Monitoring report

On Joint Implementation project

«Technical re-equipment of Chelyabinsk CHPP-3 with putting into operation of a combined-cycle gas plant»

Actual monitoring period: 19.05.2011 – 30.06.2012 г.

Beginning of monitoring period according to the PDD: since 01.01.2011

Version 1.1 (final after verification)

Date of preparation: 24 September 2012

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Section A. General information on project activity

A.1. Introduction

The aim of this report – representation of the results of monitoring and calculation of volume of Emission Reduction Units (ERUs) generated as a result of realization of the Joint Implementation project "Technical re-equipment of Chelyabinsk CHPP-3 with putting into operation of a combined-cycle gas plant" for the period from 19th May 2011 to 30th June 2012.

The technical design on the project is to enlarge the Chelyabinsk CHPP-3 with a combined cycle gas turbine power-generating unit of 220 MW capacity, plant number 3. Construction-and-assembling operations were finished in April 2011. Permission for start of the object's operation was received from administration of Chelyabinsk city by 19 May 2011. Thereby the considered unit #3 started industrial operation by 19th May 2011.

The considered project was approved in Russian Federation as a Host Party by the order of Ministry of economic development #112 of 12th March 2012. The Letter of Approval from Finland YM4/44/2012 has been received by 23rd May 2012.

A.2. Brief description of the project

According to the project design developed for CHPP-3 the combined-cycle gas turbine plant (CCGT) of 220 MW capacity consists of:

- Gas turbine GTE-160 of OJSC «Silovie machini» – "LMZ";
- Steam turbine T-50/70-6.8/0.12 of OJSC "KTZ" Kaluga;
- Steam boiler P-134 OJSC "Engineering Company "ZIOMAR"

Greenhouse gas emissions will be reduced due to the displacement of electricity from the grid by the electricity generated by Chelyabinsk CHPP-3 that will produce electricity with lower carbon intensity in comparison with electricity from the grid. The heat produced at the new unit in the form of hot water will be supplied by means of far district heating system in the heating networks of city Chelyabinsk. The additional amount of heat will allow refusing the construction of new boilers and extension of existing heat supply sources in city Chelyabinsk, which have no sufficient heat reserve.

Table A.2.1. Status of the project implementation

Stage	**Status**
The contract # 2323 of the general contracting for the construction of "turnkey" power block # 3 of the Chelyabinsk CHPP-3	Signed by 20th March 2008 between OJSC "TGC-10" (previous owner of the plant) and CJSC "Interelectro"
Act of formal acceptance of the completed construction by the acceptance committee	Approved in May 2011 by acceptance committee of the OJSC "Fortum" (data was not designated)
Certificate of compliance of the reconstructed object of capital construction with requirements of technical regulations, other regulations and design documentation # Ch-289	Issued to OJSC "Fortum" by Urals Department of Federal Service on environmental, technological and nuclear supervision by 17th May 2011
Permission for start of the object's operation	Issued by administration of Chelyabinsk city by 19th May 2011

A.3. Emission reduction for monitored period

Detailed calculations of the generation of Emission Reduction Units are presented in Section D.

Actual volume:

from 1st May 2011 to 30th June 2012: 335 793 tonnes CO_{2eq}

According to the PDD, version 7 of 25th November 2010 the estimated volume of ERUs:

from 1st January to 31st December 2011: 381 898 tonnes CO_{2eq}

from 1st Janaury to 31st December 2012: 381 898 tonnes CO_{2eq}

Actual generation of ERUs started in May but not January 2011 due to delay in project implementation timeline. Therefore the volumes of ERUs generation may be compared at the annual basis after end of 2012 as in warm time period of the year the load of CHP is lower.

Information on respective revision of monitoring plan – see section C.

A.4. Contact information of project participants

Representative of the project owner:

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Represented by:	-
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Salutation:	Ms
Last name:	Sufiyarova
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Department:	Management of production and trading portfolio

Representative of consultant of the project owner and developer of the monitoring report:

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Represented by:	
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Salutation:	
Last name:	Myachin
Middle name:	Konstantin Yurevich

B. System of monitoring of greenhouse gases emission reduction

B.1 Information on the collection and archiving of information on the environmental impacts of the project

In accordance with Federal Law #7-FZ of 10.01.2002 "On Environmental Protection" the heads of organizations and professionals who are responsible for making decisions in course of economic activities that have a negative impact on the environment must be trained in the field of environmental protection and environmental safety. In the staff of the Chelyabinsk CHPP-3 there is a specialist for the environmental safety which is responsible for ensuring compliance of the enterprise with environmental rules and regulations and acquisition of state permits for emissions and discharges of hazardous substances, waste disposal.

