JI MONITORING REPORT
(for reporting period 01.01.2008-31.03.2012)

Title of manager of the developer of documentation

Director, CEP Carbon Emissions Partners S.A.
(position)

(signature)

Fabian Knodel
(name and patronymic, last name)

PS

Title of manager of the economic activity subject- JI Project Host Party

The Head of the Board
PJSC «Poltavagaz»
(position)

(signature)

Grynchak R.I.
(name and patronymic, last name)

PS

Monitoring report of JI project «Reduction of methane emissions on the gas equipment of gas distribution points, gas armature, flanged and threaded joints of gas distribution networks of PJSC «Poltavagaz»

Monitoring period: 01/01/2008-31/03/2012

Version: 02 as of 20/04/2012

Contents:

Annex A.[1] Calculation of greenhouse gases emission reductions under the JI project "Reduction of methane emissions on the gas equipment of gas distribution points, gas armature, flanged and threaded joints of gas distribution networks of PJSC «Poltavagaz» for the period from 01/01/2008 to 31/03/2012.

[1] Annex A is provided in electronic form

Section A. General project activity and monitoring information

A.1. Title of the project

«Reduction of methane emissions on the gas equipment of gas distribution points, gas armature, flanged and threaded joints of gas distribution networks of PJSC "Poltavagaz"»

A.2. Status of the JI project

JI project "Reduction of methane emissions on the gas equipment of gas distribution points, gas armature, flanged and threaded joints of gas distribution networks of PJSC "Poltavagaz" was determined by Bureau Veritas Certification, determination report No. UKRAINE-DET/0459/2012 as of 02/03/2012. The project was approved by the State Environmental Investment Agency of Ukraine (Letter of Approval No.972/23/7 dated 13/04/2012) and the Federal Office for Environment (FOEN) of Switzerland (Letter of Approval No.J294-0485 as of 23/01/2012).

A.3. Brief description of the project activity

As a result of unscheduled rehabilitation of gas distribution points (GDP), cabinet-type gas distribution points (CGDP) and gas fittings of gas distribution networks carried out by PJSC «Poltavagaz» the following greenhouse gases (GHG) emission reductions were achieved in accordance with this project for the monitoring period from January 01, 2008, to March 31, 2012[2]:

Table 1. GHG emission reductions

	2008	2009	2010	2011	01/01/2012 – 31/03/2012
Methane leaks reduction for the period, m^3	60 459 644	62 636 861	62 912 306	62 912 306	15 512 623
GHG emission reductions for the period, tCO_2e.	910 087	942 860	947 006	947 006	233 508
Total methane leaks reduction for the monitoring period, m^3	**264 433 740**				
Total GHG emission reductions for the monitoring period, tCO_2e.	**3 980 467**				

[2] The presented values of GHG emission reductions are approximated to integers.

A.4. Monitoring period

Starting date: 01/01/2008
End date: 31/03/2012

A.5. Methodology applied to the project activity

A.5.1. Baseline determination methodology

The project applies a JI-specific approach based on methodology AM0023 "Leak detection and repair in gas production, processing, transmission, storage and distribution systems and in refinery facilities," Version 4.0,[3] approved by Clean Development Mechanism Executive Board with clarification related to the leak measurement method stated in Section B.1 of the PDD Version 03.

The baseline was chosen according to the requirements of the "Guidance on criteria for baseline setting and monitoring", Version 03, according to the Guidelines for users of the JI PDD form, Version 04.

A.5.2. Monitoring methodology

For the quantitative estimation and preparation of the report on emission reductions the JI-specific approach based on approved monitoring methodology AM0023, Version 4.0, with clarification related to the leak measurement method (Section B.1 of the PDD Version 03) was used.
The uncertainty of the measurement method was taken into account in the course of the calculation of GHG emission reductions (see Section D of the PDD Version 03).

