«CONFIRMED»
Technical director
JSC “Ashinskiy Metallurgical Works”

_____ Shakirov Z.H.

10 February 2011

«APPROVED»
General Director
JSC “Ashinskiy Metallurgical Works”

_____ Evstratov V.G.

10 February 2011

MONITORING REPORT OF JOINT IMPLEMENTATION PROJECT

Reconstruction of the steelmaking at JSC “Ashinskiy Metallurgical Works”, Asha, Russian Federation

over period: 01.01.2008 – 31.12.2010

(version 02)

February 2011

Contents

SECTION A. GENERAL DESCRIPTION OF THE PROJECT AND MONITORING

A.1. General information about monitoring report

Project: Reconstruction of the steelmaking at JSC "Ashinskiy Metallurgical Works", Asha, Russian Federation

Sectoral scope: (9) Metal production

Version: 02

Date: 07.02.2011

A.2. Short description of the project

The project of the reconstruction of the steelmaking at JSC "Ashinskiy Metallurgical Works" (JSC "AMW") is implemented with purpose of modern electrical steelmaking complex building, steel production increase, energy efficiency and GHG emission reductions.

The reconstruction of the steelmaking at JSC "Ashinskiy Metallurgical Works" is performed by means of construction of the continuous-casting machine (STB, Italy) – CCM and the electric arc furnace with loading conveyor CONSTEEL (DANIELI, Italy) – EAF. Besides the main equipment, it is foreseen to build transmission lines (220 kV) over a distance of 70 km and a scaling substation for powering the EAF. The commissioning of the project's equipment is made in two stages: first CCM – in 2007, second EAF – in 2010.

As a result of the implementation of the specified activities, steel and rolled products will be produced according to the following scheme:

- begin 2008 – middle 2010 (after CCM commissioning – till EAF commissioning): melting of steel in the open-hearth furnaces, processing of steel in the ladle furnace, steel casting in the CCM and into the moulds, rolling of steel billets in the rolling plant #1;
- since middle 2010 (after EAF commissioning): melting of steel in the EAF, processing of steel in the ladle furnace, steel casting in the CCM, rolling of steel slabs in the rolling plant #1.

The production of steel in the EAF shall amount to 1,000,000 tonnes per year. The output of rolled metal shall amount to 595,000 tonnes per year. The output of steel slabs as finished product for sale shall amount to 310,000 tonnes per year.

The project implementation allows to:

- shut-down the open-hearth furnaces;
- create a new steelmaking electric furnace;
- increase steel production;
- continuously cast steel into slabs instead of casting into moulds;
- improve working environment;
- reduce production costs;
- reduce pollution (environmental adverse effects);

- reduce greenhouse gas emissions.

Without the project implementation steel production at JSC "Ashinskiy Metallurgical Works" would be performed in open-hearth furnaces with a total output more than 650,000 tonnes per year. The open-hearth steel would be processed in the ladle furnace and cast into moulds. The output of ready rolled products from ingots according to the baseline scenario would be of 500,000 tonnes per year. Notwithstanding a smaller output of steel and rolled metal, the baseline scenario would offer steel and rolled metal of a quality similar to the project scenario through the use of the out-of-furnace technology in the ladle furnace. While the implementation of the project allows for an increase of steel and rolled metal production, the baseline scenario provides for an added-on output of steel about 420,000 tonnes per year at other iron-and-steel works in Russia.

The project implementation reduces greenhouse gas emissions by the following reasons:

- decrease in raw material consumption for steel production in steel plant;
- decrease in fuel consumption for steel and rolled metal production;
- decrease in metal losses when casting steel into moulds;
- decrease in steel consumption for production of rolled metal;
- decrease in raw materials and fuel consumption in auxiliary works.

A.3. Stages of the project implementation

Currently the project is implemented and operational. The main stages of the project implementation are provided below.

№	Stage	Date/period
1.	CCM	
1.1	Construction works	June 2006 – November 2006
1.2	Installation and pre-commissioning works	December 2006 – September 2007
1.3	Commissioning	25.09.2007
2.	EAF, transmission lines, substation	
2.1	Construction works	January 2008 – November 2009
2.2	Installation and pre-commissioning works	December 2009 – July 2010
2.3	Commissioning	23.07.2010

The project "Reconstruction of the steelmaking at JSC "Ashinskiy Metallurgical Works", Asha, Russian Federation" is approved as JI project by Order of Ministry of Economic Development #709 dated on 30.12.2010.[1] The Third Party (Sponsor Party) of the JI Project is not determined at present and will be determined later.

[1] The Letter of Approval from the Host Party is attached.

A.4. Deviations and corrections of approved PDD

Deviations and corrections of the project design documentation "Reconstruction of the steelmaking at JSC "Ashinskiy Metallurgical Works", Asha, Russian Federation" version 04 dated on 17.01.2011 determined by Bureau Veritas Certification are absent.

A.5. Monitoring period

Date of the start of monitoring: 01.01.2008

Date of the end of monitoring: 31.12.2010

A.6. Monitoring results for the current period

Period of monitoring	Project emissions (tCO_2-eq.)	Leakages (tCO_2-eq.)	Baseline emissions (tCO_2-eq.)	Emission reductions (tCO_2-eq.)
01.01.2008-31.12.2010	1,583,828	-	2,188,024	604,196

A.7. Methodology used for monitoring of GHGs emission reductions

The monitoring plan is elaborated based on JI specific approach in accordance with paragraph 9(a) of Guidance on criteria for baseline setting and monitoring (Version 02). The monitoring plan is presented in the project design documentation version 04 dated on 17.01.2011.

A.8. Deviations and corrections of approved monitoring plan

Deviations and corrections of approved monitoring plan presented in the project design documentation version 04 dated on 17.01.2011 are absent.

A.9. Changes since the last verification

The monitoring report over period 01.01.2008-31.12.2010 is the initial and first periodical report therefore the changes since the last verification are absent.

A.10. Person(s) responsible for the preparation and submission of the monitoring report

JSC "Ashinskiy Metallurgical Works"

Contact person: Mr. Michael Lovyagin, Chief Metrologist

Tel.: +7 351 593 29 01

Fax: +7 351 593 20 42

E-mail: kip@amet.ru

JSC “National Carbon Sequestration Foundation”

Contact person: Mr. Roman Kazakov, Principal Specialist

Tel.: +7 499 788 78 35 ext. 113

Fax: +7 499 788 78 35 ext. 107

E-mail: kazakovra@ncsf.ru

SECTION B. MAIN ACTIVITY ACCORDING TO THE MONITORING PLAN

B.1. Initial data for monitoring

B.1.1. List of fixed parameters for monitoring during the crediting period

№	Data variable	Description	Data unit	Source of data
1.	$W_{C,RMi}$	Carbon content of limestone	0.12 tC/t	2006 IPCC Guidelines for National Greenhouse Gas Inventories – Volume 3. Industrial Processes and Product Use, Chapter 4. Metal Industry Emissions, Table. 4.3, p. 4.27
2.	$W_{C,RMi}$	Carbon content of dolomite	0.13 tC/t	
3.	$W_{C,Fj}$	Carbon content of graphite electrodes	0.82 tC/t	
4.	$W_{C,RMi}$	Carbon content of coke	0.83 tC/t	
5.	$W_{C,STEEL}$	Carbon content of steel	0.0025 tC/t	National Inventory Report of Russia Federation for 1990-2008, 2009 (p. 110-113)
6.	$W_{C,RMi}$	Carbon content of pig iron (scrap iron)	0.043 tC/t	
7.	$W_{C,RMi}$	Carbon content of carbonaceous materials	0.95 tC/t	TU 1971-198373-846-24-2004 http://www.uglerod.com/prod.php
8.	$W_{C,Fj}$	Carbon content of natural gas	0.514 tC/thous.m^3	Calculated. Detailed information is provided in the section D of project design documentation.
9.	$W_{C,Fj}$	Carbon content in heavy fuel oil	0.852 tC/t	Calculated. Detailed information is provided in the section D of project design documentation.
10.	44/12	Ratio of CO_2 molecular weight to C molecular weight	3.667 tCO_2/tC	2006 IPCC Guidelines for National Greenhouse Gas Inventories – Volume 3. Industrial Processes and Product Use, Chapter 4. Metal Industry Emissions, p. 4.48

№	Data variable	Description	Data unit	Source of data
11.	$EF_{CO2,ELEC,grid,y}$	CO_2 emission factor for electric power produced in the electric power system and supplied to facilities consuming electric power	Year: 2008 — 0.565 tCO_2/MWh 2009 — 0.557 2010 — 0.550 2011 — 0.542 2012 — 0.534	Operational Guidelines for Project Design Documents of Joint Implementation Projects. Volume 1: General guidelines. Version 2.3. -Ministry of Economic Affairs of the Netherlands, 2004, p.43
12.	$EF_{CO2,IP}$	CO_2 emission factor for pig iron production from Russian metallurgical plants	1.510 tCO_2/t	Calculated. Detailed information is provided in the annex 4 of project design documentation.
13.	$EF_{CO2,SP,OUT,y}$	CO_2 emission factor for steel production from Russian metallurgical plants	1.766 tCO_2/t	Calculated. Detailed information is provided in the annex 4 of project design documentation.
14.	$SMC_{SP,BL,y}$	Specific molds consumption for steel production according to the baseline	0.026 t/t (steel)	Calculated. Detailed information is provided in the section D of project design documentation.
15.	$SEC_{MP,BL,y}$	Specific electric power consumption for the production process in the foundry plant according to the baseline	0.060 MWh/t	Calculated. Detailed information is provided in the section D of project design documentation.
16.	$SCAC_{MP,BL,y}$	Specific compressed air consumption for the production process in the foundry plant according to the baseline	0.147 thous.m^3/t	Calculated. Detailed information is provided in the section D of project design documentation.
17.	$EF_{CO2,MP,TECH,BL,y}$	Process emission factor for molds production according to the baseline	0.511 tCO_2/t	Calculated. Detailed information is provided in the section D of project design documentation.
18.	$P_{STEEL,RP,BL,max,y}$	Maximum rolled products manufacture in the rolling plant according to the baseline	500,000 t	Estimated. Detailed information is provided in the section D of project design documentation.
19.	$SSC_{RP,BL}$	Specific steel consumption for rolled metal production according to the baseline	1.355 t(steel) / t(rolled products)	Calculated. Detailed information is provided in the section D of project design documentation.
20.	$SRMC_{i,IRON,MP,BL,y}$	Specific pig iron consumption for molds production	0.605 t/t	Calculated. Detailed information is provided in the section B of project design documentation.