In accordance with the requirements of Articles 14, 22 of the Federal Law "On Environmental Protection" Chelyabinsk CHPP-3 of OJSC "Fortum" has a design of norms for maximum permissible emissions (MPE), developed in 2007. There is a statement in the annotation to this document that after the commissioning of power-generating unit #3 of CHPP-3 the emissions of harmful substances (pollutants) will not exceed the maximum permissible concentration that is confirmed by perspective dissipation calculations and therefore temporarily agreed emissions have not been established.

Rostechnadzor issued a permit for emission of harmful substances (pollutants) into the air # 1407/p, effective from December 12, 2007 to December 12, 2012 (validity period of MPE document).

Besides of periodic monitoring of compliance with MPE by sources of industrial emissions the Chelyabinsk CHPP-3 carries out an instrumental control of quality of air at the border of the sanitary protection zone and in the closest point of the populated area. This program is approved by Rospotrebnadzor of Chelyabinsk region.

Monitoring of compliance with the norms for maximum allowable discharges into the pool of Chelyabinsk CHPP-3 is performed in accordance with the Program of regular observations on the water body and water protection area approved by the director of Chelyabinsk CHPP-3 together with the head of the department of water resources in the Chelyabinsk region of the Federal water resources Agency and head of Rospotrebnadzor of Chelyabinsk region.

B.2 Methodological approach for monitoring implementation

Monitoring of greenhouse gases emissions in the project and baseline was performed mainly in accordance with PDD, version 7 of 25/11/2010 except deviations described in Section C.

Project applies JI specific approach in accordance with principles of Guidance on criteria for baseline setting and monitoring, version 03.

Project boundary include (see. Pic. B.2.1 below):

- Power-generating unit #3 of Chelyabinsk CHPP-3 (combined-cycle gas plant);
- Auxiliary equipment of CCGT plant;
- Thermal power plants of Integrated Power Systems of Urals and Mid Volga (see Annex 2 of the PDD version 7 of 25/11/2010);
- New gas fired boilers at the boiler houses of Tyumen city in the absence of the CCGT plant