A.6. Status of implementation including project milestones

In accordance with the PDD Version 03, the project boundary includes the methane leak points due to leakiness of gas equipment of GDP (CGDP), gas fittings, flanged and threaded joints of gas distribution networks of PJSC «Poltavagaz». In total the project boundary includes equipment of 2494 GDPs (CGDPs) and 5047 gas fitting units. During the reporting monitoring period gas equipment of 249 GDPs (CGDPs) and 506 gas fitting units were repaired (replaced). PJSC "Poltavagaz" completed repairs of gas equipment of all GDPs (CGDPs) and all gas fittings included in the JI project boundary, in the reporting monitoring period. The number of repaired GDPs (CGDPs) and repaired (replaced) gas fittings of gas distribution networks of PJSC "Poltavagaz" by periods is provided in Table 2:

[3] http://cdm.unfccc.int/UserManagement/FileStorage/JY2L0XEKMB3HD18T7RPO6ZSFCQINGA

Table 2. Number of repaired GDPs (CGDPs) and repaired (replaced) gas fittings of gas pipelines by periods

Period	Number of repaired GDPs (CGDPs)	Number of repaired gas fittings of gas distribution networks
2005	498	1 009
2006	998	2 018
2007	749	1 514
2008	204	373
2009	45	133
2010	-	-
2011	-	-
January 2012 – March 2012	-	-
Total	**2 494**	**5 047**

The list of GDPs (CGDPs) and gas fittings repaired during the accounting monitoring period are presented in Annex A[4]

Project activities for the current monitoring period (January 01, 2008 – March 31, 2012) also involved subsequent Purposeful Examination and Technical Maintenance (PETM) of all GDP (CGDP) gas equipment and gas fittings repaired (replaced) in the whole JI project life.

GDP (CGDP) gas equipment and gas fittings of gas pipelines repaired (replaced) during the previous periods of project activity are inspected on a regular basis as part of standard monitoring programme to ascertain that they do not become leak sources again.

According to the Monitoring Plan provided in the PDD Version 03, current repairs of gas equipment are carried out once a year, and maintenance is performed once per half-year.

[4] Annex A «Calculation of greenhouse gases emission reductions under the JI project "Reduction of methane emissions on the gas equipment of gas distribution points, gas armature, flanged and threaded joints of gas distribution networks of PJSC «Poltavagaz» for the period from 01/01/2008 to 31/03/2012» is provided in electronic form

Results of measurements of methane leaks at repaired (replaced) GDP (CGDP) equipment and gas fittings of PJSC “Poltavagaz” gas pipelines do not exceed the leaks measured after the first repair of equipment.

Samples of repaired (replaced) GDP (CGDP) equipment are shown in Figures 1-2.

Figure 1. A repaired GDP in Poltava, 28 Gozhulianska St., registry No.458

Figure 2. A replaced Madas filter at a GDP, registry No.434

A.7. Possible deviations from or revisions of the registered PDD

There are no significant deviations from the registered version of PDD.

According to the JI-specific approach based on the methodology AM0023, Version 4.0, GHG emission reductions within the framework of this project are calculated ex-post. The expected calculated GHG emission reductions listed in the determined PDD Version 03 differ from actual reductions for the current monitoring period by 2%. This can be explained by the fact that the estimations of emission reductions given in the determined PDD Version 03 were preliminary and were based on theoretical calculations, statistical estimates, as well as on the basis of initial measurements performed at facilities of PJSC "Poltavagaz" gas distribution infrastructure before the beginning of the project implementation.

A.8. Possible deviations from or revisions of the registered monitoring plan

There are no deviations from the registered monitoring plan.

A.9. Persons responsible for the preparation and submission of the monitoring report

Work Team Leader, Chief Engineer of PJSC «Poltavagaz» I. Vysochenko is responsible for the monitoring report on the part of PJSC «Poltavagaz» and Director of CEP Carbon Emissions Partners S.A Fabian Knodel is responsible for the report on the part of CEP Carbon Emissions Partners S.A.

Section B. Key monitoring activities

B.1.1. Applied equipment

Control and monitoring system is divided into three parts:
1) measurement of methane leaks before repair (replacement) of gas equipment;
2) measurement of methane leaks after repair (replacement) of gas equipment;
3) archiving and processing of obtained results.

The measurement of natural gas leaks is made on the basis of “calibrated bag” technology described in the approved CDM methodology AM0023 Version 4.0 «Leak detection and repair in gas production, processing, transmission, storage and distribution systems and in refinery facilities». When using this methodology it is difficult to take into account the volume of fitting where the measurements are carried out and the initial volume of air when determining the gas volume that inlets into the bag.
The problem was solved by manufacturing of a special unit on the basis of a plastic tank of a known volume (0.11 m3), a package, a plastic hose and a manometer (see Figure 3). All joints are leak-proof.

