



# VERIFICATION REPORT

**CARBON TRADE & FINANCE SICAR S.A.**

## VERIFICATION OF THE **IMPLEMENTATION OF ARC-FURNACE STEELMAKING AT MAGNITOGORSK IRON AND STEEL WORKS**

REPORT No: RUSSIA-VER/0223/2012

REVISION 01

BUREAU VERITAS CERTIFICATION

## VERIFICATION REPORT



Date of first issue: 06/04/2012	Organizational unit: Bureau Veritas Certification Holding SAS
Client: Carbon Trade & Finance SICAR S.A.	Client ref.: Mr. Ingo Ramming

## Summary:

Bureau Veritas Certification has made the third periodic verification of the "Implementation of arc-furnace steelmaking at Magnitogorsk Iron and Steel Works", project of OJSC "Magnitogorsk Iron and Steel Works" located in the city of Magnitogorsk, 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 verification scope is defined as a periodic independent review and ex post determination by the Accredited Entity of the monitored reductions in GHG emissions during defined verification period, 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 verification report and opinion. The overall verification, from Contract Review to Verification Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

The first output of the verification process is a list of five Corrective Actions Requests and four Forward Actions Request (CAR, FAR), presented in Appendix A.

In summary, Bureau Veritas Certification confirms that the project is implemented as per determined changes. Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately. The monitoring system is in place and the project is generating GHG emission reductions. The GHG emission reduction is calculated without material misstatements, and the ERUs issued totalize 1,200,169 tCO<sub>2</sub>e for the 3d monitoring period from 01 January 2011 to 31 December 2011.

Our opinion relates to the project's GHG emissions and resulting GHG emission reductions reported and related to the approved project baseline and monitoring, and its associated documents.

Report No.: Russia-ver/0223/2012	Subject Group: JI
Project title: "Implementation of arc-furnace steelmaking at Magnitogorsk Iron and Steel Works"	
Work carried out by: Vera Skitina – Lead verifier	
Work reviewed by: Andrey Rodionov – Lead Verifier	
Work approved by: Leonid Yaskin – Operational Manager	
Date of this revision: 06/04/2012	Rev. No.: 01
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## 1 INTRODUCTION

Carbon Trade & Finance SICAR S.A. has commissioned Bureau Veritas Certification to verify the emissions reductions of its JI project "Implementation of arc-furnace steelmaking at Magnitogorsk Iron and Steel Works" (hereafter referred 'the project') at the city of Magnitogorsk, Chelyabinsk region, Russian Federation.

This report summarizes the findings of the verification 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

Verification is the periodic independent review and ex post determination by the Accredited Independent Entity of the monitored reductions in GHG emissions during defined verification period.

The objective of verification can be divided in Initial Verification and Periodic Verification.

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 verification 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 verification is not meant to provide any consulting towards the Client. However, stated requests for clarifications, corrective and/or forward actions may provide input for improvement of the project monitoring towards reductions in the GHG emissions.

### 1.3 Verification Team

The verification team consists of the following personnel:

Vera Skitina

Bureau Veritas Certification Team Leader, Climate Change Lead Verifier

This verification report was reviewed by:

Andrey Rodionov

Bureau Veritas Certification, Internal Technical Reviewer



## 2 METHODOLOGY

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

In order to ensure transparency, a verification 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 verification and the results from verifying the identified criteria. The verification protocol serves the following purposes:

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

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

### 2.1 Review of Documents

The Monitoring Report (MR) submitted by CTF Consulting, LLC and additional background documents related to the project design and baseline, i.e. country Law, Project Design Document (PDD), Guidance on criteria for baseline setting and monitoring, Host party criteria, Kyoto Protocol, Clarifications on Verification Requirements to be Checked by an Accredited Independent Entity were reviewed.

The verification findings presented in this report relate to the Monitoring Reports versions 1.0 dated 30/01/2012, 1.1 dated 05.04.12 and project as described in the determined PDD.

### 2.2 Follow-up Interviews

On 28-29/02/2012 Bureau Veritas Certification performed on-site interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of MMK and CTF Consulting, LLC (subsidiary of Carbon Trade & Finance SICAR S.A.) were interviewed (see References). The main topics of the interviews are summarized in Table 1.

**Table 1 Interview topics**

Interviewed organization	Interview topics
MMK	<ul style="list-style-type: none"> <li>➤ Status of project equipment</li> <li>➤ Revisions of Monitoring plan</li> <li>➤ Collected data</li> <li>➤ Passports and evidence of calibration of measuring equipment</li> <li>➤ Data logs (samples)</li> <li>➤ Data reports (samples)</li> <li>➤ QC and QA procedures</li> <li>➤ Use of calculation tool</li> <li>➤ Emission calculations</li> <li>➤ QC and QA procedures</li> <li>➤ Monitoring report</li> <li>➤ Environmental impact</li> <li>➤</li> </ul>
(LOCAL Stakeholder)	<ul style="list-style-type: none"> <li>➤ N/A</li> </ul>
CTF Consulting, LLC, CONSULTANTS	<ul style="list-style-type: none"> <li>➤ Baseline methodology.</li> <li>➤ Monitoring plan.</li> <li>➤ Monitoring report.</li> <li>➤ Deviations from PDD.</li> <li>➤ Emission Reduction Calculation Model.</li> </ul>

## 2.3 Resolution of Clarification, Corrective and Forward Action Requests

The objective of this phase of the verification 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 GHG emission reduction calculation.

If the Verification Team, in assessing the monitoring report and supporting documents, identifies issues that need to be corrected, clarified or improved with regard to the monitoring requirements, it should 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 that is not in accordance with the monitoring plan;



(b) Clarification request (CL), requesting the project participants to provide additional information for the Verification Team to assess compliance with the monitoring plan;

(c) Forward action request (FAR), informing the project participants of an issue, relating to the monitoring that needs to be reviewed during the next verification period.

The Verification 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 verification.

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

### **3 VERIFICATION CONCLUSIONS**

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

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

The Clarification, Corrective and Forward Action Requests are stated, where applicable, in the following sections and are further documented in the Verification Protocol in Appendix A. The verification of the Project resulted in five Corrective Actions Requests and three Forward Actions Request (CAR, FAR), presented in Appendix A.