Picture B.2.1 Project boundary with monitoring points

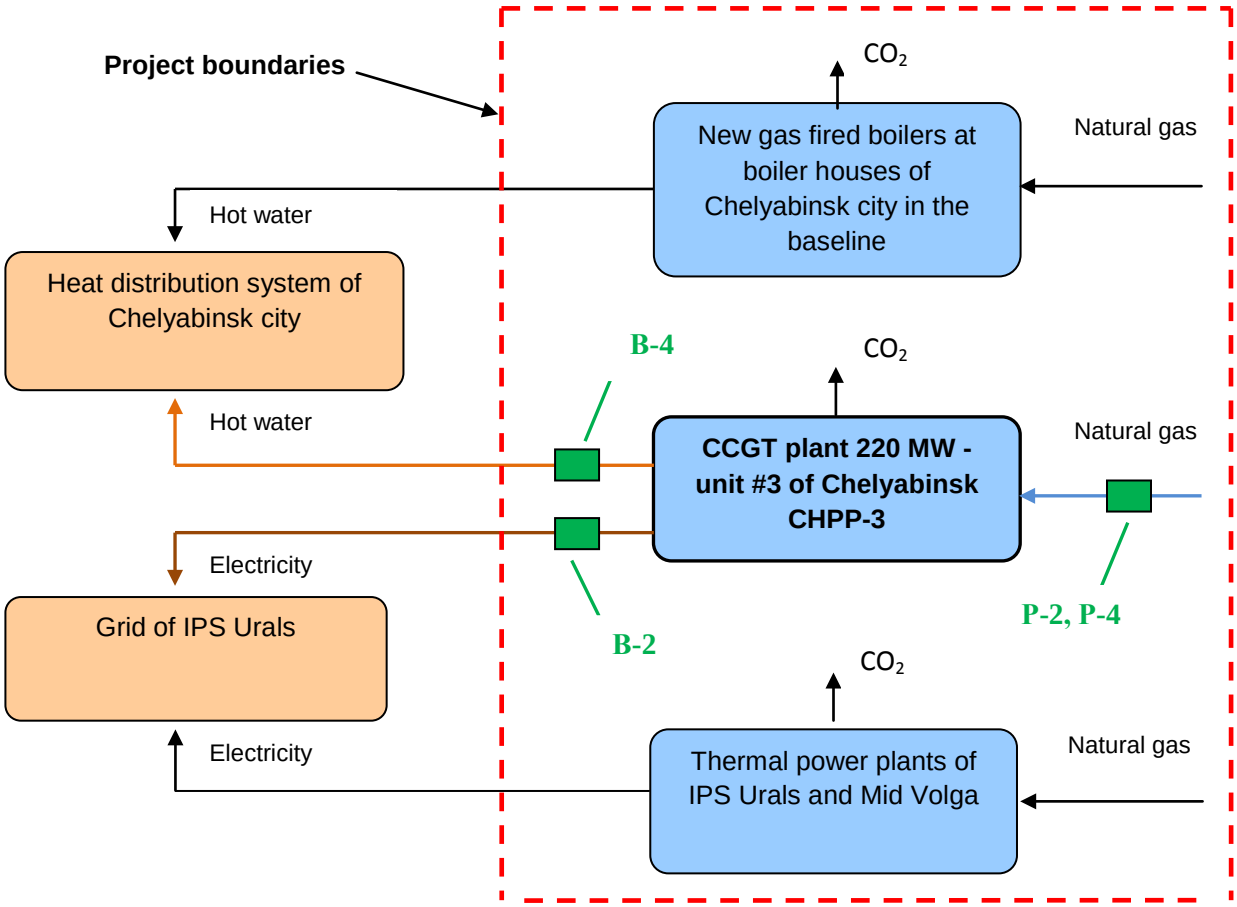

Table B.2.1. Parameters monitored during crediting period

# of point[1]	Parameter, unit of measurement	Designator	Periodicity of measurement	Source of data at Tyumen CHPP-1
P-2	Consumption of natural gas by power-generating unit #3 (CCGT), ths. m^3	$FC_{NG,y}$	Constantly	Program-technical complex (PTC) “Ovation” – Automated system of process control (ASPC) of power-generating unit #3 (Emerson company[2])
P-4	Net calorific value of natural gas, kcal/m^3	$NCV_{NG,\ y}$	Weekly at the average	Own laboratory. Protocols of gas quality analysis
B-2	Output of electricity to external consumers from power-generating unit #3 (CCGT), ths. kWh	$EG_{PJ\ y}$	Constantly	System of automated information-measuring for commercial accounting of electric power (SAIIM CAEP)
B-4	Output of heat to external consumers from power-generating unit #3 (CCGT), Gcal	$HG_{PJ\ y}$	Constantly	PTC “Ovation”

[1] Tables D.1.1.1. и D.1.1.3. of PDD, version 7 of 25/11/2010

[2] http://www.sealtek.ru/energo/ptk-emerson/

Monitoring report «Technical re-equipment of Chelyabinsk CHPP-3 with putting into operation of a combined-cycle gas plant». Version 1.1 of 24.09.2012.

Table B.2.2. Data and parameters fixed ex-ante in the PDD, version 7 of 25/11/2010

# of point[3]	Parameter, unit of measurement	Designator	Value
P-5	Coefficient of CO_2 emissions for natural gas, tones CO_2/TJ	$EF_{CO2,\ NG,\ y}$	56,1
B-3	Combined CO_2 emission factor for grid electricity produced in IPS of Urals and Mid Volga, tonnes CO_2/MWh	$EF_{CO2\ grid\ y}$	0,5772
-	Efficiency of new gas fired boilers in the baseline, %	η_{boiler}	93,3

At the moment Chelyabinsk CHPP-3 consist of 2 identical steam power units (plant #1 and #2) and one CCGT unit (plant #3) as well as peak water heating boilers. Installed capacity of each steam power unit is 180/210 MW. Gas supply of Chelyabinsk CHPP-3 is provided by 2 gas distribution points of high pressure.

Despite the fact that gas distribution points have verified metering units with commercial class counting their data is impossible to apply for the monitoring of considered project as they represent the total natural gas consumption by all equipment.