№	Data variable	Description	Data unit	Source of data
21.	$SRMC_{i,IRON,MP,BL,y}$	Specific foundry iron consumption for molds production	0.295 t/t	Calculated. Detailed information is provided in the section B of project design documentation.
22.	$SRMC_{i,SP,BL,y}$	Specific iron consumption in steelmaking furnaces under Baseline	0.041 t/t	Calculated in accordance with section D.1.1.4 of project design documentation. Calculation is attached in Excel file.
23.	$SRMC_{i,SP,BL,y}$	Specific scrap iron consumption in steelmaking furnaces under Baseline	0.087 t/t	Calculated in accordance with section D.1.1.4 of project design documentation. Calculation is attached in Excel file.
24.	$SRMC_{i,SP,BL,y}$	Specific scrap steel consumption in steelmaking furnaces under Baseline	1.018 t/t	Calculated in accordance with section D.1.1.4 of project design documentation. Calculation is attached in Excel file.
25.	$SRMC_{i,SP,BL,y}$	Specific limestone consumption in steelmaking furnaces under Baseline	0.005 t/t	Calculated in accordance with section D.1.1.4 of project design documentation. Calculation is attached in Excel file.
26.	$SRMC_{i,SP,BL,y}$	Specific dolomite consumption in steelmaking furnaces under Baseline	0.040 t/t	Calculated in accordance with section D.1.1.4 of project design documentation. Calculation is attached in Excel file.
27.	$SRMC_{i,SP,BL,y}$	Specific carbonaceous materials consumption in steelmaking furnaces under Baseline	0.001 t/t	Calculated in accordance with section D.1.1.4 of project design documentation. Calculation is attached in Excel file.
28.	$SRMC_{i,SP,BL,y}$	Specific lime consumption in steelmaking furnaces under Baseline	0.050 t/t	Calculated in accordance with section D.1.1.4 of project design documentation. Calculation is attached in Excel file.
29.	$SFC_{i,SP,BL,y}$	Specific natural gas consumption in steelmaking furnaces under Baseline	0.124 thous.m^3/t	Calculated in accordance with section D.1.1.4 of project design documentation. Calculation is attached in Excel file.
30.	$SFC_{i,SP,BL,y}$	Specific heavy fuel oil consumption in steelmaking furnaces under Baseline	0.053 t/t	Calculated in accordance with section D.1.1.4 of project design documentation. Calculation is attached in Excel file.

№	Data variable	Description	Data unit	Source of data
31.	$SEC_{SP,BL,y}$	Specific electric power consumption in steelmaking furnaces under Baseline	0.008 MWh/t	Calculated in accordance with section D.1.1.4 of project design documentation. Calculation is attached in Excel file.
32.	$SCAC_{SP,BL,y}$	Specific compressed air consumption in steelmaking furnaces under Baseline	0.227 thous.m^3/t	Calculated in accordance with section D.1.1.4 of project design documentation. Calculation is attached in Excel file.
33.	$SOC_{SP,BL,y}$	Specific oxygen consumption in steelmaking furnaces under Baseline	0.023 thous.m^3/t	Calculated in accordance with section D.1.1.4 of project design documentation. Calculation is attached in Excel file.

The parameters ##1-21 are defined on the stage of project determination and fixed for whole monitoring period (section D.1. of the project design documentation).

The parameters ##22-33 are determined after EAF commissioning in accordance with section D.1.1.4. of the project design documentation. The calculations including the initial data are attached in Excel file. Before EAF commissioning in July 2010 parameters ##22-33 were calculated monthly in accordance with monitoring plan based on actual data.

B.1.2. List of parameters which are continuously monitored during the crediting period

№	Data variable	Description	Data unit	Source of data
1	ID-1: $RMC_{i,SP,PJ,y}$	Carbonaceous raw material (i) consumption in steelmaking furnaces under Project	t	Consumption of limestone, dolomite, carbonaceous materials, iron, scrap iron and scrap steel. Primary archiving should be made by a shift foreman from steelmaking shop. Data source: Technical reports.
2	ID-2: $FC_{j,SP,PJ,y}$	Fuel consumption (j) in steelmaking furnaces under Project	thous.m^3 *or* t	Consumption of natural gas, heavy fuel oil, graphite electrodes. Primary archiving should be made by Instrumentation & Control Engineer. Data source: Technical reports.
3	ID-3: $P_{STEEL,SP,PJ,y}$	Steel production in steelmaking furnaces under Project	t	Primary archiving should be made by a shift foreman from steelmaking shop. Data source: Technical reports.

№	Data variable	Description	Data unit	Source of data
4	ID-4: $EC_{SP,PJ,y}$	Electric power consumption in steelmaking furnaces under Project	MWh	Primary archiving should be made by an electrical engineer on duty from Power Engineering Department. Data source: Technical reports.
5	ID-5: $CAC_{SP,PJ,y}$	Compressed air consumption in steelmaking furnaces under Project	thous.m^3	Primary archiving should be made by Instrumentation & Control Engineer. Data source: Technical reports.
6	ID-6: $OC_{SP,PJ,y}$	Oxygen consumption in steelmaking furnaces under Project	thous.m^3	Primary archiving should be made by Instrumentation & Control Engineer. Data source: Technical reports.
7	ID-7: $RMC_{i,LF,PJ,y}$	Carbonaceous raw material (i) consumption in ladle furnace under Project	t	Carbonaceous materials consumption. Primary archiving should be made by a shift foreman from steelmaking shop. Data source: Technical reports.
8	ID-8: $FC_{j,LF,PJ,y}$	Fuel consumption (j) in ladle furnace under Project	thous.m^3 *or* t	Consumption graphite electrodes. Primary archiving should be made by a shift foreman from steelmaking shop. Data source: Technical reports.
9	ID-9: $EC_{LF,PJ,y}$	Electric power consumption in ladle furnace under Project	MWh	Primary archiving should be made by an electrical engineer on duty at Power Engineering Department. Data source: Technical reports.
10	ID-10: $CAC_{LF,PJ,y}$	Compressed air consumption in ladle furnace under Project	thous.m^3	Primary archiving should be made by Instrumentation & Control Engineer. Data source: Technical reports.
11	ID-11: $OC_{LF,PJ,y}$	Oxygen consumption in ladle furnace under Project	thous.m^3	Primary archiving should be made by Instrumentation & Control Engineer. Data source: Technical reports.
12	ID-12: $FC_{j,SC,PJ,y}$	Fuel consumption (j) in continuous casting machine (CCM) under Project	thous.m^3 *or* t	Consumption of natural gas. Primary archiving should be made by Instrumentation & Control Engineer. Data source: Technical reports.
13	ID-13: $EC_{SC,PJ,y}$	Electric power consumption in continuous casting machine (CCM) under Project	MWh	Primary archiving should be made by an electrical engineer on duty from Power Engineering Department. Data source: Technical reports.

№	Data variable	Description	Data unit	Source of data
14	ID-14: $CAC_{SC,PJ,y}$	Compressed air consumption in continuous casting machine (CCM) under Project	thous.m^3	Primary archiving should be made by Instrumentation & Control Engineer. Data source: Technical reports.
15	ID-15: $OC_{SC,PJ,y}$	Oxygen consumption in continuous casting machine (CCM) under Project	thous.m^3	Primary archiving should be made by Instrumentation & Control Engineer. Data source: Technical reports.
16	ID-16: $FC_{j,RP,PJ,y}$	Fuel consumption (j) in rolling plant under Project	thous.m^3 *or* t	Consumption of natural gas.Primary archiving should be made by Instrumentation & Control Engineer. Data source: Technical reports.
17	ID-17: $EC_{RP,PJ,y}$	Electric power consumption in rolling plant under Project	MWh	Primary archiving should be made by an electrical engineer on duty from Power Engineering Department. Data source: Technical reports.
18	ID-18: $CAC_{RP,PJ,y}$	Compressed air consumption in rolling plant under Project	thous.m^3	Primary archiving should be made by Instrumentation & Control Engineer. Data source: Technical reports.
19	ID-19: $C_{LIME,SP,PJ,y}$	Lime consumption in steelmaking furnaces under Project	t	Primary archiving should be made by a shift foreman from steelmaking shop. Data source: Technical reports.
20	ID-20: $C_{LIME,LF,PJ,y}$	Lime consumption in ladle furnace under Project	t	Primary archiving should be made by a shift foreman from steelmaking shop. Data source: Technical reports.
21	ID-21: $MC_{SP,PJ,y}$	Molds consumption for steel production under Project	t	Primary archiving should be made by a shift foreman from steelmaking shop. Data source: Technical reports.
22	ID-22: $RMC_{IRON,SP,PJ,y}$	Pig iron consumption for steel production under Project	t	Primary archiving should be made by a shift foreman of steelmaking shop. Data source: Technical reports.
23	ID-23: $RMC_{IRON,MP,PJ,y}$	Pig iron consumption for molds production under Project	t	Primary archiving should be made by a shift foreman from foundry shop. Data source: Technical reports.
24	ID-24: $EC_{grid,PJ,y}$	Electric power consumption from the grid under Project	MWh	Primary archiving should be made by an electrical engineer on duty from Power Engineering Department. Data source: Technical reports.