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

#### **3.1 Remaining issues and FARs from previous verifications**

FAR 01 was raised at the stage of the 2nd verification made by Bureau Veritas with statement "Please consider the amendments in the Guiding Monitoring Procedure / Category 2 Documents, 1/ issued by MMK "Regulation on monitoring of GHG emissions reduction. PD MMK 3-SSGO-01-2010" to specify the protection and storage of master copies of handwritten and electronic records, spreadsheets, and reports and the required number of its master copies".

The project holder provided the appropriate evidence of the amendments and the verifier justified them at the site visit.

The FAR 01 is closed now.



### **3.2 Project approval by Parties involved (90-91)**

Written approval of the project by the Russian Government is issued by the decree of the Ministry of Economic Development N709 dated 30 December 2010. The project is listed under number 04 in the list of approved projects. The approval was provided to the AIE. The updated PDD Version 1.5 dated 31/01/2011 was provided to AIE on 31/01/2011. Following this, AIE issued the “deemed final” Determination Report Revision 2 dated 02/02/2011 with closed CAR 01 from the determination stage.

The Declaration of Approval from State of the Netherlands, acting through the Ministry of Economic Affairs, Agriculture and Innovation and its implementing agency “NL Agency”, being the Designated Focal Point for Joint Implantation (JI) in The Netherlands has been received for the project by 8th March 2011.

Thereby the project has been approved both by host Party and Party involved in the JI project, other than the host Party.

These letters were provided to AIE which does not question its authenticity.

### **3.3 Project implementation (92-93)**

The implementation status of the project is as in Appendix A paragraph 92, and the starting date of operation is 01/01/2008.

The progress of the proposed JI project achieved is steady. Work under the project implementation including building and commissioning stages has been completed.

The project continues generation of Emission Reduction Units since 01/01/2008 after reconstruction of the steelmaking operations at OJSC “Magnitogorsk Iron and Steel Works” as confirmed by measuring monitoring data in the Monitoring Reports version 1.0 dated 30.01.12 and version 1.1 dated 05.04.12.

Outstanding issues related to Project implementation (92)–(93) of the monitoring plan, PP’s response and the AIE conclusion are summarized in Appendix A Table 2 (FAR 01).

The issue concerns:





- provision in the next monitoring period that the internal procedure PD MMK 3-DF-13-2011 “Regulation on monitoring of GHG emissions reduction”, created as a result of the realization of the project: “Implementation of arc-furnace steelmaking at Magnitogorsk Iron and Steel Works” (monitoring procedure) includes a troubleshooting procedures to check whether there are possibilities of redundant data monitoring in case of having problems with the used monitoring equipment. Such procedures may reduce risks for the buyers of emission reductions (e.g. the Client). (FAR 01).

### **3.4 Compliance of the monitoring plan with the monitoring methodology (94-98)**

The monitoring occurred in accordance with the PDD regarding which the determination has been “deemed final” with revisions which were positively determined in course of the current verification. Determination is not deemed final in JI terms since neither PDD nor the Determination Report were published on the UNFCCC JI website.

During the monitoring period, some changes were made to the operational equipment: carbon analyser LECO SC144DR used for measuring of monitoring parameters (a) Carbon content in dry coal charge, % by mass and (b) Carbon content in dry metallurgical coke, % by mass failed in August 2011. For this reason appropriate data was not available from September until December 2011. In the calculations the value of the carbon content in dry coal charge for the period September – December 2011 was taken as monthly average value for the period January – August 2011 (80,19 % by mass.). These changes are justified by the MR developers as changes in the Monitoring Report in Section C and positively determined by the verifier based on the appropriate analysis of the justification’s provided at the site visit. The MR Developers applied the fixed value of the monthly average value of carbon content in coal charge and metallurgical coke for the period January – August 2011 instead of using the respective IPCC default values.

For calculating the emission reductions, the key factors and parameters influencing the baseline and project emissions were taken into account, including those listed in 23 (b) (i)-(vii) of the DVM as well as the data collected under monitoring as follows (refer to Appendix A para 95 (a)).

Other key factors which influence project emissions were taken into account such as listed in Appendix A, para 95 (c). The parameters to be monitored within the project boundary to get the project emission are fixed in PDD Section D.1.1.1. Monitoring points are indicated in the MR Sections B.4 and D and excel spread sheet with calculation of emission reduction.



Data sources used for calculating emission reductions, as provided in Appendix A para 95 (b), are clearly identified, reliable and transparent.

Emission factors, including default emission factors are selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice:

- default CO<sub>2</sub> emissions factor for grid electricity purchased from Unified Energy System of Urals (EF grid) fixed ex-ante based on the "Report on GHG emission factors for Russian energy systems (2008)" (refer to PDD Section B.1);
- specific CO<sub>2</sub> emissions from metallurgical conversions for steel smelting in open-hearth furnace plant (OHFP) and production of profiled steel billet in blooming mill plant (BMP) are calculated by carbon balance method based on historical consumption of carbon-containing materials and fuels, historical output of production under baseline technology, and actual carbon content in BFG, COG and NG;
- CO<sub>2</sub> emissions from consumption of electricity in the baseline are calculated on the basis of historical electricity consumption in OHFP and BMP (they produced only profiled steel), actual CO<sub>2</sub> emission factors from electricity consumption and actual output of profiled steel billet in the project;
- CO<sub>2</sub> emissions during generation of air blast were calculated using actual specific consumption of air blast per ton of pig iron, CO<sub>2</sub> emission factor from generation of air blast and demand for pig iron required for production of profiled steel billet in the baseline.

CO<sub>2</sub> emissions from metallurgical conversion for production of profiled steel billet in the baseline in amount equal to the actual project one are calculated on the basis of historical specific consumption of pig iron and scrap metal per ton of profiled steel in OHFP-BMP process, actual specific consumption of metallurgical coke per ton of pig iron and actual output of profiled steel billet in the project.

Total CO<sub>2</sub> emissions associated with production of profiled steel billet in the baseline are summarized.

The calculation of emission reductions is based on the most plausible scenario in a transparent manner as described in Appendix A paragraph 95 (d).