Figure 3. A device for quantitative measurement of methane leaks

A scheme of the device is presented in Figure 4.

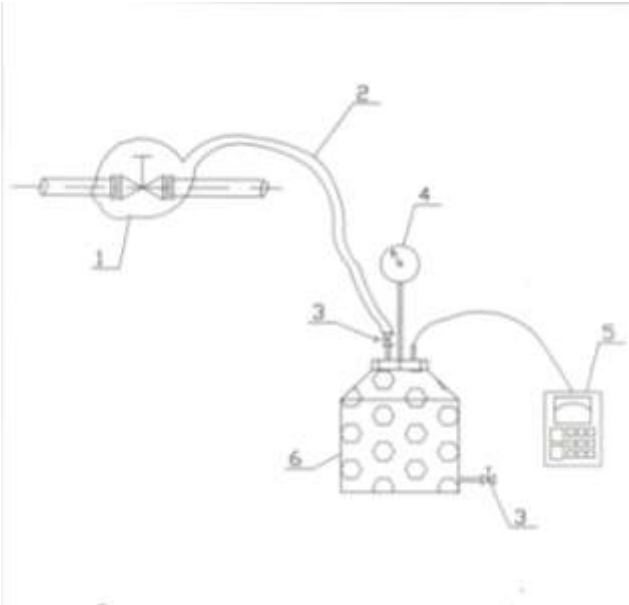

Figure 4. A scheme of the device for quantitative measurement of methane leaks

Legend:
1. Leak-proof bag.
2. Hose.
3. Tap.
4. Manometer.
5. Variotec® 8-EX gas analyzer.
6. Leak-proof tank.

Variotec® 8-EX gas analyzer. In order to determine methane concentration in a sample high-accuracy Variotec® 8-EX gas analyzer is used. Its photo is provided in Figure 5.

Figure 5. A photo of Variotec® 8-EX gas analyzer.

The gas analyzer has the following characteristics:
- explosion-proof (CENELEC);
- calibration: Methane CH4 /natural gas, propane C3H8;
- methane detection in the process of control of pipeline networks (ppm range);
- gas detection at the internal installations (ppm range);
- alarm when approaching the lower explosion limit (%UEG or Vol.%-range);
- measurement of concentration upon gas contamination and inertisation of lines (Vol.%-range);
- measurement of concentration in probe aperture (Vol.%-range).

Relative error makes 10%, which is in line with EN 50054/57 Standard[4].

After leak detection and measurement, GDP (CGDP) gas equipment and gas fittings of gas pipelines are repaired or replaced with the use of modern sealing materials (GOST 7338-90[5], GOST 5152-84[6] or GOST 10330-76[7]) and obsolete equipment is replaced by new modern equipment from European or domestic manufacturers.

B.1.2. Calibration procedure

The devices used in the monitoring of methane leaks that require calibration include:

- Variotec® 8-EX gas analyzer. Calibration frequency is once per 1 year;
- D-59N-100-1.0 6 kPa manometer. Calibration frequency is once per 1 year;
- TL-4 type thermometer. Calibration frequency is once per 2 years;
- SOS pr-2b-2 stop-watch. Calibration frequency is once per 2 years;
- BAMM-1 barometer aneroid. Calibration frequency is once per 2 years.

Upon verification (calibration), the certificate of technical serviceability of the device is issued.

B.1.3. Involvement of Third Parties

SE «Kharkivstandardmetrology».
State Enterprise «Kharkivstandardmetrology» is an enterprise performing state verification and calibration of gas analyzers.

[4]Electrical apparatus for the detection and measurement of combustible gases. General requirements and test methods.
[5] "Rubber and Rubber-fabric Planes"
[6] "Sealing Stuffing"
[7] "Dishevelled flax. Specifications"

B.2. Data collection (consolidated data for the whole monitoring period)

B.2.1. The operational and management structure that the project operator will apply in implementing the monitoring plan.