№	Data variable	Description	Data unit	Source of data
25	ID-25: $P_{ELEC,PJ,y}$	Electric power generated by own CHP under Project	MWh	Primary archiving should be made by an electrical engineer on duty from Power Engineering Department. Data source: Technical reports.
26	ID-26: $FC_{j,EP,PJ,y}$	Fuel consumption (j) for electric power production by own CHP under Project	thous.m^3 *or* t	Consumption of natural gas and heavy fuel oil. Primary archiving should be made by Instrumentation & Control Engineer. Data source: Technical reports.
27	ID-27: $EC_{CA,PJ,y}$	Electric power consumption for compressed air production under Project	MWh	Primary archiving should be made by an electrical engineer on duty from Power Engineering Department. Data source: Technical reports.
28	ID-28: $P_{CA,PJ,y}$	Compressed air production under Project	thous.m^3	Primary archiving should be made by Instrumentation & Control Engineer. Data source: Technical reports.
29	ID-29: $EC_{OP,PJ,y}$	Electric power consumption for technical gases production under Project	MWh	Primary archiving should be made by an electrical engineer on duty from Power Engineering Department. Data source: Technical reports.
30	ID-30: $P_{OXYGEN,PJ,y}$	Oxygen production under Project	thous.m^3	Primary archiving should be made by Instrumentation & Control Engineer. Data source: Technical reports.
31	ID-31: $P_{LIME,PJ,y}$	Lime production under Project	t	Primary archiving should be made by a shift foreman from steelmaking shop. Data source: Technical reports.
32	ID-32: $RMC_{i,LP,PJ,y}$	Carbonaceous raw materials (i) consumption for lime production under Project	t	Consumption of limestone. Primary archiving should be made by a shift foreman from steelmaking shop. Data source: Technical reports.
33	ID-33: $FC_{j,LP,PJ,y}$	Fuel consumption (j) for lime production under Project	thous.m^3 *or* t	Consumption of natural gas. Primary archiving should be made by Instrumentation & Control Engineer. Data source: Technical reports.
34	ID-34: $EC_{LP,PJ,y}$	Electric power consumption for lime production under Project	MWh	Primary archiving should be made by an electrical engineer on duty from Power Engineering Department. Data source: Technical reports.

№	Data variable	Description	Data unit	Source of data
35	ID-35: $CAC_{LP,PJ,y}$	Compressed air consumption for lime production under Project	thous.m^3	Primary archiving should be made by Instrumentation & Control Engineer. Data source: Technical reports.
36	ID-36: $P_{MOULD,PJ,y}$	Molds production under Project	t	Primary archiving should be made by a shift foreman from foundry shop. Data source: Technical reports.
37	ID-37: $RMC_{i,MP,PJ,y}$	Carbonaceous raw materials (i) consumption for molds production under Project	t	Consumption of limestone, iron, scrap iron and steel. Primary archiving should be made by a shift foreman from foundry shop. Data source: Technical reports.
38	ID-38: $FC_{j,MP,PJ,y}$	Fuel consumption (j) for molds production under Project	thous.m^3 *or* t	Consumption of natural gas and coke. Primary archiving should be made by Instrumentation & Control Engineer. Data source: Technical reports.
39	ID-39: $EC_{MP,PJ,y}$	Electric power consumption for molds production under Project	MWh	Primary archiving should be made by an electrical engineer on duty from Power Engineering Department. Data source: Technical reports.
40	ID-40: $CAC_{MP,PJ,y}$	Compressed air consumption for molds production under Project	thous.m^3	Primary archiving should be made by Instrumentation & Control Engineer. Data source: Technical reports.
41	ID-41: $RMC_{i,SP,BL,y}$	Carbonaceous raw material (i) consumption in steelmaking furnaces under Baseline	t	Consumption of limestone, dolomite, carbonaceous materials, iron, scrap iron and scrap steel. Data source: calculated in accordance with monitoring plan.
42	ID-42: $FC_{j,SP,BL,y}$	Fuel consumption (j) in steelmaking furnaces under Baseline	thous.m^3 *or* t	Consumption of natural gas, heavy fuel oil. Data source: calculated in accordance with monitoring plan.
43	ID-43: $P_{STEEL,SP,BL,y}$	steel production in steelmaking furnaces under Baseline	t	Data source: calculated in accordance with monitoring plan.
44	ID-44: $EC_{SP,BL,y}$	Electric power consumption in steelmaking furnaces under Baseline	MWh	Data source: calculated in accordance with monitoring plan.
45	ID-45: $CAC_{SP,BL,y}$	Compressed air consumption in steelmaking furnaces under Baseline	thous.m^3	Data source: calculated in accordance with monitoring plan.

№	Data variable	Description	Data unit	Source of data
46	ID-46: $OC_{SP,BL,y}$	Oxygen consumption in steelmaking furnaces under Baseline	thous.m^3	Data source: calculated in accordance with monitoring plan.
47	ID-47: $RMC_{i,LF,BL,y}$	Carbonaceous raw material (i) consumption in ladle furnace under Baseline	t	Carbonaceous materials consumption. Data source: calculated in accordance with monitoring plan.
48	ID-48: $FC_{j,LF,BL,y}$	Fuel consumption (j) in ladle furnace under Baseline	t	Consumption graphite electrodes. Data source: calculated in accordance with monitoring plan.
49	ID-49: $EC_{LF,BL,y}$	Electric power consumption in ladle furnace under Baseline	MWh	Data source: calculated in accordance with monitoring plan.
50	ID-50: $CAC_{LF,BL,y}$	Compressed air consumption in ladle furnace under Baseline	thous.m^3	Data source: calculated in accordance with monitoring plan.
51	ID-51: $OC_{LF,BL,y}$	Oxygen consumption in ladle furnace under Baseline	thous.m^3	Data source: calculated in accordance with monitoring plan.
52	ID-52: $FC_{j,RP,BL,y}$	Fuel consumption (j) in rolling plant under Baseline	thous.m^3	Consumption of natural gas. Data source: calculated in accordance with monitoring plan.
53	ID-53: $EC_{RP,BL,y}$	Electric power consumption in rolling plant under Baseline	MWh	Data source: calculated in accordance with monitoring plan.
54	ID-54: $CAC_{RP,BL,y}$	Compressed air consumption in rolling plant under Baseline	thous.m^3	Data source: calculated in accordance with monitoring plan.
55	ID-55: $C_{LIME,SP,BL,y}$	Lime consumption in steelmaking furnaces under Baseline	t	Data source: calculated in accordance with monitoring plan.
56	ID-56: $C_{LIME,LF,BL,y}$	Lime consumption in ladle furnace under Baseline	t	Data source: calculated in accordance with monitoring plan.
57	ID-57: $P_{STEEL,LF,BL,y}$	Steel processed in ladle furnace under Baseline	t	Data source: calculated in accordance with monitoring plan.
58	ID-58: $C_{STEEL,BILLET,BL,y}$	Steel billets consumption for rolled metal production in rolling plant under Baseline	t	Data source: calculated in accordance with monitoring plan.
59	ID-59: $P_{STEEL,RP,BL,y}$	Rolled metal production in rolling plant under Baseline	t	Data source: calculated in accordance with monitoring plan.

№	Data variable	Description	Data unit	Source of data
60	ID-60: $P_{STEEL,OUT,BL,y}$	Steel production outside JSC AMW under Baseline	t	Data source: calculated in accordance with monitoring plan.
61	ID-61: $P_{STEEL,LF,PJ,y}$	Steel processed in ladle furnace under Project	t	Primary archiving should be made by a shift foreman from steelmaking shop. Data source: Technical reports.
62	ID-62: $C_{STEEL,BILLET,PJ,y}$	Steel billets consumption for rolled metal production in rolling plant under Project	t	Primary archiving should be made by a production clerk. Data source: Technical reports.
63	ID-63: $P_{STEEL,RP,PJ,y}$	Rolled metal production in rolling plant under Project	t	Primary archiving should be made by a production clerk. Data source: Technical reports.

B.1.3. Boundary of GHGs emissions monitoring

The boundary of GHG emissions monitoring under project and baseline scenarios in 2008-2010 are shown in the following figures B.1-1., B.1-2., B.1-3.

Fig. B.1-1. Boundary of baseline GHG emissions.