Outstanding issues related to Compliance of the monitoring plan (94-98) PP's response and the AIE conclusion are summarized in Appendix A Table 2.

The issues concern:



- Provision in the MR explanation of the 10% increase of the specific consumption of pig iron with regard to the determined PDD (CAR 01);
- Provision in the MR theoretical justification referring to the JISC' Guidance on criteria for baseline setting and monitoring to justify the applied revisions in the determined Monitoring plan (CAR 02);
- Provision in the second monitoring period evidence that IT procedure is developed to guarantee that primary data are secured during any switch to new server or other emergency issues (FAR 02).

### 3.5 Revision of monitoring plan (99-100)

The project participants provided an appropriate justification for the proposed revision, which is referred in MR Section C).

For consistency and transparency reasons the MR Developer presented the full history of revisions in the MR Section C namely:

- Recording frequency of Carbon content in dry coal charge (new);
- Recording frequency of Carbon content in dry metallurgical coke (new);
- Monitoring of Electricity consumption for production of nitrogen;
- Monitoring of Electricity consumption for production of argon;
- Consumption of HBI in EAFP (new);
- CO2 emissions from consumption of grid electricity by EAF-180 via 220/35 kV step-down substation during smelting of profiled steel grades (new).

Necessary changes were introduced into the calculation formulae No D.1.1.2.-5, D.1.1.2.-5.1, D.1.1.2.-6, and D.1.1.2.-14-3 in MR.

The AIE confirms the MR conclusion that these deviations do not influence on the final result and are applied to improve applicability of the information collected, in line with paragraphs 30 (b) and 41 of "Guidance on criteria for baseline setting and monitoring" (Version 03).

Outstanding issue related to Revision of monitoring plan (99-100), PP's response and the AIE conclusion are summarized in Appendix A Table 2. The issue concerns:

- Consistency with Clause 5.9 of PD MMK 3-DF-13-2011 "Regulation on monitoring of GHG emissions reduction" (GHG monitoring procedure) to the approval of annual monitoring report (CAR 03).

### 3.6 Data management (101)

The data and their sources, provided in monitoring report, are clearly identified, reliable and transparent. The evidence and records used for the monitoring are maintained in a traceable manner.



The implementation of data collection procedures is basically in accordance with the determined monitoring plan and is an integral part of the operational routine at MMK including QC and QA procedures are the part of the Integrated Quality and Environmental Management System (IMS) of MMK certified to ISO 9001-2008 and ISO 14001:2004).

The AIE has received primary data for the monitoring period and checked them during the site visit. No material errors, omissions, or misstatements with regard to the consistency and correctness of the primary data and MR were identified by the verifier.

AIE was provided the following evidence of QA and QC procedures:

- (i) Corporate Standard PD MMK 3-DF-13-2011 "Regulation on monitoring of GHG emissions reduction", approved by the Executive director valid for the audit date;
- (ii) Certificates of calibration of current measuring equipment (obligatory for periodic official calibration) used for the monitoring issued by the state organization "Magnitogorsk Center of standardization, metrology and certification" (calibration dates all checked by the verifier during the site visit, /21, 26, 27/);
- (iii) Certificates of calibration of current measuring equipment (internal periodic calibration) used for the monitoring issued by the state organization "Magnitogorsk Center of standardization, metrology and certification" (calibration dates all checked by the verifier during the site visit, /18, 23, 26/);
- (iv) Certificate of compliance issued for the natural gas volume measuring unit (lines A and B) by the state organization "Tumen Center of standardization, metrology and certification" (calibration date December 2010).

Issues (i) – (iv) are explicitly reported in MR Appendix 3.

The function of the measuring equipment, including their calibration status, is in order a response to FAR 04 issued following the site visit.

Outstanding issues related to Data management (101), PP's response and the AIE conclusion are summarized in Appendix A Table 2. The issues concern:

- Provision in the MR inventory/ individual number of the metering equipment used for carrying out of Monitoring plan in Appendix 3 of MR to verify the calibration status of them (CAR 04);
- Provision in the MR justification of non-fulfilment of the yearly scheduled time-table for the measuring sets internal calibration (Diaphragms used for non-commercial internal monitoring of:



- (a) Blast-Furnace Gas and Coke Oven Gas in Blast-Furnace Plant and By-Product Coke Plant (both input and Consumption);
- (b) Oxygen production at Compression station (CS) #4 – metering unit in section #1 (technological);
- (c) Output of oxygen by Compression station (CS) #4 – metering unit in section #4;
- (d) Output of oxygen by CS #4 – metering unit in section #5 (technical);
- (e) Output of oxygen by CS #4 – metering unit in section #5 (technological) (CAR 05);
- Ensure that at the next monitoring period the calibration process of the metering equipment and sets installed at the monitoring points within the Monitoring Plan are properly audited by the internal audit within the certified QMS and fulfill the output in the next Monitoring Reports. Note: that all the prescribed actions proposed in the official Memo #GI-066 dated 27.03.12 are fully implemented. (FAR 04)

### **3.7 VERIFICATION REGARDING PROGRAMMES OF ACTIVITIES (102-110) – Not applicable**

## **4 VERIFICATION OPINION**

Bureau Veritas Certification has performed the third periodic verification of the project “Implementation of arc-furnace steelmaking at Magnitogorsk Iron and Steel Works”. The verification 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 verification consisted of the following three phases: i) desk review of the project design and the baseline and monitoring plan; ii) follow-up on-site interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification report and opinion.

The management of OJSC “Magnitogorsk Iron and Steel Works” is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions of the project on the basis set out within the revised project Monitoring Plan. The development and maintenance of records and reporting procedures in accordance with that plan, including the calculation and determination of GHG emission reductions from the project, is the responsibility of the management of the project.



Bureau Veritas Certification verified the Project Monitoring Report version 1.1 dated 05.04.12 for the reporting period as indicated below. Bureau Veritas Certification confirms that the project is implemented as per determined changes. Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately. The monitoring system is in place and the project is generating GHG emission reductions.