Coordination of activities of all departments and services of PJSC "Poltavagaz" relating to the JI project implementation is done by the Work Team created pursuant to Order No.29/1 of PJSC "Poltavagaz" management board as of 07/02/2005. The new line-up of the Work Team is approved by Order No. 352 of the Chairman of PJSC "Poltavagaz" Board dated 10/11/2011. The structure of the Work Team is shown in Figure 9.

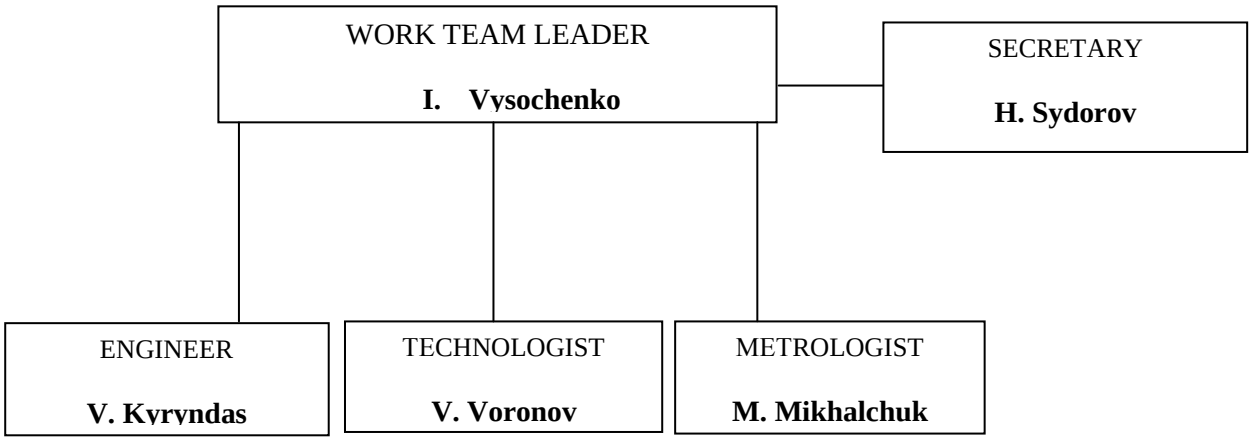

Figure 9. Structure of the Work Team

I. Vysochenko - Work Team Leader shall determine the plan of project activities and the amount of resources required;
V. Kyryndas - Work Team Engineer is responsible for organization of monitoring measurements of leaks and their repair;
V. Voronov - Work Team Technologist is responsible for collection of all information under the monitoring plan and conduction of all necessary calculations;
H. Sydorov - Work Team Secretary is responsible for storage, archiving and backuping of project information;
M. Mikhalchuk - Work Team Metrologist shall ensure the availability of verified metering devices and technical support.

B.2.2. List of parameters used in calculation

The parameters used in calculation are provided in Table 3 below.

Table 3. Parameters used in GHG emissions calculation

ID number	Data variable	Source of data	Data unit	Form of representation of obtained data	Comment
1. i	Sequence number of GDP (CGDP) gas equipment, gas fittings of gas pipeline where methane leak is detected , repaired and then checked	Activity on leak measurements	Dimensionless	Electronic	Each leak detected is tagged with a corresponding number. A list of gas equipment, shut-off devices (bolts, taps, valves), flanged and threaded joints is provided in Supporting document 1 to the PDD version 03. Verification is conducted before repair.
2. Ti	Time	Records of investigation results	Time (hours) when relevant unit of equipment where methane leak was detected was in operation during a year	Electronic	Time (hours) of equipment operation during a year before the moment of its repair (replacements)
3. Date	Date	Data of repair (reconstructions) and monitoring	Date of repairs (reconstruction) and monitoring	Electronic	Date when equipment was repaired used together with the number of hours of equipment operation to determine the total number of hours of operation. In the case of repeated leaks the date is the date of last inspection that showed no leaks
4. GWP_{CH4}	Global Warming Potential for methane	IPCC	tCO_2e/ tCH_4	Electronic	The Project developer will perform monitoring of any changes in the Global Warming Potential for methane, published by IPCC and agreed upon by the COP
5. $F_{CH4,i}$	Methane leak rate for each detected leak	Activity on leak measurements	m^3CH_4/h	Electronic	The parameter is calculated with application of the maximum value of device error (10% for gas analyzer)
6. t	Gas temperature	Data of measuring by the mercury-in-glass thermometer of TL-4 type	$^{\circ}C$	Electronic	The parameter is measured to determine of CH_4 density