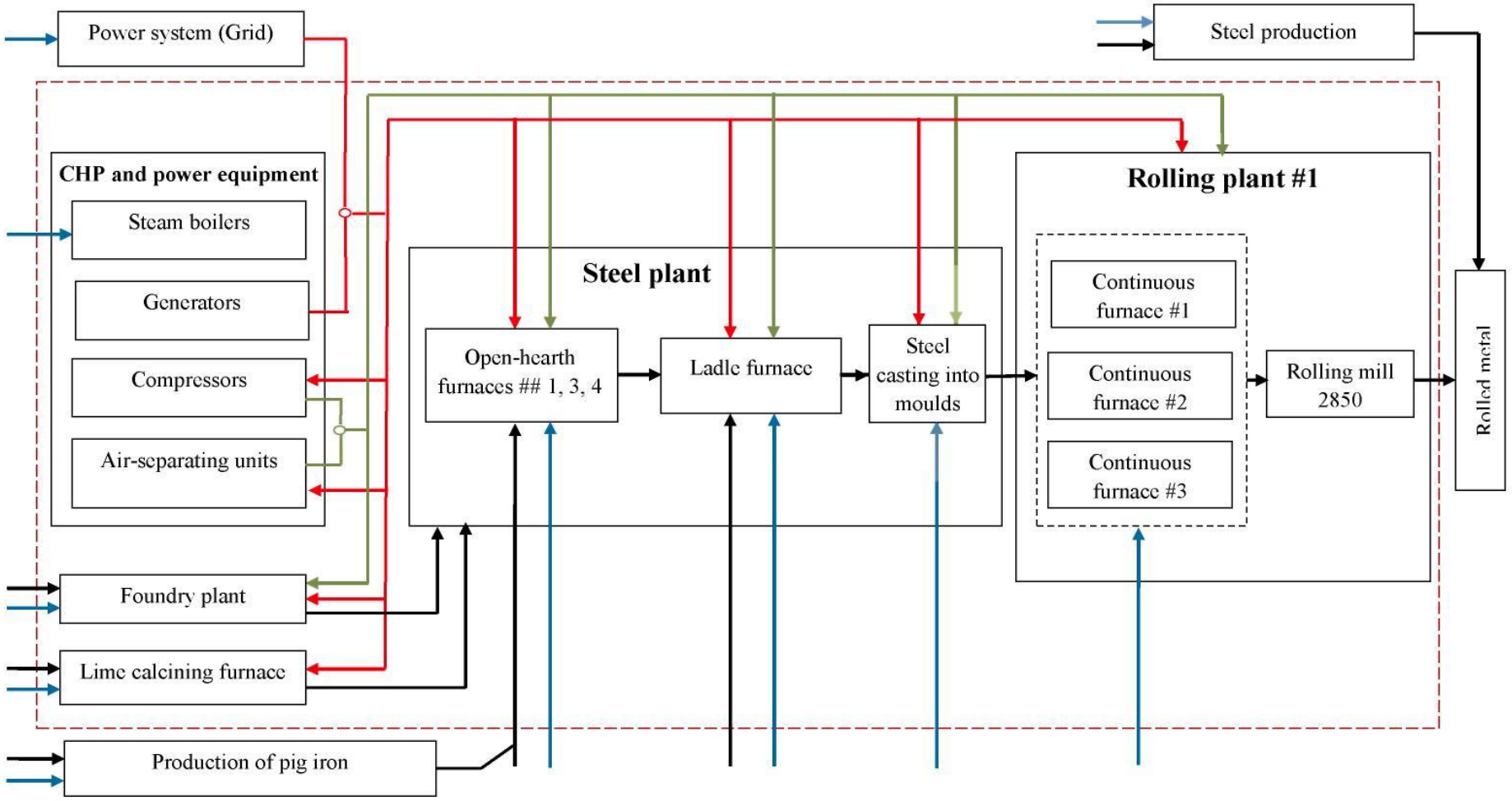


Fig. B.1-2. Boundary of project GHG emissions in January 2008 – June 2010 (till EAF commissioning).

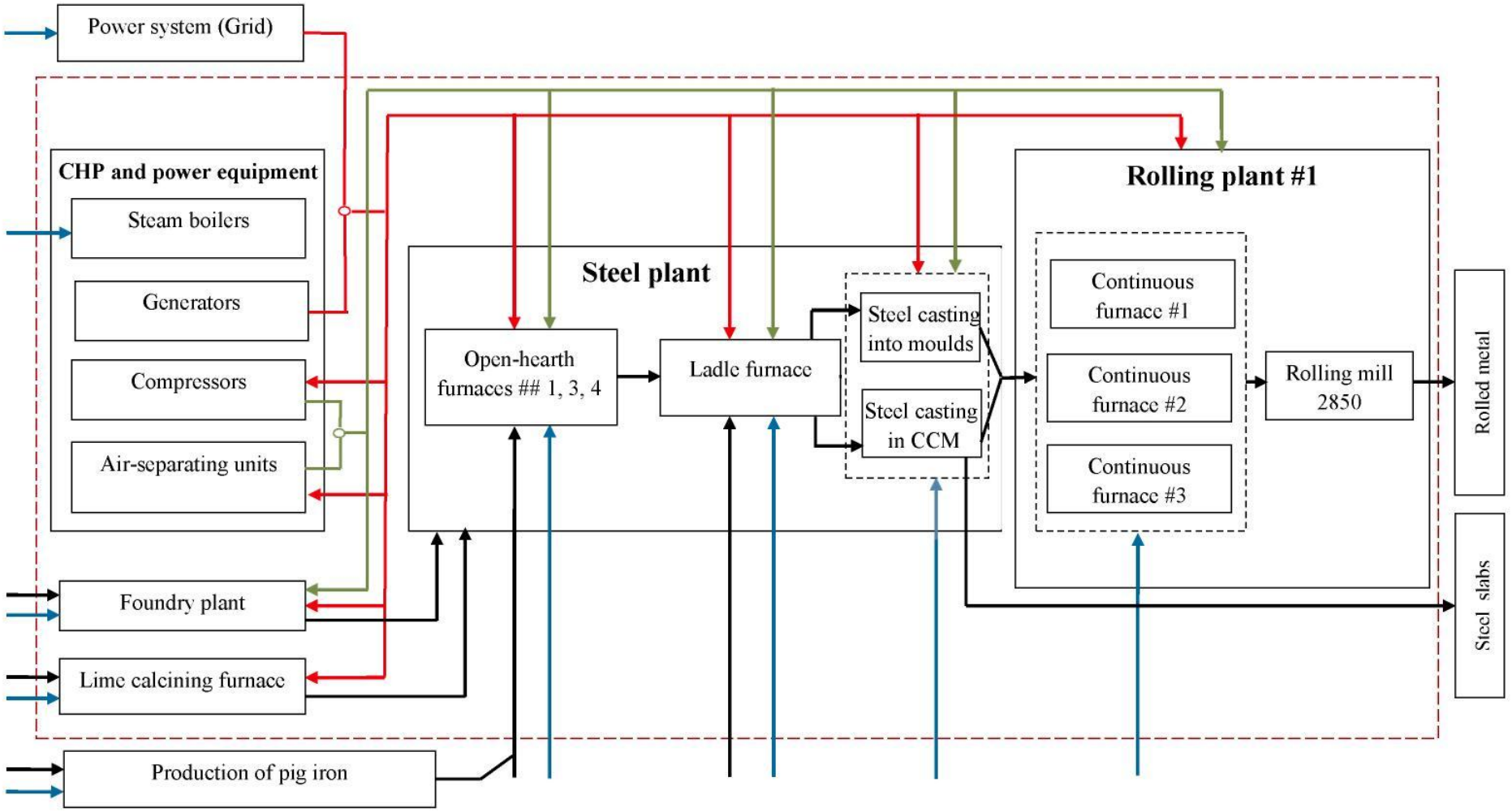
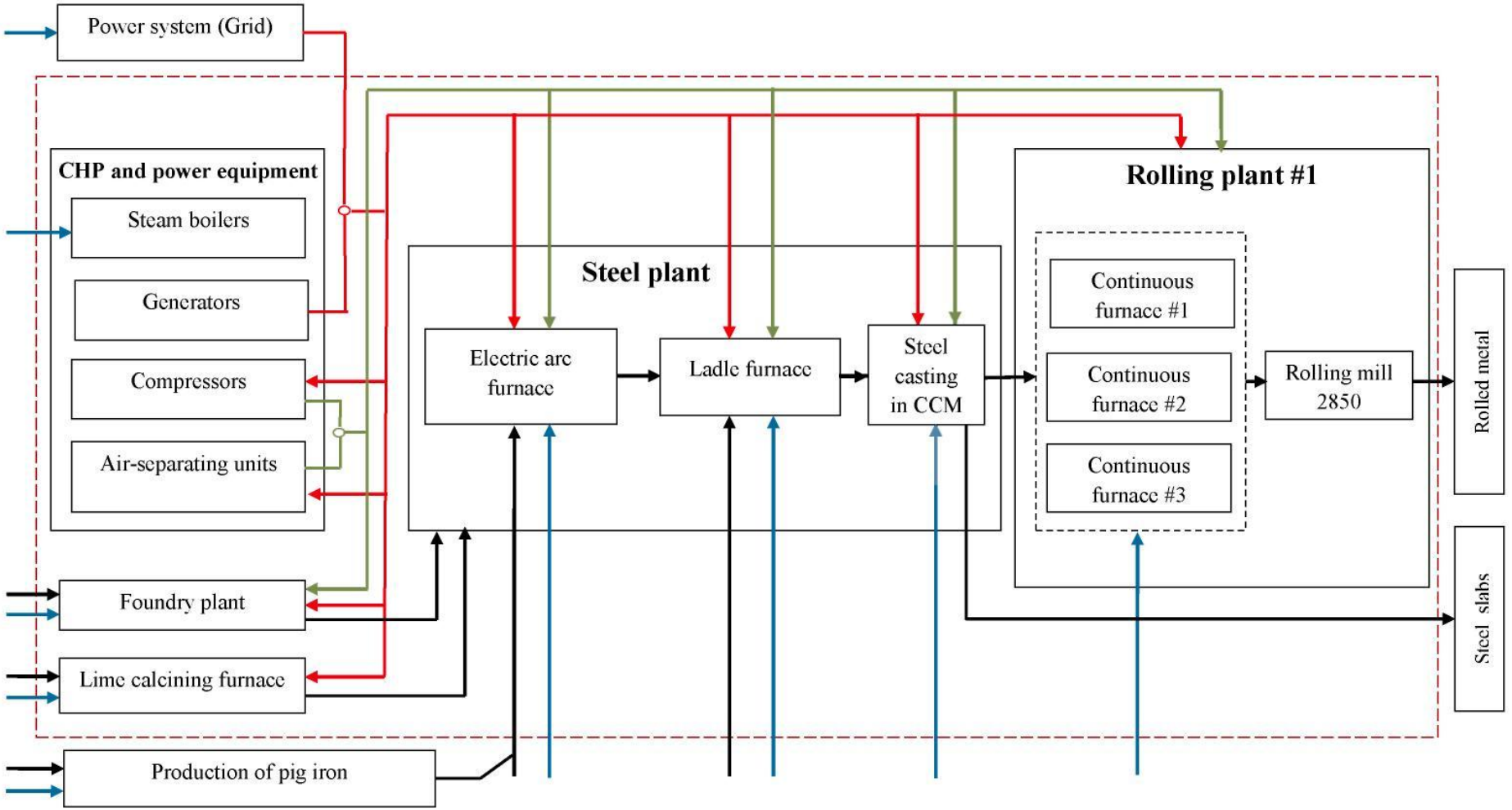


Fig. B.1-3. Boundary of project GHG emissions since July 2010 (after EAF commissioning).



