	Response 1 See file "Protocol"	Conclusion on Response 1 CAR 10 is closed based on due amendments

CAR/CL	Ref. to checklist question in Table 1	Summary of project owner response	Determination team conclusion
			made to the revised PDD.
CAR 11. The additionality proofs of PDD are not in compliance with requirements of the CDM "Tool for the demonstration and assessment of additionality" namely in part of: - Sequence of accomplishment of the steps; - Indication of the steps and sub-steps; - Completeness of accomplishment of steps and sub-steps; - Choice of options of investment analysis. Please stick to the tool.	28	Response 1 Corrected. Now JI specific approach is used. See PDD, p.17,18 Response 2 Corrected. Now JI specific approach is developed in accordance with "Guidance on criteria for baseline setting and monitoring" version 02 (Annex 1, paragraph 2a)	Conclusion on Response 1 1. In accordance with "Guidance on criteria for baseline setting and monitoring" version 02 (Annex 1, paragraph 2b) it is necessary to provide justification that AIE has already positively determined … and etc. Please provide it. 2. Furthermore it is necessary to provide an evidence of initial data used to proof additionality. Conclusion on Response 2 CAR 11 is closed based on due amendments made to the revised PDD.
CAR 12. Common practice analysis of PDD does not take into account an activity in Kuznetsk Ferro-Alloy Plant which is similar to the proposed project activity. It is explicitly indicated in Section B.2, Technological barrier, Alternative scenario 2 that project processing characteristics became known only due to the experience of the Kuznetskiy Ferro-Alloy Plant.	29(b)	Response 1 Activity on ChEMW assumes the replacement of quartzite from the Bakalskoe deposit with quartzite from the Antonovskoe deposit. Kuznetskiy Ferro-Alloy Plant hasn't done the same activity, this plant always uses Antonovskii quartzite and hasn't replaced this quartzite with another one. Response 2	Conclusion on Response 1 Conclusion depends on response to CAR 11. Conclusion on Response 2 CAR 12 is closed based on due amendments made to the revised PDD.

CAR/CL	Ref. to checklist question in Table 1	Summary of project owner response	Determination team conclusion
		See PDD, p.24	
CAR 13. Please justify why PDD does not take into account the GHG emission from the raw materials and fuel consumptions during the ferrosilicon production process.	32(a)	Response 1 Following sources are needed for ferrosilicon production: - quartzite - reductant (coke and coal) - electrodes - steel cuttings - wood chip - electricity - siderite (for ladle treatment) Project influences only on electricity consumption, quantity of quartzite being used and siderite. GHG emission sources in ferrosilicon production are: -reductant (coke and coal) -electricity -siderite (for ladle treatment) Quantity and quality of reductant, steel cuttings and wood chip will be the same in both baseline and	Conclusion on Response 1 CAR 13 will be closed if owner of PDD includes this explanation to PDD, Section B.3. Conclusion on Response 2 CAR 13 is closed based on due amendments made to the revised PDD.

CAR/CL	Ref. to checklist question in Table 1	Summary of project owner response	Determination team conclusion
		project. Baseline assumes additional ladle treatment: "When an alloy poor in aluminum is required, which cannot be provided by the charging material used, liquid ferrosilicon is treated with siderite (ferrous carbonate FeCO3) in a ladle with the natural mixing of the melt by means of the resulting carbon dioxide. This enables the aluminum content in the melted alloy to be reduced by making oxide and removing it from the melt together with slag. Silicon is simultaneously oxidized and iron is reduced from siderite." (page 6 of PDD). Project scenario assumes ferrosilicon production without ladle treatment: "Project leads to production ferrosilicon poor in aluminum without additional expenditures on ladle treatment." (page 7 PDD). AL_2O_3 in quartzite of Bakalskoe deposit | AL_2O_3 in Antonovsk	

CAR/CL	Ref. to checklist question in Table 1	Summary of project owner response	Determination team conclusion
		(baseline) | (project) 1.160% | 0.530% So, using of quartzite from the Antonovskoe deposit will lead to reduction of using raw materials for ladle treatment. Thus, excluded as conservative. Response 2 Done, see PDD, p 27-30	
CAR 14. Please refer to the source of information: UNFCCC; the project registration number.	32(b)	Response 1 Reference number on UNFCCC site – 0215 Response 2 Done, see PDD, p 17,59	Conclusion on Response 1 CAR 14 will be closed if owner of PDD includes the project registration number to PDD (pages 17 and 56). Conclusion on Response 2 CAR 14 is closed based on due amendments made to the revised PDD.
CAR 15. Please provide evidence of all initial data used to calculate GHG emission reduction and justify conservativeness of them.	32(b)	Response 1 This information will be provided at the time of site visit.	Conclusion on Response 1 CAR may be closed after providing evidence of initial data used to calculate GHG emission reduction. CAR 15 is closed based on due amendments made to the revised PDD and provided evidence of initial data.