Bureau Veritas Certification can confirm that the GHG emission reduction is accurately calculated and is free of material errors, omissions, or misstatements. Our opinion relates to the project's GHG emissions and resulting GHG emissions reductions reported and related to the approved project baseline and monitoring, and its associated documents. Based on the information we have seen and evaluated, we confirm, with a reasonable level of assurance, the following statement:

Reporting period: From 01/01/2011 to 31/12/2011

Baseline emissions	: 2,640,526 tCO <sub>2</sub> equivalents.
Project emissions	: 1,436,676 tCO <sub>2</sub> equivalents.
Leakage	: 3,681 tCO <sub>2</sub> equivalents.
Emission Reductions	: 1,200,169 tCO <sub>2</sub> equivalents.





## 5 REFERENCES

### Category 1 Documents:

Documents provided by CTF Consulting, LLC that relate directly to the GHG components of the project.

- /1/ JI MONITORING REPORT "Implementation of arc-furnace steelmaking at Magnitogorsk Iron and Steel Works", Version 1.0, 30 January 2012 and version 1.1 dated 05 April 2012. OJSC MMK.
- /2/ ERUs calculation MMK EAFP 2011 ver 1.0\_30 01 12 and ERUs calculation MMK EAFP 2011 ver 1.1\_05.04.12. Excel spreadsheet for calculation of ER.
- /3/ PDD "Implementation of arc-furnace steelmaking at Magnitogorsk Iron and Steel Works", version 1.4 dated on 15.01.2010, version 1.5 dated on 31.01.2011.
- /4/ Letter of Approval by the Russian Federation on the JI project "Implementation of arc-furnace steelmaking at Magnitogorsk Iron and Steel Works" in form of the Order #709 of Ministry for Economic Development of the RF dated on 30.12.2010.
- /5/ Letter of Approval by the NL Agency (DFP of the Netherlands), the State of the Netherlands Ministry of Economic Affairs, Agriculture and Innovation on the JI project "Implementation of arc-furnace steelmaking at Magnitogorsk Iron and Steel Works". Issue dated 08.03.11.

### Category 2 Documents:

Background documents related to the design and/or methodologies employed in the design or other reference documents obtained in the course of 3d verification.

- /6/ Corporate Standard PD MMK3-DF-13-2011 "Regulation on monitoring of GHG emissions reduction", ver.2, approved by the Executive director valid for the audit date.
- /7/ State Statistic Forms 2-tp of OJSC "MMK" (water consumption, waste generation) for 2011
- /8/ State statistic environmental form 2-tp (air) of "MMK" in 2011
- /9/ Environmental permissions and limits issued for "MMK" by Interregional Department of Rostekhnadzor for Ural Federal Okrug. All valid on the date of the site visit.
- /10/ Executive Report about air pollution control within the plant protection zone 6 august 2011
- /11/ Monthly Technical Reports of EAFP, BFP, CEST, TD of "MMK", 2011.
- /12/ Natural gas Quality Certificates issued by OAO "Gazprom" (2011, Monthly data)
- /13/ Technical Memo GI-0166 dated 05.02.2010 (About hot- briquette-iron (HBI) usage at EAFP)



- /14/ Information matrixes of EAFP, BFP, CEST, TD of "MMK", 2011.
- /15/ Analysis of electricity usage by Departments of OAO "MMK" (2011, Monthly data)
- /16/ Technical Report "Fuel consumption by heat/electricity Plant Producers" (2011, Monthly data)
- /17/ Explanatory memorandum with Appendix 1-5 issued by Center for Energy Saving Technologies to monitor Coke Oven Gas and Blast-Furnace Gas with measuring Diaphragms. 07.03.12
- /18/ Official Prescription "About Measuring Diaphragms Revisions". Signed by Acting as Chief Engineer of OAO "MMK", 07.03.12
- /19/ Technical Data for carbon contents in production & technological gases used at MMK
- /20/ A technological flow diagram of EAFP, OHP. All valid on the date of the site visit. Actual from the second verification for YTD.
- /21/ A timetables for the obligatory testing of the measuring instrument (calibration) under service conditions of BFP, EAFP (2011)
- /22/ Accreditation attestation issued by State Federal Agency for Technical Regulation and Metrology (GOST R) # ROSS RU.0001.512269 valid till 25.09.2012
- /23/ Accreditation attestation to conduct calibration activity with Annex of scope issued by State national service of legal metrology valid till 07.06.2013
- /24/ Environmental licenses of MMK valid on the date of the site visit.
- /25/ MMK 3-TU-05-2011 revision 2 "Regulation on metrological service of OJSC MMK"
- /26/ Measuring equipment calibration and testing records for measuring points as per monitoring plan. All valid for the verification date.
- /27/ ISO 14001:2004 Certificate #04.104.022041
- /28/ 2006 IPCC Guidelines on National Greenhouse Gas Inventories. Volume 3 Chapter 4.
- /29/ JISC Guidance on criteria for baseline setting and monitoring. Version 03.
- /30/ Act of acceptance for commercial operation of process control system (EAFP) dated 02.03.12.
- /31/ Technical Letter as a response to the AIE request regarding the matter, which is given in Appendix 5 of the MR ver.1.1 dated 05.04.12 "Response to the Corrective Actions Request regarding measuring by orifice plates" of the Monitoring report, version 1.1 of 27/03/2012.
- /32/ Official Memo #GI-066 dated 27.03.12 signed by acting as Chief Engineer G.Tschurov.



**Persons interviewed:**

List of persons interviewed during the verification or persons that contributed with other information that is not included in the documents listed above.