Legend to the figures B.1-1, B.1-2, B.1-3.

	Electric power
	Fuel resources (natural gas, fuel oil)
	Compressed air / process gases (oxygen, nitrogen, argon)
	Boundary of Ashinskiy Metallurgical Works
	Product flows – raw materials/products/auxiliary materials

B.2. Procedures and scheme of monitoring

Procedures of collection, delivery, processing and storage of the data necessary for GHG reductions monitoring according to the monitoring plan are determined by the elaborated Standard of JSC "AMW": Industry standard #058-51-2009 "Monitoring of GHG Emission Reductions", approved by Technical director on 18.11.2009. The Industry standard #058-51-2009 covers the period of monitoring since 01.01.2010. The monitoring of GHG emission reductions for period 01.01.2008-31.12.2009 is provided based on technical reports of steel works prepared by internal procedures (regulations, standards) of JSC "AMW". JSC "AMW" has the certificate of compliance to quality management system (QMS) according to the GOST R ISO 9001-2008 (ISO 9001:2008).

In monitoring of GHGs emission reductions participate following departments of JSC "AMW":

- Planning and economic department;
- Chief power engineer department;
- Steel plant;
- Rolling plant №1;
- Foundry plant;
- Department of industrial control.

In monitoring period 2008-2009 the collection of the initial data for monitoring and emission reductions calculation is provided by JI Consultant based on technical reports of JSC "AMW". Principal scheme of monitoring data collection, delivery and processing for period 2008-2009 is shown on the fig. B.2-1.

Since begin 2010 the monitoring procedures are determined by Industry standard #058-51-2009 "Monitoring of GHG Emission Reductions" that includes the following procedures:

- collection, processing and storage of initial data for monitoring;
- compilation, delivery and storage of monitoring reporting forms;
- calculation of emission reductions;
- preparation and approval of the monitoring report;
- verification of emission reductions;
- QA/QC procedures;
- allocation of responsibility.

Principal scheme of monitoring data collection, delivery and processing in 2010 is shown on the fig. B.2-2.

Departments of JSC "AMW" included in the monitoring of GHGs emissions, responsible specialists and their functions are shown in table B.2-1.

Fig. B.2-1. Principal scheme of monitoring data collection, delivery and processing for period 2008-2009.

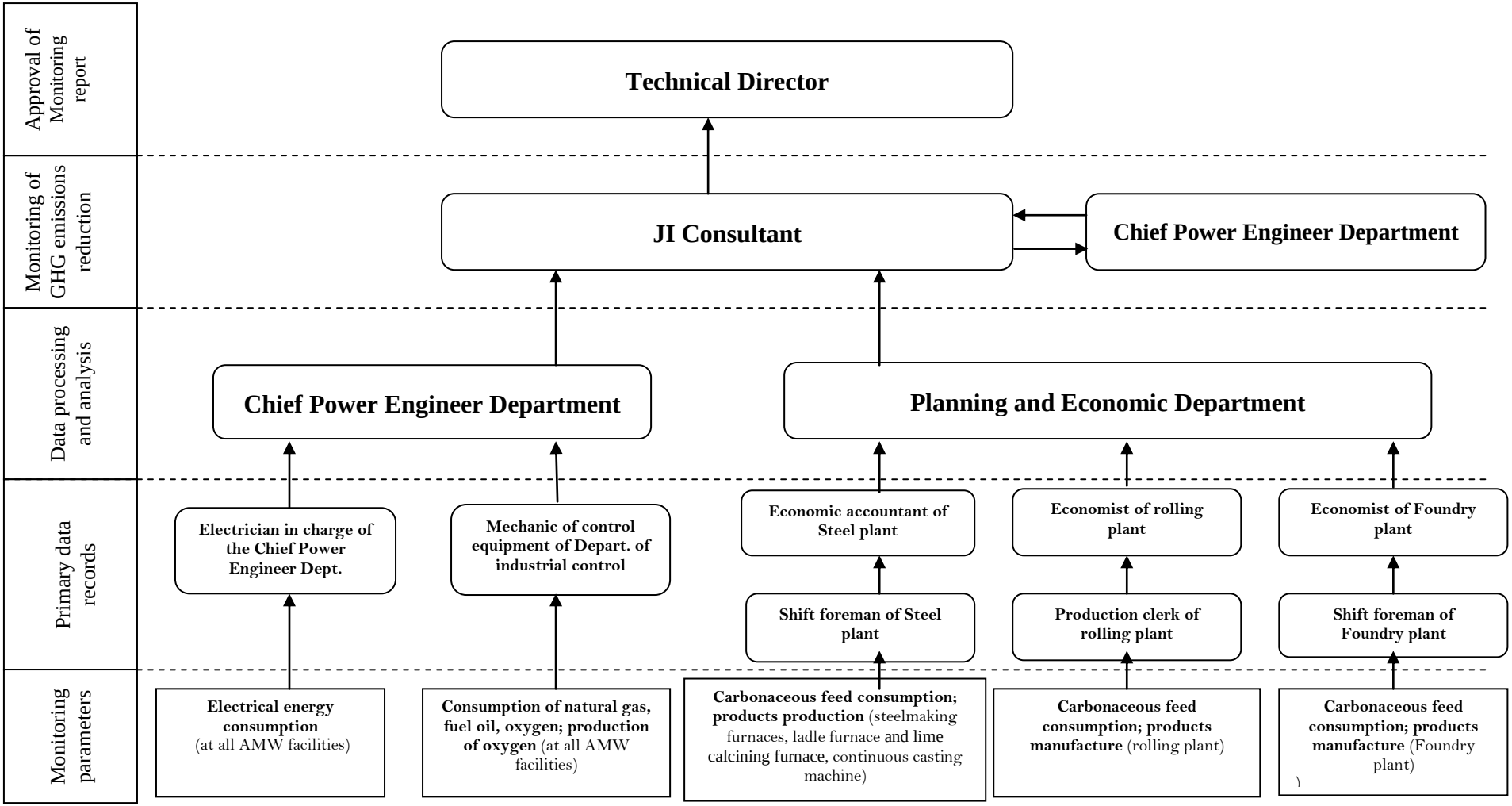


Fig. B.2-2. Principal scheme of monitoring data collection, delivery and processing since 2010.

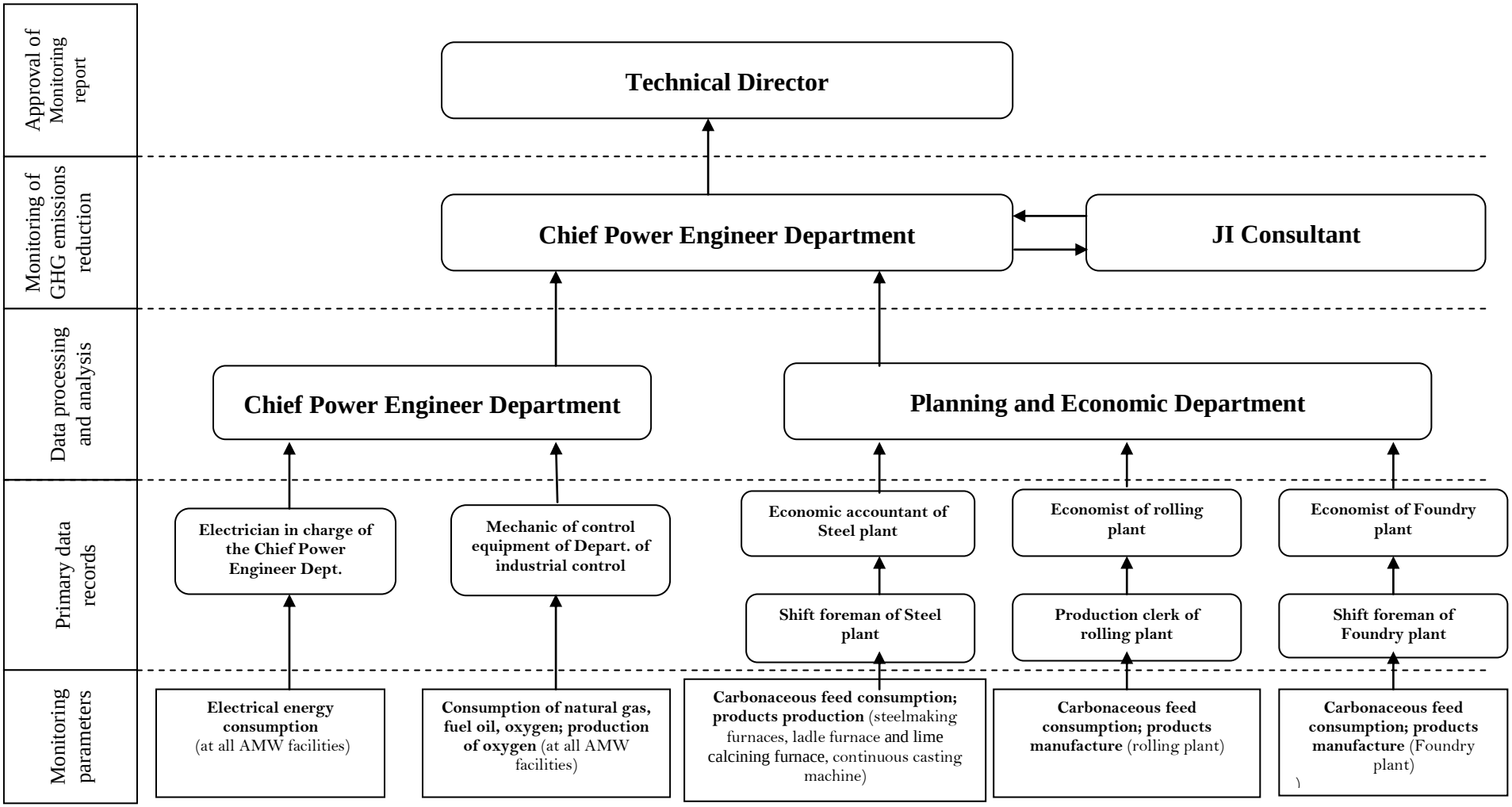


Table B.2-1. Description of the scheme of monitoring data collection, delivery and processing.