ID number	Data variable	Source of data	Data unit	Form of representation of obtained data	Comment
7. P	Gas pressure	Data of measurements by the barometer-aneroid BAMM-1 or B-67	MPa	Electronic	The parameter is measured to determine of CH_4 density
8. URi	The uncertainty range for the measurement method applied to leak *i*	Information of producers and/or IPCC GPG	%	Electronic	The parameter is estimated where possible, at a 95% confidence interval, consulting the guidance provided in chapter 6 of IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories, 2000. If the producer of leak measuring equipment report an uncertainty range without specifying a confidence interval, a confidence interval of 95% may be assumed
9. *Vbag*	Tank capacity	Data of flow meter measurements	m^3	Electronic	Tank is filled with water. Amount of water measured by flow meter will make tank capacity Measurement showed that tank capacity is 0.11 m^3.
10. $w_{sampleCH4,i}$	Methane concentration in a tank	Data of gas analyzer EX - TEC® SR5 or EX - TEC® HS 680 or Variotec 8-EX measurements	%	Electronic	Concentration of methane in sample (the tank) of leak is the difference between the concentration of methane in a tank at the beginning and in the end of measuring. The concentration is measured by means of gas analyzers EX - TEC®SR5 (EX - TEC® HS680 or Variotec 8-EX).
11. τ_i	Time during which methane concentration reaches a certain level	Data of stop-watch "SOS pr-2b-2" measurements	seconds	Electronic	Time during which the concentration of methane in a tank reaches a certain level is determined by means of stop-watch. Measuring begins from the moment of opening of faucet on a lid of the tank and ends in 180 seconds.

B.2.3. Data related to leakage

There is no leakage during the project implementation (the JI-specific approach based on the approved methodology AM0023 Version 4.0, as well as methodology AM0023 Version 4.0 itself, does not provide for leakage).

B.3. Data processing and archiving

All data will be processed and archived in electronic and/or paper form and kept till 31/12/2019.

B.4. Emergency situations and technological breakdowns

There were no emergency situations in the current monitoring period (from 01/01/2008 to 31/03/2012) at gas distribution networks of PJSC "Poltavagaz".

B.5. Procedures for detection and liquidation of malfunctions at gas distribution points and gas distribution networks of PJSC "Poltavagaz".

The detection, elimination and registration of failures and emergencies at shut-off stations of PJSC "Poltavagaz" are carried out according to the Gas Supply Safety Rules of Ukraine.

B.6. External data (type, source, access)

The following external data are used for monitoring:

Data/Parameter	GWP_{CH4},
Data unit	tCO_2e/tCH_4
Description	Global Warming Potential for methane
Time of determination/monitoring	Permanent
Source of data (to be) used	IPCC
Value of data applied (for ex ante calculations/determinations)	21
Justification of the choice of data or description of measurement methods and procedures (to be) applied	-
QA/QC procedures (to be) applied	The person responsible for monitoring checks the data annually.
Any comment	The Project developer will perform monitoring of any changes in the Global Warming Potential for methane, published by IPCC **(IPCC Second Assessment Report: Climate Change 1995 (SAR))** and agreed upon by the COP. The value of GWP for methane is provided on the UNFCCC web-site: http://unfccc.int/ghg_data/items/3825.php

Data/Parameter	URi
Data unit	%

Description	The uncertainty range for the measurement method applied to leak *i*
Time of determination/monitoring	Annually
Source of data (to be) used	IPCC
Value of data applied (for ex ante calculations/determinations)	95%
Justification of the choice of data or description of measurement methods and procedures (to be) applied	Methodology of AM0023 version 4.0
QA/QC procedures (to be) applied	The person responsible for monitoring checks the data annually
Any comment	The parameter is estimated where possible, at a 95% confidence interval, consulting the guidance provided in chapter 6 of IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories[9], 2000. If the producer of leak measuring equipment report an uncertainty range without specifying a confidence interval, a confidence interval of 95% may be assumed

B.7. Level of measuring equipment error

Relative error of Variotec ® 8-EX gas analyzer is 10%, which complies with EN 50054/57 standard. The device is calibrated annually.

