JI PROJECT ANNUAL MONITORING REPORT

Monitoring period 15.09.2008 – 30.09.2012

WASTE HEAP #1, #2, #3 AND #5 DISMANTLING OF FRUNZE MINE WITH THE AIM OF DECREASING GREENHOUSE GASES EMISSION INTO THE ATMOSPHERE

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2012

WASTE HEAP #1, #2, #3 AND #5 DISMANTLING OF FRUNZE MINE WITH THE AIM OF DECREASING GREENHOUSE GASES EMISSION INTO THE ATMOSPHERE

INITIAL AND FIRST PERIODIC ANNUAL JI MONITORING REPORT

Version 2.0

24 of October 2012

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SECTION A. General project activity information

A.1 Title of the project activity:

WASTE HEAP #1, #2, #3 AND #5 DISMANTLING OF FRUNZE MINE WITH THE AIM OF DECREASING GREENHOUSE GASES EMISSION INTO THE ATMOSPHERE

Sectoral scope: 8. Mining/mineral production
Version 2.0
from 24/10/2012

A.2. JI registration number:

UA1000450

A.3. Short description of the project activity:

Proposed project provides a complete dismantling of the waste heap of PE "SPETSMONTAZH FC" followed by reclamation of the land by restoring the fertile layer. During waste heap dismantling the rock mass will be demounted and beneficated at the benefication plant of Yasenivsky urban village with a goal of receiving coal concentrate, which is further supplied to the boilers and to local consumers for burning as fuel. Thus, the rock mass of the dump will be fully utilized, and the received coal will replace coal, which must be produced through mining. Processing of these waste heaps will avoid its burning, improve ecological situation in the region, significantly reduce CO_2 emissions and other harmful substances. Sorting of waste heaps will reduce the likelihood of groundwater contamination, will increase the area of land for agricultural activities and for other purposes. Also, will be obtained an extra amount of coal that does not need mining, thus it is possible to avoid leakages of methane, which is accompanied by coal mining. Emission reductions can be sold as ERUs in global emissions trading.

A.4. Monitoring period:

- Monitoring period starting date: 15/09/2008 at 00:00
- Monitoring period closing date: 30/09/2012 at 24:00

A.5. Methodology applied to the project activity (incl. version number):

The JI specific approach is used for the monitoring of emission reductions in accordance with the JI "Guidance on Criteria for Baseline Setting and Monitoring", Version 03.

A.5.1. Baseline methodology:

The baseline for a JI project should be brought into compliance with Annex B to Decision 9/CMP.1 ("Guidelines for the implementation of Article 6 of the Kyoto Protocol")[1], and according to the "Guidance On Criteria For Baseline Setting And Monitoring" Version 03[2] (hereinafter - the "Guidelines") issued by the supervisory JI (JISC).
Baseline emissions come from two major sources:
- Carbon dioxide emissions that caused due to combustion of steam coal. These are calculated as emissions due to combustion of coal received through mining in the equivalent of the amount of coal that is extracted from the waste heaps in the project scenario. This emission source is also present in the project scenario and the emissions are assumed to be equal in both project and baseline scenario.

[1] http://unfccc.int/resource/docs/2005/cmp1/eng/08a02.pdf
[2] http://ji.unfccc.int/Ref/Documents/Baseline_setting_and_monitoring.pdf

Therefore, this emission source is not included into consideration both in the project and the baseline scenario.

- Carbon dioxide emissions from burning of waste heaps. These emissions are calculated as emissions of carbon dioxide generated by burning coal dumps, the equivalent amount of coal extracted from the rock dump in the project scenario, adjusted for the probability of burning dumps at any time;

As the baseline suggests that the current situation is preserved regarding the waste heaps burning, it is assumed that for any given waste heap, actual burning will occur in some point in time. This probability of burning is established by the study[3] that assessed the status of all existing waste heaps in Donetsk Region historically. Based on the gathered data it is concluded that 78% of all waste heaps in Luhansk Region have been, or are now, on fire.

Leakage - is the net change of anthropogenic emissions by sources and/or removals by sinks of GHGs which occurs outside the project boundary, and that can be measured and is directly attributable to the JI project.

The result of the implementation of this project will net change in emissions of methane associated with coal mine production and the change in emissions of carbon dioxide associated with additional consumption of electricity at coal mine. Also taken into account carbon dioxide emissions associated with electricity consumption at the benefication plant in process of coal benefication in the project. Those emissions are considered in the project as leakages (see Section B.2.5.).

A.5.2. Monitoring methodology:

A JI-specific monitoring approach was developed for this project in line with the JI "Guidance on Criteria for Baseline Setting and Monitoring", Version 03.

The proposed project is aimed at reducing anthropogenic emissions. Emission reductions created by:

- Eliminate sources of greenhouse gases associated with burning waste heaps, by extracting coal from the rock dumps;
- Reduce uncontrolled emissions of methane due to replacement of coal that would have been extract mine way;
- Reduce electricity consumption due to benefication of coal, received at waste heap dismantling in comparison with electricity consumption at coal mine.