#	Department	Responsible persons	Function for monitoring	Frequency
1.	Department of industrial control	Mechanic of control equipment	Primary data collection of natural gas, heavy fuel oil, oxygen, compressed air consumption in all facilities. Primary data collection of oxygen, compressed air production. Processing of primary data, recoding the data in log books, data delivery to engineer of Chief power engineer department.	Daily
2.	Chief power engineer department	Electrician in charge	Primary data collection of electricity consumption in all facilities, electricity generation in CHP, electricity supply from the grid. Processing of primary data, recoding the data in log books, data delivery to engineer of Chief power engineer department.	Daily
		Engineer	Data collection of fuel consumption, energy resources production and consumption in all facilities. Preparation of technical reports of fuel consumption, energy resources production and consumption. Compilation since 2010 reporting forms ##6-12 according to the STP 058-51-2009 about fuel consumption, energy resources production and consumption.	Daily / monthly

#	Department	Responsible persons	Function for monitoring	Frequency
		Chief power engineer	Approval of technical reports about fuel consumption, energy resources production and consumption. Confirmation of initial data about fuel consumption, energy resources production and consumption used for monitoring of GHG emission reductions in 2008-2009. Approval since 2010 reporting forms ##6-12 according to the STP 058-51-2009 about fuel consumption, energy resources production and consumption.	Monthly / yearly
3.	Steel plant	Shift foreman	Primary data collection of carbonaceous feed consumption and products production in steelmaking furnaces, ladle furnace, lime calcining furnace, continuous casting machine. Data recording in log books and melting certificates. Data delivery to economic accountant of steel plant.	Daily
		Economic accountant	Data collection of steel plant operation. Technical report of steel plant preparation. Technical report delivery to Planning and economic department.	Daily / monthly
4.	Rolling plant №1	Production clerk	Primary data collection of steel billets consumption and rolled metal production in rolling plant. Data recording in reports of production. Reports of production delivery to economist of rolling plant.	Daily
		Economist	Data collection of rolling plant operation. Technical report of rolling plant preparation. Technical report delivery to Planning and economic department.	Daily / monthly

#	Department	Responsible persons	Function for monitoring	Frequency
5.	Foundry plant	Shift foreman	Primary data collection of carbonaceous feed consumption and products production in foundry plant. Data recording in melting reports. Data delivery to economist of foundry plant.	Daily
		Economist	Data collection of rolling foundry operation. Technical report of foundry plant preparation. Technical report delivery to Planning and economic department.	Daily / monthly
6.	Planning and economic department	Economist	Collection and control of technical reports of steel, rolling and foundry plants. Compilation since 2010 reporting forms ##1-5 according to the STP 058-51-2009 about carbonaceous feed consumption and products production in steel, rolling and foundry plants.	Monthly
		Head	Approval of technical reports of steel, rolling and foundry plants. Confirmation of initial data about carbonaceous feed consumption and products production in steel, rolling and foundry plants used for monitoring of GHG emission reductions in 2008-2009. Approval since 2010 reporting forms ##1-5 according to the STP 058-51-2009 about carbonaceous feed consumption and products production in steel, rolling and foundry plants.	Monthly / yearly

#	Department	Responsible persons	Function for monitoring	Frequency
7.	JI consultant		Collection of initial data for monitoring of GHG emission reductions in 2008-2009 based on monthly technical reports approved by Head of planning and economic department and Chief power engineer. Confirmation of initial data for monitoring of GHG emission reductions in 2008-2009 by Planning and economic department and Chief power engineer department. Collection since 2010 reporting forms ##1-12 according to the STP 058-51-2009 for GHG emission reductions monitoring. Calculation of emission reductions and monitoring report preparation.	Monthly / yearly
8.	Technical Director		Approval of the monitoring report.	Yearly

B.3. Meters included in the monitoring plan

The information about meters used for measurement of parameters which are continuously monitored during the crediting period are provided in the table B.3-1.

Table B.3-1. Meters used for GHG emission reductions monitoring.

№	Parameter	Type of meters	Number of meters	Function of meters	Verification / Calibration (frequency)	Date					Accuracy
						Last	2008	2009	2010	Next	
Steelmaking furnaces											
1.	Iron, scrap iron, steel scrap, lime, moulds consumption	Scale car 150VC	1433	Balancing	Calibration (once a year)	16.05.07	16.05.08	16.05.09	16.05.10	16.05.11	Middle
2.	Carbonaceous materials consumption	Crane balance VKM-5	355	Balancing	Verification (once a year)	21.02.07	25.03.08	25.11.09	1 quart. 2011	1 quart. 2012	Middle
3.	Limestone, dolomite consumption	Scale car M8300A	315	Balancing	Verification (once a year)	25.05.07	25.05.08	25.05.09	26.05.10	26.05.11	Middle
4.	Natural gas consumption	Metran 43, Disk 250	4195, 36839	Flowmeter	Calibration (once every 2 years)	27.04.07	-	23.09.09	-	23.09.11	± 1,0%
5.	Heavy fuel oil consumption	UZS, Disk-250	458, 28513 460, 63713 457, 76263	Flowmeter	Calibration (once every 2 years)	12.02.06 14.09.07 14.06.07	24.05.08 - -	- 23.09.09 23.09.09	31.05.10 - -	31.05.12 23.09.11 23.09.11	± 1,0%
6.	Graphite electrodes consumption	Crane balance VK-10-3	18670	Balancing	Calibration (once a year)	25.11.07	25.11.08	25.11.09	02.02.11	02.02.12	Middle
7.	Electricity consumption	SA3U-I670M	1956	Electricity meter	Calibration (once every 16 years)	2 quart. 2006	-	-	-	2 quart. 2022	± 2,0%

№	Parameter	Type of meters	Number of meters	Function of meters	Verification / Calibration (frequency)	Date					Accuracy
						Last	2008	2009	2010	Next	
8.1	Compressed air consumption	DM-3583M, KSD-3	292311, 61049	Flowmeter	Calibration (once every 2 years)	3 quart. 2007	Replaced by YOKOGAWA EJA110A	Reserved in 3 quart. 2009	-	-	± 2,5%
8.2	Compressed air consumption	YOKOGAWA EJA110A	27E537970	Flowmeter	Calibration (once every 3 years)	Introduced in 2008	2 quart. 2008	-	-	2 quart. 2011	± 0,1%
9.	Oxygen consumption	DM-3583M, KSD-3	23034, 352861	Flowmeter	Calibration (once every 2 years)	03.06.06	14.04.08	-	14.04.10	14.04.12	± 2,5%
Ladle furnace											
10.	Steel processed in ladle furnace	Crane balance VKT “KOVSH”	101	Balancing	Calibration (once a year)	16.08.07	16.08.08	16.08.09	16.08.10	16.08.11	± 1,0%
11.	Carbonaceous materials consumption	Hopper scale ASU TP-500	1	Balancing	Calibration (once a year)	16.05.07	16.05.08	16.05.09	16.05.10	16.05.11	± 1,0%
12.	Lime consumption	Hopper scale ASU TP-500	2	Balancing	Calibration (once a year)	16.05.07	16.05.08	16.05.09	17.12.10	17.12.11	± 1,0%
13.	Graphite electrodes consumption	Crane balance VK-10-3	18670	Balancing	Calibration (once a year)	25.11.07	25.11.08	25.11.09	02.02.10	02.02.11	Middle
14.1	Electricity consumption	SET4-1	000734	Electricity meter	Calibration (once every 12 years)	2 quart. 2002	-	-	Replaced by СЭТ-4ТМ.03М.01	-	± 1,0%
14.2	Electricity consumption	SET-4TM.03M.01	805100029	Electricity meter	Calibration (once every 12 years)	Introduced in 2010	Introduced in 2010	Introduced in 2010	3 quart. 2010	3 quart. 2022	± 0,5%
15.	Compressed air consumption	Metran-335-5000	1128	Flowmeter	Calibration (once every 4 years)	23.07.07	-	-	-	23.07.11	± 1,0%