[9] IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories, 2000: http://www.ipcc-nggip.iges.or.jp/public/gp/english/6_Uncertainty.pdf

Section C. Quality assurance and quality control measures

C.1. Documented procedures and management structure

C.1.1. Roles and responsibilities

Chief Engineer of PJSC «Poltavagaz» I. Vysochenko performs the project management. He manages and coordinates the activity of all departments. Special Work Team is responsible for collection and processing of parameters.
The structure of data collection and Project management is given in Section B.2 of this Monitoring Report.

C.1.2. Trainings

Special trainings for personnel are not necessary to operate new equipment. All trainings concerning the project were provided by equipment suppliers and their cost is included into the cost of equipment.

C.2. Internal audits and control measures

Under the guidance of the special Work Team PJSC "Poltavagaz" formed a team for measurement of all necessary parameters provided for by the methane leak monitoring plan.
Monitoring measurements are performed by specially trained personnel according to the Measurement methodology. Data on monitoring measurements are recorded in paper form during the measurements. Then, on the basis of paper data the unified electronic leak monitoring database is formed.

Current repairs of gas equipment GDP (CGDP) and gas fittings of gas distribution networks are conducted once per year, and maintenance is performed once per half-year.

The repaired units are inspected on a regular basis as part of standard monitoring programme to ascertain that they do not become leak sources again.

C.3. Data relating to ecological and social impact

The project implementation will lead to better quality of gas supply of the region population.
In addition, the project will reduce natural gas losses and lower GHG emissions that cause greenhouse effect and climate change. Safety level of gas pipelines operation will increase.

Section D. Calculation of greenhouse gases emission reductions

D.1. Project emissions

When using the leak-proof bag method of leak measurement, the project methane leaks from one leak point *i* is calculated by the following formula:

$F^{+}_{CH4,i,P} = V_{bag} * w_{sampleCH4,i} * 3600 / \tau_i$ where (1)

$F^{+}_{CH4,i,P}$ - project methane leak rate (volume) through leaky piece of equipment i after the repair (replacement), m³/h;
V_{bag} - volume of a leak-proof bag for measurement, m³;
$w_{sampleCH4,i}$ - methane concentration in a leak sample *i* that is the difference of concentrations at the beginning and at the end of measurement, %;
τ_i - time for bag filling for leak *i* after the repair (replacement), seconds.

Adjustment of methane leak rate (volume) to normal conditions:
Methane leak rate (volume) obtained as a result of measurements is adjusted to normal conditions ($P_н$ = 0.1013 MPa, $T_н$ = 273 K) in accordance with the following formula:

$$F_{CH_4,i,P} = \frac{F^{+}_{CH_4,i} \cdot 273 \cdot P}{0{,}1013 \cdot (273+t)}, \text{ where} \quad (2)$$

$F_{CH_4,i,P}$ – project methane leak rate (volume) (after the repair, replacement) for piece of equipment *i*, adjusted to normal conditions, m^3/h;
$F^{+}_{CH4,i}$ - methane leak rate (volume) through leaky piece of equipment *i* after the repair (replacement), m³/h;
P – gas pressure in the tank, MPa;
t – gas temperature in the tank, °C.

Annual methane leakages shall be calculated by the formula:

$Q_{yP} = ConvFactor * \Sigma[F_{CH4P} * T_{i,y} * UR_i)] * GWP_{CH4} * 0.9,$ where (3)

Q_{yP} - project methane emissions in period *y* for equipment that was repaired (replaced), t CO_2e;
ConvFactor - m³ CH_4 to t CH_4 conversion factor under normal conditions (0 °C and 101.3 kPa). It equals to 0.0007168 t CH_4/m³ CH_4;
UR_i - uncertainty range for the measurement method (95%);
$T_{i,y}$ - time (in hours) for piece of equipment *i* that operated during the period (monitoring period) *y*;
GWP_{CH4} - Global Warming Potential for methane (21 tCO_2e/tCH_4);

0.9 - coefficient that accounts for inaccuracy of metering device.

Estimated project emissions are given in Table 4[8].