For monitoring of the consumption of natural gas by power-generating unit # 3 considered in this project the technical class metering unit installed in the gas treatment point for gas turbine. This unit has a chamber orifice plate, temperature and pressure sensors that measure the temperature of the gas passing through the orifice, the gas pressure and the differential pressure of gas on the orifice. Bringing the gas flow to normal conditions is performed by Program-technical complex “Ovation” installed as a part of the equipment package of unit #3. Data of ASPC is stored at the special server for 1 year and then is transferred to the external information-carrying medium by the personnel of Service of maintenance and repair of ASPC.

Measurement of the electricity output from power-generating unit #3 is performed by five multifunctional three-phase electric energy meters “Alpha 1800” (A1802RALXQ-P4GB-DW-4) and two multifunctional three-phase electric energy meters EuroALPHA integrated into the certified System of automated information-measuring for commercial accounting of electric power (SAIIM CAEP)

Output of the heat energy to the external consumers from CCGT unit is carried out by means of block of heat exchangers consisted of two horizontal heaters of grid water (HHGW) and one water-water heat exchanger (WWHE). The calculation of the amount of the heat output is done by measurement of the water flow in the pipeline supplying the hot water to the grid and difference of the grid water temperature before and after block of heat exchangers. Hot water is directed to the external consumers through the main plant collector.

B.3 Organization of the monitoring implementation

OJSC “Fortum” has several projects registered as Joint Implementation in Russian Federation and coordinates the work on them on the corporate level.

For operation of the project monitoring at Chelyabinsk CHPP-3 in 2011-2012 there was no need for introduction of the new reporting forms, the existing sources of data were used:

- for the period since May to December of 2011 – Technical report on exploitation of thermal power plant, form 3-tech

[3] Tables D.1.1.1. и D.1.1.3. of PDD, version 6 of 14/09/2010

- for the period since January to June 2012 – Report of corporate information system SAP of OJSC “Fortum” (due to separation of CCGT unit in SAP into the individual group of equipment).

Main function for data processing and preparation of respective technical reporting is hold by Group of accounting. The plant operates the document exchange in electronic form. All reporting forms are sent monthly to the Department of management of portfolio of production and trading of OJSC “Fortum” situated in Moscow.

Storage of all records on monitoring for JI project (describing the period from May 1, 2011 to December 31, 2012) in paper/electronic form is provided until January 1, 2015.

B.4 Metrological support of the monitoring for power-generating unit #3 (CCGT)

Table B.4.1. Measurement equipment and systems used for monitoring and status of their verification/calibration

Type of the device	Accuracy class (inaccuracy)	Date of previous calibration/verification	Periodicity of verificaton/calibration	Comments
Consumption of the natural gas by the GTU				
Chamber orifice plate DKS-10-200, d_{20}=119,21 mm	-	31.01.2011	4 years	Verified during installation
Temperature transducer TPTU-1-1/142, serial number 9552	0,5	15.10.2010	2 years	Factory calibration
Differential pressure sensor EJA110A, serial number 91K849855	0,075%	27.08.2010	3 years	Factory calibration
Excess pressure sensor EJA530A, serial number 91K926500	0,075%	03.09.2010	2 years	Factory calibration
Output of heat energy, grid water before block of heat exchangers				
Differential pressure sensor EJA110A, serial number 91K850214	0,075%	27.08.2010	3 years	Factory calibration
Excess pressure sensor EJA530A, serial number 91K850383	0,075%	07.09.2010	2 years	Factory calibration
Output of heat energy, grid water after block of heat exchangers				
Averaging pressure tube «TORBAR», serial number 3K240000015675	1%	06.12.2010	2 years	Factory calibration
Temperature transducer TPTU-1-1/142, serial number 9621	0,5	15.10.2010	2 years	Factory calibration
Output of electric energy to external consumers				
Multifunctional three-phase electric energy meters Alpha 1800 (A1802RALXQV-P4GB-DW-4), serial number (electricity transmission line): 01208933 (Kozyrevo-2) 01208935 (Novometallurg.-2) 01208931 (Novometallurg.-3)	 0,2S/0,5 0,2S/0,5	 08.07.2010 08.07.2010 08.07.2010	 12 years 12 years 12 years	 Factory calibration Factory