- /1/ A. Mitchin – Carbon Projects Manager
- /2/ E.Peshnenko – Acting as Chief Metrologist.
- /3/ K.Krepostnoy - IT Department
- /4/ N.Scherbakov – Lead Specialist of Environmental protection laboratory
- /5/ E.Ptitsin - Lead Engineer of Environmental protection laboratory
- /6/ S.Yakhterev - EAFP works manager
- /7/ A.Ovsyannikov – Deputy EAFP works manager.
- /8/ I.Schmanev- Lead Economist
- /9/ A.Baschkorov – acting as EAFP electrician
- /10/ A.Bogatyrev – Senior foreman (EAFP)
- /11/ Y.Dolgorukov - EAFP works power Engineer
- /12/ O.Maevskiy – Lead Specialist in automatic performance, BFP
- /13/ A.Begenyuk – Lead Specialist of Technical Group, BFP
- /14/ M.Gaylutdinova – Economist of Economic Department
- /15/ I.Kucheroval – Manager in rate setting of Technical Department
- /16/ S.Sidelnikov – Chief of CEST
- /17/ T.Yakovenko – Branchwork manager, CEST
- /18/ L.Koptsev – Chief of Laboratory of Analysis and account of energy consumption, CEST
- /19/ K. Myachin – Developer of the Monitoring report, Carbon projects manager, CTF Consulting, LLC



## APPENDIX A: COMPANY PROJECT VERIFICATION PROTOCOL

**Table 1**

**Check list for verification, according to the JI DETERMINATION AND VERIFICATION MANUAL (DVM) Version 01**

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
<b>Project approvals by Parties involved</b>				
90	Has the DFPs of at least one Party involved, other than the host Party, issued a written project approval when submitting the first verification report to the secretariat for publication in accordance with paragraph 38 of the JI guidelines, at the latest?	<p>Written approval of the project by the Russian Government is issued by the decree of the Ministry of Economic Development N709 dated 30 December 2010. The project is listed under number 04 in the list of approved projects. The approval was provided to the AIE.</p> <p>The Declaration of Approval from State of the Netherlands, acting through the Ministry of Economic Affairs, Agriculture and Innovation and its implementing agency "NL Agency", being the Designated Focal Point for Joint Implantation (JI) in The Netherlands has been received for the project by 8th March 2011.</p> <p>Thereby the project has been approved both by host Party and Party involved in the JI project, other than the host Party.</p>	OK	OK
91	Are all the written project approvals by Parties involved unconditional?	Yes, all the written project approvals by Parties involved are unconditional.	OK	OK
<b>Project implementation</b>				
92	Has the project been implemented in accordance with the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website?	<p>The project has been implemented in accordance with the determined PDD. The determination of the project cannot be deemed final in JI terms since it was not made publicly available by the AIE on the UNFCCC website.</p> <p>The project intends to undergo a multi-stage reconstruction of the existing Open-Hearth Furnace Plant (OHFP) followed by transition to production of profiled steel in the electric arc furnaces (EAF) and its teeming in the</p>	FAR 01	Pending



## VERIFICATION REPORT

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		<p>continuous casting machines (CCM) instead of production of the same steel and profiled billet in the open-hearth plant (OHP) and blooming mill plant with some temporary steel output reduction.</p> <p>On the day of audit, all the equipments, i.e., two high-capacity electric arc furnaces (EAF-180) manufactured by Austrian company "Voest-Alpine AG" with output capacity of 2 million tons of liquid steel per year each, out-of-furnace steel processing aggregates, one slabbing mill and two continuous casting machines manufactured by Austrian company "VAI" for production profiled billet were installed and one Double-Bath Steelmaking Units (DBSU) was left to operate under partial load.</p> <p>During the monitoring period, some changes were made to the operational equipment: carbon analyzer LECO SC144DR used for measuring of monitoring parameters (a) Carbon content in dry coal charge, % by mass and (b) Carbon content in dry metallurgical coke, % by mass failed in August 2011. For this reason appropriate data was not available from September until December 2011. In the calculations the value of the carbon content in dry coal charge for the period September – December 2011 was taken as monthly average value for the period January – August 2011 (80,19 % by mass.). These changes are justified by the MR developers as changes in the Monitoring Report in Section C. "Adjustments and deviations from the monitoring plan presented in PDD" and positively determined by the verifier based on the appropriate analysis of the justification's provided at the site visit. The MR Developers applied the fixed value of the</p>		



## VERIFICATION REPORT

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		<p>monthly average value of carbon content in coal charge and metallurgical coke for the period January – August 2011 instead of using the respective IPCC default values. The verifier agree with MR developers that (see extract from the MR Section C): “Applying the default values of IPCC 2006 for CO2 emission calculations in year 2011 the total mass of carbon in the input flow for production of metallurgical coke in BPCP would be decreased by 8.2% (474 ths. tones C) meanwhile total mass of carbon in the output flow from production of metallurgical coke would be decreased only by 0.1 % (4.6 ths. tones C). Thereby for production of 4626.3 ths. tones of metallurgical coke in BPCP in 2011 the greater quantities of coal charge would need to be used in case of proposed lower carbon content of coal charge (73 % by mass instead of actually applied 80.19 % by mass“.</p> <p>These approach is positively determined by the verifier as the proposed revisions of the Monitoring Plan improve applicability of information collected, compared to the original monitoring plan without changing conformity with the relevant rules and regulations for the establishments of monitoring plans as per paragraphs 30)b) and 41 of the Guidance on criteria for baseline setting and monitoring, Version 03.</p> <p>Conclusion is pending a response to CAR 02 and FAR 01.  <b>FAR 01.</b> Please ensure in the next monitoring period that the internal procedure PD MMK 3-DF-13-2011 “Regulation on monitoring of GHG emissions reduction”, created as a result of the realization of the project: “Implementation of</p>		



## VERIFICATION REPORT

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		arc-furnace steelmaking at Magnitogorsk Iron and Steel Works" (monitoring procedure) includes a troubleshooting procedures to check whether there are possibilities of redundant data monitoring in case of having problems with the used monitoring equipment. Such procedures may reduce risks for the buyers of emission reductions (e.g. the Client).		
93	What is the status of operation of the project during the monitoring period?	The project started generation of Emission Reduction Units on 01/01/2008.	OK	OK
<b>Compliance with monitoring plan</b>				
94	Did the monitoring occur in accordance with the monitoring plan included in the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website?	<p>The Monitoring System is operational in Magnitogorsk Iron and Steel Works OJSC. Monitoring of GHG emission reductions was carried out as per the Monitoring Plan of the determined PDD although there are some deviations. The deviations from monitoring plan are specified in section C of MR namely:</p> <ul style="list-style-type: none"> <li>– Recording frequency of Carbon content in dry coal charge;</li> <li>– Recording frequency of Carbon content in dry metallurgical coke;</li> <li>– Monitoring of Electricity consumption for production of nitrogen;</li> <li>– Monitoring of Electricity consumption for production of argon</li> <li>– Consumption of HBI in EAFF.</li> </ul> <p>Section C of MR includes appropriate justification for these deviations.</p> <p><b>CAR 01.</b> The MR, Section B.1 states that: "The project was fully put into operation is 2006 and environmental protection equipment designed for it (gas purification units at EAFs, etc) operates normally" but then the specific consumption of pig iron increased more than 10% in</p>	CAR 01 CAR 02	OK OK