№	Parameter	Type of meters	Number of meters	Function of meters	Verification / Calibration (frequency)	Date					Accuracy
						Last	2008	2009	2010	Next	
Continuous casting machine											
16.	Natural gas consumption	SG16MT 400-40-S-2	6114542	Flowmeter	Calibration (once every 5 years)	11.01.07	-	-	-	11.01.12	± 1,0%
17.	Electricity consumption	ST3r02-10	176565, 176563	Electricity meter	Calibration (once every 8 years)	4 quart. 2005	-	-	-	4 quart. 2013	± 1,0%
18.	Compressed air consumption	Metran-335-5000	1128	Flowmeter	Calibration (once every 4 years)	23.07.07	-	-	-	23.07.11	± 1,0%
19.	Oxygen consumption	Promass 40 E	9B092202000	Flowmeter	Calibration (once every 4 years)	19.08.07	-	-	-	19.08.11	± 1%
Lime calcining furnace											
20.	Lime production	Scale car 150VC	1433	Balancing	Calibration (once a year)	16.05.07	16.05.08	16.05.09	16.05.10	16.05.11	Middle
21.	Limestone consumption	Scale car M8300A	315	Balancing	Verification (once a year)	25.05.07	25.05.08	25.05.09	25.05.10	25.05.11	Middle
22.	Natural gas consumption	SG16M-200	30800	Flowmeter	Calibration (once every 3 years)	16.04.07	-	-	16.04.10	16.04.13	± 1,0%
23.	Electricity consumption	SA3U-I670M	694362	Electricity meter	Calibration (once every 16 years)	4 quart. 2006	-	-	-	4 quart. 2022	± 2,0%
Rolling plant №1											
24.	Rolled metal production	Balance "Granit" VSDP 30.60.15	817	Balancing	Verification (once a year)	4 quart. 2007	16.12.08	25.11.09	1 quart. 2011	1 quart. 2012	Middle
25.1	Natural gas consumption	Metran43DD BP «Karat-22» Disk-250	265 088 49094	Flowmeter	Calibration (once every 2 years)	20.02.06	01.04.08	Replaced by Метран 150, Диск-250	-	-	± 2,5%

№	Parameter	Type of meters	Number of meters	Function of meters	Verification / Calibration (frequency)	Date					Accuracy
						Last	2008	2009	2010	Next	
25.2	Natural gas consumption	Metran 150, Disk-250	87979	Flowmeter	Calibration (once every 2 years)	Introduced in 2010	Introduced in 2010	Introduced in 2010	08.09.10	08.09.12	± 1,0%
26.	Electricity consumption	SA3U-I670M	062937, 034481, 1576, 62051, 228251, 703550	Electricity meter	Calibration (once every 16 years)	4 quart. 2006	-	-	-	4 quart. 2022	± 2,0%
27.1	Compressed air consumption	DM-3583M, KSD-3	31336, 343877	Flowmeter	Calibration (once every 2 years)	18.12.06	Replaced by YOKOGAWA EJA110A	-	-	-	± 2,5%
27.2	Compressed air consumption	YOKOGAWA EJA110A	27E537984	Flowmeter	Calibration (once every 3 years)	Introduced in 2008	28.05.08	-	-	28.05.11	± 0,1%
Foundry plant											
28.	Moulds production; coke, iron, iron scrap, steel scrap, limestone consumption.	Crane balance VKM-10	532	Balancing	Verification (once a year)	21.02.07	25.03.08	25.11.09	1 quart. 2011	1 quart. 2011	Middle
29.	Electricity consumption	SE683T	18508	Electricity meter	Calibration (once every 16 years)	2 quart. 2006	-	-	-	2 quart. 2022	± 2,0%
30.1	Compressed air consumption	DM-3583M, KSD-3	20335, 292314	Flowmeter	Calibration (once every 2 years)	19.12.06	Replaced by YOKOGAWA EJA110A	-	-	-	± 2,5%

№	Parameter	Type of meters	Number of meters	Function of meters	Verification / Calibration (frequency)	Date					Accuracy
						Last	2008	2009	2010	Next	
30.2	Compressed air consumption	YOKOGAWA EJA110A	27E537971	Flowmeter	Calibration (once every 3 years)	Introduced 2008	26.05.08	-	-	26.05.11	± 0,1%
CHP and power equipment											
31	Electricity generation in CHP	SET-4TM.03M	0812091124, 0804090037, 0812090679	Electricity meter	Calibration (once every 12 years)	4 quart. 2006	-	-	-	4 quart. 2018	± 0,5%
32	Electricity consumption from the grid	SET-4TM.03M, SE6805V, SE6811	0812090446, 0812090358, 0812090226, 0812090248, 1D150631, 0314525, 17826, 3D058361	Electricity meter	Calibration (once every 12 years)	4 quart. 2006	-	-	-	4 quart. 2018	± 0,5% ± 1,0%
33.	Natural gas consumption for electricity generation	Sapfir22DD, Disk-250	19867, 41773, 18920, 32494	Flowmeter	Calibration (once every 2 years)	03.07.07 2 quart. 2007 22.05.07	-	28.05.09 2 quart. 2009 22.04.09	-	28.05.11 2 quart. 2011 22.04.11	± 1,0%
34.	Heavy fuel oil consumption for electricity generation	Sapfir22DD, Disk-250	19645, 32497, 12469, 32505	Flowmeter	Calibration (once every 2 years)	3.07.07 4 quart. 2007 23.05.07	-	22.03.09 2 quart. 2009 22.04.09	-	22.03.11 2 quart. 2011 22.04.11	± 1,0%
35.	Steam production in CHP	Sapfir22DD, Disk-250	51545, 100918, 18560, 36841	Flowmeter	Calibration (once every 2 years)	4 quart. 2007 2 quart. 2007	- 3 quart. 2008	2 quart. 2009 -	- 3 quart. 2010	2 quart. 2011 3 quart. 2012	± 1,0%
36.	Steam consumption for electricity generation	Metran-22DD-2440	26261, 26263	Flowmeter	Calibration (once every 2 years)	4 quart. 2006	4 quart. 2008	-	4 quart. 2010	4 quart. 2012	± 2,0%

№	Parameter	Type of meters	Number of meters	Function of meters	Verification / Calibration (frequency)	Date					Accuracy
						Last	2008	2009	2010	Next	
37	Electricity consumption for compressed air production	СЭТ-4ТМ.03М	805090956	Electricity meter	Calibration (once every 12 years)	4 quart. 2006	-	-	-	4 quart. 2018	± 0,5%
38.	Electricity consumption for technical gases production	SET-4TM.03M	0807091033, 0807091848	Electricity meter	Calibration (once every 12 years)	4 quart. 2006	-	-	-	4 quart. 2018	± 0,5%
39.1	Compressed air production	DM-3583M, KSD-3	49005, 199756 1970, 310795 12364, 352879	Flowmeter	Calibration (once every 2 years)	19.12.06 23.06.06 25.04.06	Replaced by YOKOGAWA EJA110A	-	-	-	± 2,5%
39.2	Compressed air production	YOKOGAWA EJA110A	27E537980 27E537969 27E537988	Flowmeter	Calibration (once every 3 years)	Introduced in 2008	28.05.08 27.05.08 28.05.08	-	-	28.05.11 27.05.11 28.05.11	± 0,1%
40.1	Oxygen production	DM-3583M, KSD-3	23034, 352861 343914, 211224	Flowmeter	Calibration (once every 2 years)	03.06.06 07.04.06	18.04.08 18.04.08	-	14.04.10 14.04.10	14.04.12 14.04.12	± 2,5%
40.2	Oxygen production	Prowirl 73F2H	8002415	Flowmeter	Calibration (once every 4 years)	14.04.06	-	-	08.04.10	08.04.14	± 1,0%

The procedures of meters calibration and verification are determined by Manual of metrology service quality JSC "AMW". Department of industrial control JSC "AMW" is responsible for organization of meters calibration and verification. Calibration of meters is provided by Calibration laboratory of Department of industrial control. Verification of meters is provided by Centers of standardization and metrology.

B.4. Monitoring of project's impact on the environment

The environmental impacts' monitoring includes the quantitative definition of the manufacturing activity impacts on the environment for the current period. The environmental monitoring includes recording the polluting agents' emissions into the atmosphere, manufacturing sewage release, formation and allocation of the manufacturing wastes.

The monitoring of the environmental impact will be carried out by the Environment Protection Department of JSC "Ashinskiy Metallurgical Works" in compliance with current environmental regulations and internal procedures:

- Federal Low dated on 10.01.2002 #7-FL (red. of 27.12.2009) "About Environment Protection" (approved on 20.12.2001);
- Federal Low dated on 04.05.1999 # 96-FL (red. of 27.12.2009) "About Atmospheric Air Protection" (approved on 02.04.1999);
- Federal Low dated on 24.06.1998 # 89-FL (red. of 30.12.2008) "About Wastes of Production and Consumption" (approved on 22.05.1998);
- Standard JSC "AMW" 049-67-2006 "Environmental Management System. Management of environmental aspects";
- Standard JSC "AMW" 052-13-2008 "Quality management system. Control of monitoring and measurement";
- Standard JSC "AMW" 025-67-2009 "Environmental Management System. Environmental planning";
- Standard JSC "AMW" 043-52-2005 "Environmental Management System. Monitoring Pollution";
- Standard JSC "AMW" 046-67-2009 "Environmental Management System. Monitoring and measurement of emissions and discharges";
- Standard JSC "AMW" 032-67-2009 "Environmental Management System. Waste Management".

The results of monitoring of main pollutant emissions in 2008-2010 are provided in the table B.4-1. The volume of air pollutant emissions does not exceed in monitoring period the established standards for emissions.[2]

[2] Record of air protection at JSC "AMW" in 2008-2010. Form #2-tp (air).

Table B.4-1. Results of air pollutant emissions monitoring in JSC “AMW” in 2008-2010, t/year.

№	Pollutant	2008	2009	2010
1.	NO_x	584.371	650.673	926.661
2.	SO_2	38.756	34.550	18.080
3.	CO	1061.306	684.734	764.980
4.	Dust	425.125	587.497	1,130.719
5.	Total	2,109.558	1,957.454	2,840.440

According to the results of the environmental impact assessment of the project, it was determined that if the project requirements are met, the results will be as follows:

- impact of the project implementation on the environment shall not lead to irreversible changes in the natural environment,
- project implementation will not contribute to the decline of human health,
- project implementation is not related to the output of environmentally dangerous products,
- project shall not significantly affect the environmental situation in the project’s neighboring areas.