01208929 (Novometallurg.-4) 01229880 (OV 220 kV)	0,2S/0,5 0,2S/0,5 0,2S/0,5	08.07.2010 18.08.2011	12 years 12 years	calibration 13.10.2011 in the cell of OV 220 kV the replacement of counter # 011208934 was done (date of its verification 08.07.10)
Multifunctional three-phase electric energy meters EuroALPHA, serial number (electricity transmission line): 01143198 (Kozyrevo-1) 01143195 (Novometallurg.-1)	0,2S/0,5 0,2S/0,5	11.08.2006 11.08.2006	8 years 8 years	Factory calibration
The system of automated information-measuring for commercial accounting of electric power (SAIIM CAEP) of power-generating units #2 and #3 of Chelyabinsk CHPP-3	Registered in the State register of measuring instruments under # 47022-11 of 16.06.2011 (Certificate of type approval of measuring RU.E.34.033.A # 42918) Verification certificate of SAIIM CAEP #E-11-49801 of 16.06.2011[4].			
Automated system of process control				
Program-technical complex “Ovation”	Certificate on approval of type of measurement means #31622 of 31.05.2008. Issued by Federal agency on technical regulation and metrology			

[4] According to the letter of Administrator of the trading system of wholesale electricity market to the OJSC “Fortum” by 29/09/2011 the SAIIM CAEP of power generating units #2 and #3 of Chelyabinsk CHPP-3 has been classified by class “A” from 19/04/2011 and approved for the used at wholesale electricity market from that date.

C. Revision of monitoring plan

This monitoring report contains a revision of the monitoring plan presented in section D of PDD, version 7 of November 25, 2010 (on this version of PDD the Bureau Veritas Certification Holding SAS issued a determination report # Russia/0061-2/2010 version 02 of November 25, 2010). The changes have been made to adapt a monitoring plan and represent the actually existing situation according to the "Guidance on criteria for baseline setting and monitoring" (Version 03). All the rest parameters and formulae are in compliance with PDD

Mentioned in PDD	Implemented in practice	Explanation
C.3. Length of the crediting period 2 years (24 months, from 1st January 2011 to 31st December 2012). The starting date of the crediting period is January, 1 2011	The actual starting date of the crediting period is May, 19 2011 upon receipt of the permission for start of the object's operation from administration of Chelyabinsk city	Due to the delay in the technical implementation of the project the construction and assembly works had been lasted until May 2011 Act of formal acceptance of the completed construction was signed by acceptance commission of OJSC "Fortum" in May 2011 (data was not designated). Certificate of compliance of the reconstructed object of capital construction with requirements of technical regulations, other regulations and design documentation # Ch-289 was issued by Rostekhnadzor by 17th May 2011 based on Act of final chick-up #845r of 16th May 2011. Therefore the data of the issuance of Permission for start of the object's operation (of 19th May 2011) from administration of Chelyabinsk city has been considered as a starting date of the crediting period.
CO_2 emissions from generation of electrical and heat energy (PEy) are calculated as: $\boldsymbol{PE_y = FC_{NG,y} * COEF_{NG,y}}$ (formula 4) Where:	Measuring of consumption of natural gas by the power-generating unit # 3 has been taking place since its launch, as this parameter is the primary information. However the report on form 3-tech, used for	A described reporting system has been accepted for a long time in the Russian energy sector. In the considered case it is based on the initially measured value of fuel consumption by Chelyabinsk CHP-3 unit #3 (it uses only natural gas) separated by means of