CAR/CL	Ref. to checklist question in Table 1	Summary of project owner response	Determination team conclusion
CAR 16. PDD does not distinguish the difference between dimension of kWh and MWh in Formula D.1-2. Please correct it.	36(f)	Response 1 Corrected, see PDD, p.35	Conclusion on Response 1 CAR 16 is closed based on due amendments made to the revised PDD.
CAR 17. PDD has two different parameters (ID M3 and ID M4) with the same notation $\mathbf{P}_{x\,FS\,y\,PE}$. Please correct it.	36(f)	Response 1 Corrected, see PDD, p.36 Response 2 See PDD, p.38	Conclusion on Response 1 Please provide a description of using parameter M2 in PDD. Conclusion on Response 2 CAR 17 is closed based on due amendments made to the revised PDD.
CAR 18. Please describe all data and information in order to monitor leakage effects of the project in Section D.1.3.1.	36(f)	Response 1 Corrected, see PDD, p.37-38	Conclusion on Response 1 CAR 18 is closed based on due amendments made to the revised PDD.
CAR 19. PDD, Section D.1.1.4 does not include formula to estimate baseline emissions and formula to calculate $\mathbf{SEC}_{x\,FS\,y\,BE}$.	36(f)	Response 1 Corrected, see PDD, p.36	Conclusion on Response 1 CAR 19 is closed based on due amendments made to the revised PDD.
CAR 20. Please number the formulae in Section D.1.3.2. and Section D.1.4.	36(f)	Response 1 Corrected, see PDD, p. 39-40	Conclusion on Response 1 CAR 20 is closed based on due amendments made to the revised PDD.
CAR 21. Please indicate dimension of parameter "**I**" in Section D.1.3.2.	36(f)	Response 1 Corrected, see p. 40	Conclusion on Response 1 CAR 21 is closed based on due amendments made to the revised PDD.
CAR 22. Please justify conservativeness of the	36(f)	Response 1	Conclusion on Response 1

CAR/CL	Ref. to checklist question in Table 1	Summary of project owner response	Determination team conclusion
approach according to which the average rather than actual silicon content of grade alloy is used to estimate the specific baseline emission SEC.		Corrected, see PDD p.32	CAR 22 is closed based on due amendments made to the revised PDD.
CAR 23. Calculation of leakage in PDD differs from the calculation in the provided spreadsheet. The parameter weight of train in year is used for calculation leakage of GHG in the spreadsheet. This parameter is not used in PDD.	40(a)	Response 1 Corrected (see excel file with calculation)	Conclusion on Response 1 Conclusion depends on response to CAR 15. CAR 23 is closed (refer to CAR 15).
CAR 24. Please provide the exact reference 12 instead of that given on page 37.	40(a)	Response 1 Corrected, see PDD, p.40	Conclusion on Response 1 CAR 24 is closed based on due amendments made to the revised PDD.
CL 01. Please clarify why operational life time is defined as 9 years.	34(b)	Response 1 Operational lifetime of ore-smelting furnace Response 2 Ore-smelting furnace has similar constructional features with arc-type steel furnace. According to Resolution RF # 1 from 01.01 2002 (reduction from 10.12.2010) «About classification of the permanent assets included in amortisation groups» which defines operational life time of object, arc-type steel furnace	Conclusion on Response 1 Please provide an evidence of the operational life time. Conclusion on Response 2 Please include this explanation/ or appropriate reference to PDD, Section C.2. Conclusion on Response 3 CL 01 is closed based on due amendments made to the revised PDD.

CAR/CL	Ref. to checklist question in Table 1	Summary of project owner response	Determination team conclusion
		belongs to the group of assets with useful operation lifetime of 10-15 years. So, operational life time is defined as 15 years. In fact, existing ore-smelting furnaces at ChEMW has already operated for minimum 30 years. Response 3 Done	
CL 02. Monitoring plan includes some parameters which indicate energy consumption values, such as "Energy consumption during production of grade x ferrosilicon in shop No. y". Please clarify what kind of energy is meant (electric, heat, compressed gases, etc.)	36(a)	Response 1 Corrected, see PDD, p 35	Conclusion on Response 1 CL 02 is closed based on due amendments made to the revised PDD.