## VERIFICATION REPORT

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		comparison with ex-ante value of the determined PDD. Please include to MR the explanation of this deviation. <b>CAR 02.</b> Please provide in the MR theoretical justification referring to the JISC' Guidance on criteria for baseline setting and monitoring to justify the applied revisions in the determined Monitoring plan.		
95 (a)	For calculating the emission reductions or enhancements of net removals, were key factors, e.g. those listed in 23 (b) (i)-(vii) above, influencing the baseline emissions or net removals and the activity level of the project and the emissions or removals as well as risks associated with the project taken into account, as appropriate?	AIE confirms that for calculating the emission reductions, key factors, those listed in 23 (b) (i)-(vi) DVM, influencing the baseline emissions and the activity level of the project as well as risks associated with the project were taken into account (refer to PDD Section B.2).	OK	OK
95 (b)	Are data sources used for calculating emission reductions or enhancements of net removals clearly identified, reliable and transparent?	The data sources used for calculating emission reductions are clearly identified, reliable and transparent. Calculation of emission reduction was carried out on the excel spreadsheets "ERUs calculation MMK EAFP 2011 ver 1.0_30 01 12". The results of calculation of emission reduction are presented in MR Section D. <b>Pending.</b> Please provide evidence of initial data used for emission reduction calculation. <b>Verifier's site visit comments:</b> The Plant's Managers provided appropriate evidences for the initial data used for emission reduction calculation. Please kindly response to FAR 02. <b>FAR 02.</b> Please ensure in the second monitoring period that IT procedure is developed to guarantee that primary data are secured during any switch to new server: example: daily reports in EAFP for February 2011(three days) does not include scrap metal value (these data are available in February Technical report of EAFP).	FAR 02	Pending



## VERIFICATION REPORT

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
95 (c)	Are emission factors, including default emission factors, if used for calculating the emission reductions or enhancements of net removals, selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice?	The verifier confirms that the emission factors which are used for calculating the emission reductions are selected by carefully balancing accuracy and reasonableness, and the choice is appropriately justified by MR developer, such as emission factor for dry metallurgical coke produced is calculated in line with Tier 3 approach described in Section 4.2.2 of Chapter 4 of IPCC Guidelines on National GHG Inventories 2006.	OK	OK
95 (d)	Is the calculation of emission reductions or enhancements of net removals based on conservative assumptions and the most plausible scenarios in a transparent manner?	Conservative assumptions are explicitly stated in the determined PDD, Sections B.1 and D. The calculation of emission reductions are based on conservative assumptions and the most plausible scenarios in a transparent manner	OK	OK
<b>Applicable to JI SSC projects only Paragraph 96 not applicable</b>				
<b>Applicable to bundled JI SSC projects only Paragraphs 97-98 No applicable</b>				
<b>Revision of monitoring plan</b>				
<b>Applicable only if monitoring plan is revised by project participant</b>				
99 (a)	Did the project participants provide an appropriate justification for the proposed revision?	Section C of MR includes appropriate justification of deviations (refer to 94). <b>CAR 03.</b> Please ensure consistency with Clause 5.9 of PD MMK 3-DF-13-2011 "Regulation on monitoring of GHG emissions reduction" (GHG monitoring procedure) to the approval of annual monitoring report or justify otherwise: in fact the original Monitoring Report is approved by Chief financial officer of MMK instead of Executive director as per of determined PDD and the monitoring procedure.	CAR 03	OK
99 (b)	Does the proposed revision improve the accuracy and/or applicability of information collected compared to the original monitoring plan without changing conformity with the relevant rules and regulations for the establishment of monitoring plans?	Pending a response to CAR 01 – CAR 02.	Pending	OK



## VERIFICATION REPORT

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
<b>Data management</b>				
101 (a)	Is the implementation of data collection procedures in accordance with the monitoring plan, including the quality control and quality assurance procedures?	An information/process flow diagram, describing the entire process from raw data to reported totals is developed at the stage of PDD determination and is fulfilled without changes. But still pending a response to CAR 03 and FAR 01 – 02.	OK	OK
101 (b)	Is the function of the monitoring equipment, including its calibration status, is in order?	<p>Magnitogorsk Iron and Steel Works OJSC has relevant plans, procedures and schedules for calibration of monitoring equipment. Measuring devices have records of calibration and are periodically exposed to due maintenance procedures.</p> <p><b>CAR 04.</b> Please provide inventory/ individual number of the metering equipments used for carrying out of Monitoring plan in Appendix 3 of MR to verify the calibration status of them.</p> <p><b>Pending.</b> Please provide to AIE evidence of calibration of the metering equipment.</p> <p><b>CAR 05.</b> It was found out during the site visit that measuring of gas flows:</p> <ul style="list-style-type: none"> <li>(a) Blast-Furnace Gas and Coke Oven Gas in Blast-Furnace Plant and By-Product Coke Plant (both input and Consumption);</li> <li>(b) Oxygen production at Compression station (CS) #4 – metering unit in section #1 (technological);</li> <li>(c) Output of oxygen by Compression station (CS) #4 – metering unit in section #4;</li> <li>(d) Output of oxygen by CS #4 – metering unit in section #5 (technical);</li> </ul>	CAR 04 CAR 05 FAR 04	OK OK Pending