- PE_y – Project emissions in year y ($тCO_2$); - $FC_{NG,y}$ – Total volume of natural gas combusted in the project plant (m^3) in year(s) 'y' (m^3); - $COEF_{NG,y}$ – CO_2 emission coefficient (tCO_2/m^3) in year(s) for natural gas. **COEFNG,y = NCVNG,y * EFCO2,NG,y** (formula 5) Where: NCVNG,y – Net calorific value per volume unit of natural gas in the year y (GJ/m^3);; EFCO2,NG,y – Weighted average CO_2 emission factor of natural gas in year y (tCO_2/GJ).	calculation of the emissions in 2011 does not contain the value of consumption of natural gas in natural units, instead it contains the values of specific consumption of equivalent fuel (calorific value of 7000 kcal/tonne) in grams of equivalent fuel/kWh of output electricity and in kg of equivalent fuel/Gcal, as well as actual figures of output of electricity and heat. Net calorific value of natural gas is measured by laboratory of Chelyabinsk CHPP-3 and used for conversion of the gas consumption from natural units into equivalent fuel (measurements were not done only in September and October 2011 by the reason of shut down of power-generating unit #1 (where the sampling point is located) for principal maintenance. Calorific values were taken from other power plants of Chelyabinsk city). Formula for monthly calculation of the natural gas consumption in 2011 made up as: $\boldsymbol{FC_{NG,y} = SFC_{NG,\,EL,\,y} * EG_y + SFC_{NG,\,HEAT,y} * HG_y}$ Where: $FC_{NG,y}$ – consumption of natural gas, tones equivalent fuel $SFC_{NG,\,EL,\,y}$ – specific consumption of equivalent fuel on electricity output, grams equivalent fuel/ kWh EG_y – output of electricity from bars, ths. kWh $SFC_{NG,\,HEAT,y}$ – specific consumption of equivalent fuel on heat output, kg equivalent fuel/Gcal HG_y – net output of heat energy, Gcal	calculation to the consumption of equivalent fuel for electricity output and for heat output according to the "Methodological guidelines on preparation of the report of the power plant and joint-stock company of energy and electrification on heat efficiency of the equipment" - RD 34.08.552-95 approved by Ministry of fuel and energy of Russian Federation. Addition of fuel consumption per heat and electricity output gives the initial measured fuel consumption. Introduction of such approach for year 2011 is connected only to the specific of reporting for unit #3 in that year. Therefore revision of monitoring report does not influence the accuracy and/or applicability of information collected compared to the original monitoring plan.

	Formula for monthly calculation of the project emissions in 2011 made up as: $\boldsymbol{PE_y = FC_{NG,y} * 7000 * 4,1868 * EF_{CO2,\ NG} / 10^9}$ Where: $FC_{NG,y}$ – consumption of natural gas, tones of equivalent fuel 7000 – calorific value of equivalent fuel, kcal/tonne 4,1868 – conversion coefficient from calories to Joules $EF_{CO2,\ NG}$ – coefficient of CO_2 emission on the unit of energy of natural gas, tCO_2/TJ.	

D. Calculation of emission reduction

D.1 Project CO_2 emissions (formulae for 2012 are presented below. Formulae for 2011 – see section C)

$$PE_y = FC_{NG,y} * COEF_{NG,y}$$ (formula **1** in PDD)

Where:

PE_y	Project emissions for the period *y*, tonnes CO_2
$FC_{NG,y}$	Total amount of fuel consumed by the project power plant for the period y, m^3
$COEF_{NG,y}$	Volumetric coefficient of CO_2 emission for the natural gas, tonnes CO_2/m^3, calculated as:

$$COEF_{NG,y} = NCV_{NG,y} * EF_{CO2NG}$$ (formula **2** in PDD)

Where:

$NCV_{NG,y}$:	Net calorific value of natural gas, GJ/m^3
EF_{CO2NG}:	Coefficient of CO_2 emission for natural gas, tonnes CO_2/GJ

D.2 Baseline CO_2 emission

$$BE_y = BE_{grid\ y} + BE_{heat\ y}$$ (formula **20** in PDD)

Where:

BE_y	Total baseline emissions for the period y, tonnes CO_2
$BE_{grid\ y}$	Baseline CO_2 emissions from production of electricity in IPS of Urals and Mid Volga, tonnes CO_2
$BE_{heat\ y}$	Baseline CO_2 emissions from production of heat by new gas fired boilers at the boilers houses of Chelyabinsk city in the baseline, tonnes CO_2/year

$$BE_{grid\ y} = EG_{PJ\ y} * EF_{CO2\ grid\ y}$$ (formula **21** in PDD)

Where:

$EG_{PJ\ y}$	Output of electricity to external consumers from power-generating unit #3 (CCGT) of Chelyabinsk CHPP-3, ths. kWh
$EF_{CO2\ grid\ y}$	Combined CO_2 emission factor for grid electricity produced in IPS of Urals and Mid Volga, tonnes CO_2/MWh

$$BE_{heat\,y} = HG_{PJ\,y} \bullet EF_{NG} * 4.1868/\eta_{boiler}$$ (formula **22** in PDD)

Where:

$HG_{PJ\,y}$	Output of heat to external consumers from power-generating unit #3 (CCGT) of Chelyabinsk CHPP-3, Gcal
η_{boiler}	Efficiency of new gas fired boilers at the boilers houses in the baseline, %
EF_{CO2NG}	Coefficient of CO_2 emission for natural gas, tonnes CO_2/GJ;
4.1868	Conversion factor from calories to Joules