Table 4. Project emissions, t CO_2e

	2008	2009	2010	2011	01/01/2012 – 31/03/2012
Project GHG emissions for the period, tCO_2e.	189 281	198 388	199 537	199 537	49 201
Total project GHG emissions for the monitoring period, tCO_2e.	**835 944**				

D.2. Baseline emissions

When using the leak-proof bag method of leak measurement, baseline methane leak volumes from one unit of equipment can be calculated in accordance with the following formula:

$$\bar{F}_{CH_4,i,B} = V_{bag} * w_{sampleCH4,i} * 3600 / \tau_i \quad (3)$$ where

$\bar{F}_{CH_4,i,B}$ - baseline methane leak rate (volume) through leaky piece of equipment i before the repair (replacement), m³/h;
V_{bag} - volume of a leak-proof bag for measurement, m³;
$w_{sampleCH4,i}$ - methane concentration in a leak sample that is the difference of concentrations at the beginning and at the end of measurement, %;
τ_i - average time for bag filling for leak i before its repair (replacement), seconds.

Methane leak rate (volume) obtained as a result of measurements is adjusted to normal conditions ($P_н$ = 0,1013 MPa, $T_н$ = 273 K) in accordance with the following formula:

[8] The presented values of project GHG emission are approximated to integers.

$F_{CH_4,i,B} = \frac{\bar{F}_{CH_4,i} \cdot 273 \cdot P}{0{,}1013 \cdot (273+t)}$, where (5)

$F_{CH_4,i,B}$ – baseline methane leak rate (volume) for element *i*, adjusted to normal conditions (before the repair, replacement), m^3/h;

$\bar{F}_{CH_4,i}$ – methane leak rate (volume) through leaky piece of equipment *i* before the repair (replacement), m^3/h;

P – gas pressure in the tank, MPa;

t – gas temperature in the tank, °C.

Annual baseline methane leaks are calculated in accordance with the following formula:

$Q_{yB} = ConvFactor * \Sigma[F_{CH4Y} * Ti,y * (1 - UR_i)] * GWP_{CH4} * 0.9$ where (6)

Q_{yP} - baseline methane emissions at gas equipment in the period *y* (before its repair, replacement), tCO_2e;

ConvFactor - m^3 CH_4 to t CH_4 conversion factor under normal conditions (0 °C and 101.3 kPa). It equals to 0.0007168 t CH_4/m^3 CH_4;

URi - uncertainty range for the measurement method applied to leak *i (*equal 95%);

$T_{i,y}$ - time (in hours) for piece of equipment *i* that operated during the period (monitoring period) *y* before the repair (replacement);

GWP_{CH4} - Global Warming Potential for methane (21 tCO_2e/tCH_4);

0.9 - coefficient that accounts for inaccuracy of metering device.

Emissions that would have taken place in the absence of repairs or replacement are provided in Table 5[9].

Table 5. Baseline emissions, t CO_2e

	2008	2009	2010	2011	01/01/2012 – 31/03/2012
Baseline GHG emissions for the period, tCO_2e.	1 099 368	1 141 248	1 146 543	1 146 543	282 709
Total baseline GHG emissions for the	**4 816 411**				

[9] The presented values of baseline GHG emission are approximated to integers.

monitoring period, tCO_2e.	

D.3. Leakage

There is no leakage during the project implementation (the JI-specific approach based on the approved methodology AM0023 Version 4.0, as well as methodology AM0023 Version 4.0 itself, does not provide for leakage).

D.4 Emission reductions as a result of JI project implementation for the current period (January 2008 - March 2012).

Emission reductions as a result of project implementation are calculated as the difference between baseline and project emissions.

The quantity of Emission Reduction Units (ERUs) in t CO_2e is calculated under the formula:

$$ERU = \sum[Q_{yB} - Q_{yP}] \quad \text{, where} \qquad (7)$$

ERU– Emission Reduction Units, tCO_2e;
Q_{yP} – project emissions, tCO_2e;
Q_{yB} – baseline emissions, tCO_2e.

Emission reductions for the current monitoring period (January 2008 - March 2012) due to project implementation are provided in Table 6[10].

Table 6. GHG emission reductions

	2008	2009	2010	2011	01/01/2012 – 31/03/2012
GHG emission reductions for the period, tCO_2e.	910 087	942 860	947 006	947 006	233 508
Total GHG emission reduction for the monitoring period, tCO_2e.	**3 980 467**				

[10] The presented values of GHG emission reductions are approximated to integers.