## VERIFICATION REPORT

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		<p>(e) Output of oxygen by CS #4 – metering unit in section #5 (technological)</p> <p>are done by not properly calibrated measuring sets: Diaphragms are not calibrated or rejected. The appropriate QMS Standard for the measuring of the gas flows provides the risk based calculation model taking into account the possible defects in the measuring sets such as not proper or missed calibration of the Diaphragms. The Standard is approved and justified in appropriate way under the certified QMS to ISO 9001:2008. Please kindly justify that the applied approach in the Standard does ensure the correctness of the measuring gas flows or provide an appropriate conservative method for the data calculation.</p> <p>After the review of the appropriate documented evidence of the corrective actions to illuminate the CAR 05 above and accepted the PP's approach the verifier issued new FAR 02 as below.</p> <p><b>FAR 04.</b> Please ensure that at the next monitoring period the calibration process of the metering equipment and sets installed at the monitoring points within the Monitoring Plan are properly audited by the internal audit within the certified QMS and fulfil the output in the next Monitoring Reports. Note: that all the prescribed actions proposed in the official Memo #GI-066 dated 27.03.12 are fully implemented.</p>		
101 (c)	Are the evidence and records used for the monitoring maintained in a traceable manner?	<p>The evidence and records can be traced to origins. The monitoring and metering systems are installed and were inspected on site. They are in compliance with national law and power industry regulations.</p> <p>OJSC "MMK" had monitored all parameters used in the</p>	FAR 03	Pending



## VERIFICATION REPORT

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		<p>revised monitoring plan.</p> <p>Monitoring report is subject for verification. Information about each parameter is presented in the approved form by certified QMS of OJSC "MMK". The data relating to the monitoring of the project is posted on a dedicated server of OJSC "MMK".</p> <p>In the course of the first verification the following FAR was issued on paragraph 101 (c):</p> <p><b>FAR 03.</b> Please consider the amendments in the GHG Monitoring Procedure issued by MMK "Regulation on monitoring of GHG emissions reduction. PD MMK 3-SSGO-01-2010" to specify the protection and storage procedure of master copies of handwritten and electronic records, spread sheets, and reports and the required number of its master copies.</p> <p>The MR states that: "The respective internal procedure has been reviewed and named PD MMK 3-DF-13-2011." Master copy of the annual verified monitoring report in paper form is kept until January 1, 2015 by the head of the Carbon market group.</p> <p><b>Pending.</b> Please make available to verifier the procedure MMK 3-DF-13-2011.</p> <p>Conclusion is pending a response to CAR 04 and CAR 05.</p>		
101 (d)	Is the data collection and management system for the project in accordance with the monitoring plan?	<p>The data collection and management system for the project is developed at the stage of PDD determination and is mainly maintained in accordance with the monitoring plan.</p> <p>Conclusion is pending a response to CAR 04 and CAR 05, FAR 01 – 04.</p>	Pending	Pending
Verification regarding programs of activities (additional elements for assessment) Paragraphs 102-105 Not applicable				
Applicable to sample-based approach only Paragraphs 106-110 Not applicable				

Table 2 Resolution of Corrective Action and Clarification Requests



## VERIFICATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1	Summary of project participant response	Verification team conclusion
<p><b>CAR 01.</b> The MR, Section B.1 states that: "The project was fully put into operation is 2006 and environmental protection equipment designed for it (gas purification units at EAFs, etc) operates normally" but then the specific consumption of pig iron increased more than 10% in comparison with ex-ante value of the determined PDD. Please include to MR the explanation of this deviation.</p>	94	<p><u>Response 1</u></p> <p>The text in the Monitoring report, version 1.1 of 27/03/2012 has been amended to demonstrate the up-to-date information:</p> <p>"The project was fully put into operation is 2006 and environmental protection equipment designed for it (gas purification units at EAFs, etc) operates normally.</p> <p>During implementation of the project the special gas purification units were designed for new equipment of the EAFP in particular the electric arc furnaces have been equipped with bag filters. For operation of the double-bath steelmaking unit (DBSU) #32 among the existed gas purification the same one from the dismantled DBSU #29 was retained, so the efficiency of the exhaust gas cleaning was increased.</p> <p>A total environmental impact for the section steel production has been significantly reduced in comparison with pure open-hearth/ingots casting technology. Despite the fact that during 2009-2011 due to the number of external and internal reasons (a recycling at Amcom installations of the iron containing scrap accumulated by the plant in the previous years) the share of the steel melted in the DBSU has increased in comparison with 2007-2008 the OJSC "MMK" complies</p>	<p><u>Conclusion on Response 1</u></p> <p>The presented explanations in the MR are accepted as appropriate to close the CAR.</p>



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		with the norms of environmental impact established by environmental protection authorities.”	
<b>CAR 02.</b> Please provide in the MR theoretical justification referring to the JISC’ Guidance on criteria for baseline setting and monitoring to justify the applied revisions in the determined Monitoring plan.	94	<u>Response 1</u> The applied revisions in the Monitoring plan are summarized in the Section C of the Monitoring report, version 1.1 of 27/03/2012, the reference to the JI Guidance on criteria for baseline setting and monitoring, version 03 has been added there on page 21.	<u>Conclusion on Response 1</u> The presented amendments in the MR are accepted. CAR is closed.
<b>CAR 03.</b> Please ensure consistency with Clause 5.9 of PD MMK 3-DF-13-2011 “Regulation on monitoring of GHG emissions reduction” (GHG monitoring procedure) to the approval of annual monitoring report or justify otherwise: in fact the original Monitoring Report is approved by Chief financial officer of MMK instead of Executive director as per of determined PDD and the monitoring procedure.	99(a)	<u>Response 1</u> According to the valid internal monitoring procedure PD MMK 3-DF-13-2011 edition 2 of 27/07/2011, item 5.11, 5.12 the Monitoring report in initial and final version (after completion of verification) is approved by the Chief financial officer of MMK. This position at the same time supervises the activity of Carbon market group (a coordinator of JI project). Such revision was made following the changes in the management structure of MMK to ensure a proper top management control on monitoring process of JI projects. The mentioned item 5.9 does not refer to the approval of annual monitoring report.	<u>Conclusion on Response 1</u> The presented explanations are accepted. CAR is closed.
<b>CAR 04.</b> Please provide inventory/ individual number of the metering equipments used for carrying out of Monitoring plan in Appendix 3 of MR to verify the calibration status of them.	101(b)	<u>Response 1</u> The up-date of the Appendix 3 “Status of metering units used in monitoring by structural departments of MMK” has been made in the Monitoring report, version 1.1 of 27/03/2012 with addition of the serial (inventory) number for each used metering device where applicable.	<u>Conclusion on Response 1</u> CAR is closed, the requested inventory/ individual number of the metering equipment used for carrying out of Monitoring plan in Appendix 3 of MR to verify the calibration status of them is updated.