The assessment of the project environmental impact has been provided in accordance with the requirements of the environmental regulations of Russian Federation and is included in the documentation:

- Environmental impact assessment. JSC “Ashinskiy Metallurgical Works”. Open-hearth plant. Reconstruction. Continuous casting plant. II launch complex. Working documentation, volume 3, Ч-05201-ОВОС. – JSC “Chelyabgipromez”, 2007.
- Events on Environmental Protection. JSC “Ashinskiy Metallurgical Works”. Steel plant reconstruction. III launch complex. Working documentation, volume 7, 08-2305-ООС. – JSC “UralNIIAS”, 2009.

The project of JSC “AMW” has the positive conclusion by the State Environmental Examination that confirms that the project implementation is in compliance with state regulations:

- Examination conclusion FGU “GLAVGOSEKSPERTIZA” # 812-07/ГГЭ-4882/02 dated on 06.11.2007 on working documentation JSC “Ashinskiy Metallurgical Works”. Open-hearth plant. Reconstruction. Continuous casting plant. II launch complex.
- Examination conclusion FGU “GLAVGOSEKSPERTIZA” #206-10/ЕГЭ-0858/03 dated on 09.07.2010 on project documentation “Steel plant reconstruction of JSC “Ashinskiy Metallurgical Works”. III launch complex”.

JSC “AMW” has necessary permissions in area of environmental impact of the project activity:

- Permission # Ч-2066 for air pollutant emissions for a period 15.09.2009 – 15.09.2010, given by Federal Service for Ecological, Technical and Atomic Supervision on 06.10.2009.

- Permission # Ч-376 for wastewater for a period 22.12.2009 – 22.12.2014, given by Federal Service for Ecological, Technical and Atomic Supervision on 21.01.2009.
- Permission # Ч-8324 for waste generation and they placement for a period 17.07.2009 – 10.06.2014, given by Federal Service for Ecological, Technical and Atomic Supervision on 17.07.2009.

B.5. Storage of monitoring data

All necessary information for monitoring of GHGs emission reductions are stored in paper and electronic files and will be saved till the crediting period and for two years after the last operation with ERUs from the project. The procedures of monitoring data archiving and responsible person are determined by Standard of JSC "AMW" #058-51-2009 "Monitoring of GHG Emission Reductions", approved by Technical director on 18.11.2009, and other internal documents.

SECTION C. QUALITY CONTROL (QC) AND QUALITY ASSURANCE (QA)

C.1. QA/QC procedures

Quality control of monitoring of GHGs emission reductions is a part of system of regular measures in order to make data more complete and right and to avoid mistakes in documentation and archiving of data.

The QA/QC procedures are determined by Industry standard JSC "AMW" #058-51-2009 "Monitoring of GHG Emission Reductions" approved by Technical director on 18.11.2009 and other internal documents. The QA/QC procedures include:

- quality assurance of the measured monitoring parameters;
- quality assurance of monitoring data processing and recording;
- quality assurance of monitoring data archiving;
- quality control of internal documentation, archiving data, calculation correctness.

Head of planning and economic department and Chief power engineer JSC "AMW" are responsible for quality assurance procedures in areas of its activities. JI consultant is responsible for quality control procedures.

C.2. Participation of third parties

Verification of meters is provided by Centers of standardization and metrology.

C.3. Procedures of emergencies finding

The procedures of emergencies finding (troubleshooting) include the procedures of identification, registration and elimination of defects, trouble, malfunction, etc. in the main project equipment and measuring devices.

The procedures (incl. responsibility, frequency, etc.) of troubleshooting for main equipment and measuring devices are determined by internal documents JSC "AMW". The responsible for identification, registration and elimination of emergencies findings are Heads of plants and departments JSC "AMW" in monitoring boundaries: steel plant, rolling plant #1, foundry plant, CHP and power equipment plant, department of industrial control.

During the monitoring period (01.01.2008-31.12.2010) the special equipment regimes exploitation because of defects, trouble, malfunction of main project equipment and measuring devices were not registered. Therefore, there are no deviations from the monitoring plan of GHGs emissions because of special equipment regimes exploitation.

SECTION D. RESULTS OF GHGS EMISSION REDUCTIONS MONITORING

D.1. GHG project emissions

Calculation of GHG project emissions is provided in accordance with data and formulas stated in the section D "Monitoring plan" of project design documentation version 04 dated on 17.01.2011. Calculation including initial data is attached in Excel file.[3] The results of GHG emission monitoring by sources in project scenario for monitoring period 01.01.2008 - 31.12.2010 are provided in the table D.1-1.

Table D.1-1. GHG emissions in project scenario in 2008-2010, tCO_2-equivalent.

№	Emission source	2008	2009	2010
1.	Steel furnaces	282,840	266,735	256,694
2.	Ladle furnace	3,118	5,210	4,942
3.	Continuous-casting machine	7,647	3,315	3,662
4.	Rolling plant #1	100,297	102,919	129,533
5.	Combined heat and power station (CHP) and power equipment	39,418	48,631	62,524
6.	Foundary plant	1,575	-	-
7.	Lime calcining furnace	34,359	28,566	33,905
8.	Electric power system (the grid)	22,086	21,317	65,314
9.	Pig iron production (outside JSC "AMW")	41,936	12,235	5,050
10.	Total	533,276	488,928	561,624

D.2. GHG baseline emissions

Calculation of GHG baseline emissions is provided in accordance with data and formulas stated in the section D "Monitoring plan" of project design documentation version 04 dated on 17.01.2011. Calculation including initial data is attached in Excel file. The results of GHG emission monitoring by sources in baseline scenario for monitoring period 01.01.2008 - 31.12.2010 are provided in the table D.1-2.

[3] The calculation of the project emissions, baseline emissions and emission reductions is attached in the excel files:: 2011-02-07_AMW_Monitoring of GHG emissions_2008_version_02.xls, 2011-02-07_AMW_Monitoring of GHG emissions_2009_version_02.xls, 2011-02-07_AMW_Monitoring of GHG emissions_2010_version_02.xls

Table D.1-2. GHG emissions in baseline scenario in 2008-2010, tCO_2-equivalent.

№	Emission source	2008	2009	2010
1.	Steel furnaces	259,056	292,290	299,196
2.	Ladle furnace	2,846	5,516	4,772
3.	Rolling plant #1	105,040	109,321	127,818
4.	Combined heat and power station (CHP) and power equipment	31,263	48,948	40,775
5.	Foundary plant	7,868	8,650	8,999
6.	Lime calcining furnace	31,320	31,488	33,365
7.	Electric power system (the grid)	18,424	19,255	25,950
8.	Pig iron production (outside JSC AMW)	56,065	36,088	47,353
9.	Steel production (outside JSC AMW)	187,283	144,172	204,903
10.	Total	699,165	695,728	793,131

D.3. Leakages

Not applicable. Assessment of potential leakage and explanation that the leakage can be excluded from consideration is provided in accordance with paragraph 8 Guidance on criteria for baseline setting and monitoring (Version 02) and presented in the section B.3. of project design documentation version 04 dated on 17.01.2011.

D.4. Calculation of GHG emission reductions

Table D.4-1. Calculation of GHG emission reductions in 2008-2010.

№	Monitoring period	Project emissions (tCO_2-eq.)	Leakages (tCO_2-eq.)	Baseline emissions (tCO_2-eq.)	Emission reductions (tCO_2-eq.)
1.	01.01.2008-31.12.2008	533,276	-	699,165	165,889
2.	01.01.2009-31.12.2009	488,928	-	695,728	206,800
3.	01.01.2010-31.12.2010	561,624	-	793,131	231,507

№	Monitoring period	Project emissions (tCO_2-eq.)	Leakages (tCO_2-eq.)	Baseline emissions (tCO_2-eq.)	Emission reductions (tCO_2-eq.)
4.	Total (01.01.2008-31.12.2010)	1,583,828	-	2,188,024	604,196

D.5. Deviations of actual emission reductions from emission reductions estimated in PDD

Actual GHG emission reductions achieved by the project of steelmaking reconstruction at JSC "AMW" in monitoring period 01.01.2008 – 31.12.2010 are different from estimated in the project design documentation. The deviations of actual emission reductions from estimated and analysis of their reasons are provided below.

Table D.5-1. Deviations of actual emission reductions from emission reductions estimated in the project design documentation in monitoring period 2008-2010.

№	Parameter	Value
1.	Emission reductions in 2008-2010 estimated in the project design documentation, tCO_2-equivalent	688,931
2.	Actual emission reductions in 2008-2010, tCO_2-equivalent	604,196
3.	Deviations[4], %	- 12.3%

Actual GHG emission reductions achieved by the project of steelmaking reconstruction at JSC "AMW" in monitoring period 01.01.2008 – 31.12.2010 amount to 604,196 tCO_2-equivalent. That is on 84,735 tCO_2-equivalent (or 12.3%) less than estimated value of emission reductions stated in the project design documentation (version 04 dated on 17.01.2011).

The decrease of GHG emission reductions value can be in general explained by reduction of actual steel production at JSC "AMW" on 100 th. t during monitoring period (2008-2010) in comparison to the forecasted value used for GHG emission estimation in PDD. The main reason of steel production decrease (in comparison to forecasted value) is continuing EAF commissioning works which do not allow oven operation at full capacity. In 2011, the stage of commissioning works will be completed and the company released for the planned volume of steel production. It will provide a reduction in the deviations of actual emission reductions from the estimated values.

[4] Deviations are calculated as the difference between actual (monitoring report) and estimated (PDD) data divided by estimated (PDD) data.