D.3 Сокращение выбросов

$$ER_y = BE_y - PE_y$$ (formula **36** in PDD)

Where:

ER_y	Emission reduction for the period *y*, tonnes CO_{2eq}
BE_y	Baseline emissions for the period *y*, tonnes CO_2
PE_y	Project emissions for the period *y*, tonnes CO_2

D.4 Tables demonstrating the results of calculation on presented formulae

Data from monthly technical report of Chelabinsk CHP-3 by form of 3-tech for 2011

Power-generating unit №3 (CCGT)					Generally for station	
Year 2011	**Net output of electricity from bars, ths. kWh**	**Specific consumption of equivalent fuel on electr. output, g/kWh**	**Net output of heat energy, Gcal**	**Specific consumption of equivalent fuel on heat output, kg/Gcal**	**Net calorific value of natural gas, kcal/m3**	**Net calorific value of natural gas, MJ/m3**
May	63 838	228,7	0	0	7957	33,32
June	132 762	255,6	0	0	7948	33,28
July	148 965	250,1	0	0	7942	33,25
August	143 525	256,0	0	0	7957	33,31
September	125 375	255,9	910	123,1	7919	33,16
October	148 013	245,9	29 221	106,3	7920	33,16
November	98 530	242,3	32 004	109,7	7956	33,31
December	141 744	239,5	72 965	104,4	7962	33,33
Totally	**1 002 752**	**246,8**	**135 100**	**110,9**	**7945**	**33,27**

Data of montly reporting of Chelyabinsk CHP-3 from corporate information system SAP for 2012

	Power-generating unit №3 (CCGT)			Generally for station	
Year 2012	**Net output of electricity from bars, ths. kWh**	**Net output of heat energy, Gcal**	**Consumption of natural gas, ths. m3**	**Net calorific value of natural gas, kcal/m3**	**Net calorific value of natural gas, MJ/m3**
January	140 863	107 695	37 986	7963	33,34
February	133 683	96 303	36 053	7955	33,31
March	130 898	78 792	33 734	7915	33,14
April	102 709	12 948	24 348	7937	33,23
May	124 471	0	28 791	7971	33,37
June	113 251	0	26 010	7994	33,47
Totally	**745 875**	**295 738**	**186 922**	**7956**	**33,31**

Parameters fixed ex-ante in the PDD, version 7 of 25/11/2010

Combined CO2 emission factor for grid electricity to be replaced, ths CO2/MWh	**0,5772**
Efficiency of new gas fired boilers at the boiler houses in the baseline,%	**93,3%**
CO2 emission factor for natural gas, tonnes CO2/TJ	**56,1**

Generation of Emission Reduction Units in May 2011 - June 2012

Month	Project emissions from natural gas consumption, tonnes CO_2	Baseline emissions for electricity, tonnes CO_2	Baseline emissions for heat, tonnes CO_2	Total baseline emissions, tonnes CO_2	Emission Reduction Units generation, tonnes CO_{2eq}
Year 2011					
May	24 004	36 847	0	36 847	12 843
June	55 793	76 630	0	76 630	20 837
July	61 255	85 983	0	85 983	24 728
August	60 410	82 843	0	82 843	22 433
September	52 938	72 366	229	72 596	19 658
October	64 948	85 433	7 356	92 789	27 841
November	45 025	56 872	8 057	64 928	19 903
December	68 340	81 815	18 369	100 183	31 843
Year 2012					
January	71 048	81 306	27 112	108 418	37 370
February	67 372	77 162	24 244	101 406	34 034
March	62 717	75 554	19 836	95 390	32 673
April	45 390	59 284	3 260	62 543	17 153
May	53 898	71 845	0	71 845	17 947
June	48 838	65 368	0	65 368	16 530
Totally	**781 976**	1 009 308	108 462	**1 117 769**	**335 793**

Annex 1

List of abbreviations

ASPC	Automated System of Process Control
CCGT	Combined-Cycle Gas Turbine
CHPP	Combined Heat and Power Plant
GDP	Gas Distribution Point
GTP	Gas Treatment Point
ERU	Emission Reduction Unit
IPCC	Intergovernmental Panel on Climate Change
LLC	Limited Liability Company
IPS	Integrated Power System
MPE	Maximum Permissible Emission
OJSC	Open Joint-Stock Company
PDD	Project Design Document
SAIIM CAEP	System of Automated Information-Measuring for Commercial Accounting of Electric Power