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<p><b>CAR 05.</b> It was found out during the site visit that measuring of gas flows:</p> <ul style="list-style-type: none"> <li>(a) Blast-Furnace Gas and Coke Oven Gas in Blast-Furnace Plant and By-Product Coke Plant (both input and Consumption);</li> <li>(b) Oxygen production at Compression station (CS) #4 – metering unit in section #1 (technological);</li> <li>(c) Output of oxygen by Compression station (CS) #4 – metering unit in section #4;</li> <li>(d) Output of oxygen by CS #4 – metering unit in section #5 (technical);</li> <li>(e) Output of oxygen by CS #4 – metering unit in section #5 (technological)</li> </ul> <p>are done by not properly calibrated measuring sets: Diaphragms are not calibrated or rejected. The appropriate QMS Standard for the measuring of the gas flows provides the risk based calculation model taking into account the possible defects in the measuring sets such as not proper or missed calibration of the Diaphragms. The Standard is approved and justified in appropriate way under the certified QMS to ISO 9001:2008. Please kindly justify that the applied approach in the Standard does ensure the correctness of the measuring gas flows or provide an appropriate conservative method for the data calculation.</p>	101 (b)	<p><u>Response 1</u></p> <p>During preparation of the information on the status of the nodes metering nodes for consumption of secondary energy resources it was indeed pointed out that most of standard orifice devices (orifice plates) do not pass the periodic inspection and certain orifice plates do not correspond to the regulatory requirements (to be rejected). For the boundaries of JI project “Implementation of arc-furnace steelmaking at Magnitogorsk iron and steel works” the oxygen consumption metering is not relevant (this relates to the project “Production of continuously casted slab steel billet by arc-furnace technique at OJSC MMK” and was just added to provide to verifier a full picture).</p> <p>Center for Energy Saving Technologies of OJSC “MMK” (CEST) which is a owner of this process of measurement in the quality management system has presented an explanation regarding the matter, which is given in Appendix 5</p> <p>“Response to the Corrective Actions Request regarding measuring by orifice plates” of the Monitoring report, version 1.1 of 27/03/2012.</p>	<p><u>Conclusion on Response 1</u></p> <p>CAR is closed based on the active corrective actions made by Project Owner and evidence provided to the verifier. But the new FAR 02 was issued to proper monitor the calibration process as per the Monitoring Plan (refer to 101 (b)).</p>
		<p>Due to it is volumetric it was not presented here in the column. However the problem has been accepted to be solved by OJSC “MMK” and respective management order on</p>	



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		comprehensive checking up of orifices has been issued. In further it will be specified by concrete timeline for each metering node depending on the technical possibility to stop the gas flow in the pipeline.	
<b>FAR 01.</b> Please ensure in the next monitoring period that the internal procedure PD MMK 3-DF-13-2011 "Regulation on monitoring of GHG emissions reduction", created as a result of the realization of the project: "Implementation of arc-furnace steelmaking at Magnitogorsk Iron and Steel Works" (monitoring procedure) includes a troubleshooting procedures to check whether there are possibilities of redundant data monitoring in case of having problems with the used monitoring equipment. Such procedures may reduce risks for the buyers of emission reductions (e.g. the Client).	92	<u>Response 1</u> The changes into the internal procedure PD MMK 3-DF-13-2011 "Regulation on monitoring of GHG emissions reduction" will be appropriately considered as per request.	<u>Conclusion on Response 1</u> Pending to be reviewed at the next monitoring Report.
<b>FAR 02.</b> Please ensure in the second monitoring period that IT procedure is developed to guarantee that primary data are secured during any switch to new server: example: daily reports in EAFP for February 2011(three days) does not include scrap metal value (these data are available in February Technical report of EAFP).	95 (b)	<u>Response 1</u> According to the contract #174293 of 13/02/2010 the modernization of the Automated Control System of Electric Arc Furnace Plant was done. Since 04/10/2010 it was in the experimental-industrial exploitation and since 01/03/2012 it was put into industrial operation (i.e. finally accepted). The appropriate document has been submitted to the AIE. By information of the Department of information technologies of MMK the mentioned data on scrap consumption has not been lost totally; it is backed-up at another server.	<u>Conclusion on Response 1</u> Pending to be reviewed at the next monitoring Report.
<b>FAR 03.</b> Please consider the amendments in the GHG Monitoring Procedure issued by MMK "Regulation on monitoring of GHG emissions reduction. PD MMK 3-	101 (c)	<u>Response 1</u> The changes into the internal procedure PD MMK 3-DF-13-2011 "Regulation on	<u>Conclusion on Response 1</u> Pending to be reviewed at the next monitoring Report.



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SSGO-01-2010" to specify the protection and storage procedure of master copies of handwritten and electronic records, spread sheets, and reports and the required number of its master copies.		monitoring of GHG emissions reduction" will be appropriately considered as per request.	
<b>FAR 04.</b> Please ensure that at the next monitoring period the calibration process of the metering equipment and sets installed at the monitoring points within the Monitoring Plan are properly audited by the internal audit within the certified QMS and fulfill the output in the next Monitoring Reports. Note: that all the prescribed actions proposed in the official Memo #GI-066 dated 27.03.12 are fully implemented.	101 (b)	<u>Response 1</u> The order #GI-066 dated 27.03.12 does not contain any concrete timeline for implementation of the corrective measures. Taking into account the specifics of the plant it is hardly possible to check up all the orifice plates included into monitoring boundary as it requires full stop of the major equipment like blast furnace. However MMK will soon issue the additional order with time-oriented work plan for each metering node that is correspondent to the maintenance schedule of the major equipment.	<u>Conclusion on Response 1</u> Pending to be reviewed at the next monitoring Report.