The following parameters are monitored:

- Amount of diesel fuel that has been used for the project activity in the relevant period ;
- Amount of coal that has been extracted from the waste heap and combusted for energy use in the project activity in the relevant period which is equal to the amount of coal that has been mined in the baseline scenario and combusted for energy use.

A.6. Status of implementation including time table for major project parts:

The project has started on 18/08/2008.

Start of producing part of dump dismantling – 15/09/2008

Letters of Approval were issued by both Parties involved:

Letter of Approval from SEIA of Ukraine #3082/23/7 from 18/10/2012

Letter of Approval from foreign country (Latvia) # 12.2-02/13625 from 12/10/2012

A.7. Intended deviations or revisions to the registered PDD:

There are no deviations to the PDD. This JI project was made publicly available on the UNFCCC website. The full text of PDD could be found at:

http://ji.unfccc.int/JIITLProject/DB/YZAHJQJ68LBD2OWMM4GLKO7H5C7SMZ/detail

The actual reduction in the monitoring report does not differ from predictions in the registered PDD.

[3] Report on the fire risk of Donetsk Region's waste heaps, Scientific Research Institute "Respirator", Donetsk, 2012.

Table 1 – Comparison of emissions reduction

Value:	Data in PDD	Data in this report
Emissions reduction in 2008, tCO_2e	846644	846644
Emissions reduction in 2009, tCO_2e	2464463	2464463
Emissions reduction in 2010 , tCO_2e	2497415	2497415
Emissions reduction in 2011 , tCO_2e	2458641	2458641
Emissions reduction in 2012 , tCO_2e	2461822	1845827
Total for 2008-2012	**10 728 985**	**10 112 990**

Monitoring period in 2012 is covereing 9 months. Thus, emission reduction in 2012 and the total emission reduction in the monitoring report is less than in the PDD (see Table 1)

A.8. Intended deviations or revisions to the monitoring plan:

There are no deviations in the monitoring plan.

A.9. Changes since last verification:

Not applicable.

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

PE "SPETSMONTAZH FC"

- Foltz Andriy, Director;
- Kuzmenko Ivan, "ALTA-KOM" LTD. Production Manager
- Klimenko Igor, "TESEY LTD" Ltd manager of TCD

SIA "Vidzeme Eko"

- Klavinsh Gints, JI Project Manager;
- Stah Yuriy, JI Consultant.

SECTION B. Key monitoring activities according to the monitoring plan for the monitoring period stated in A.4.

For the monitoring period stated in A.4, the following parameters have to be collected and registered:

1. Amount of diesel fuel that has been used for the project activity in the relevant period.

To determine this parameter the commercial data of company are used. To confirm the consumed amount of fuel checks and other accounting documents are used. The fuel consumption, which is related to a project activity, is taken into account. Information summary report is based on accounts .In the industrial site there is not any additional equipment, but if such equipment is used, fuel consumption of this equipment is also considered. If the data in these documents are in litres instead of tonnes, these data must be converted using factor of 0.85 kg/l. For purpose of control a theoretical calculation of diesel fuel consumption is made on basis of technical specifications and actual record of machinery work.

2. Amount of coal that has been extracted from the waste heaps and combusted for energy use in the project activity in the relevant period which is equal to the amount of coal that has been mined in the baseline scenario and combusted for energy use.

To determine this parameter the commercial data of company are used. To confirm the amount of coal checks and documents from customers are used. Taken into account and refers to the project activity only product which delivered to the customer. Weighing takes place on site using certified scales VA-60E Regular cross-inspections with customers are executed. Information of summurized reports is based on these delivery data.

B.1. Monitoring equipment

For the measurement in the project the equipment is used, listed in Table 2, Section B.1.2.

B.1.2. Table providing information on the equipment used (incl. manufacturer, type, serial number, date of installation, date of last calibration).

Table 2 - Equipment used for monitoring

ID	Parameter	Measuring instrument	Unit	Manufacturer	Type	Serial number	Accuracy class	Date of installation.	Date of calibration.
3	Amount of coal	Automobile scales VA-60E-1	t	"Vesoprostor" Ltd	Automobile scales electronic-tensometric	0128	± 25кг	03/07/2008	15/08/2009 28/09/2010 23/11/2011

B.1.3. Calibration procedures:

Table 3 - Procedures for calibration devices

Name of device	**QA/QC procedures**	**Body responsible for calibration and certification**
Automobile scales VA-60E-1	12 months	SE “Luhanskstandartmetrologiya”

B.1.4. Involvement of Third Parties:

Centers of metrology and standardization:
SC “Luhanskstandartmetrologiya”
Contractors of waste heap dismantling:
“TESEI LTD” Ltd
Contractors of coal benefication, conducting the chemical analysis and the landlord of weighing:
“ALTA-KOM” Ltd.
Expert reports
Scientific Research Institute of Mine-Rescue and Fire Safety“Respirator”, Licenced designer EIA PE Rytikova (License AB № 294301).

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

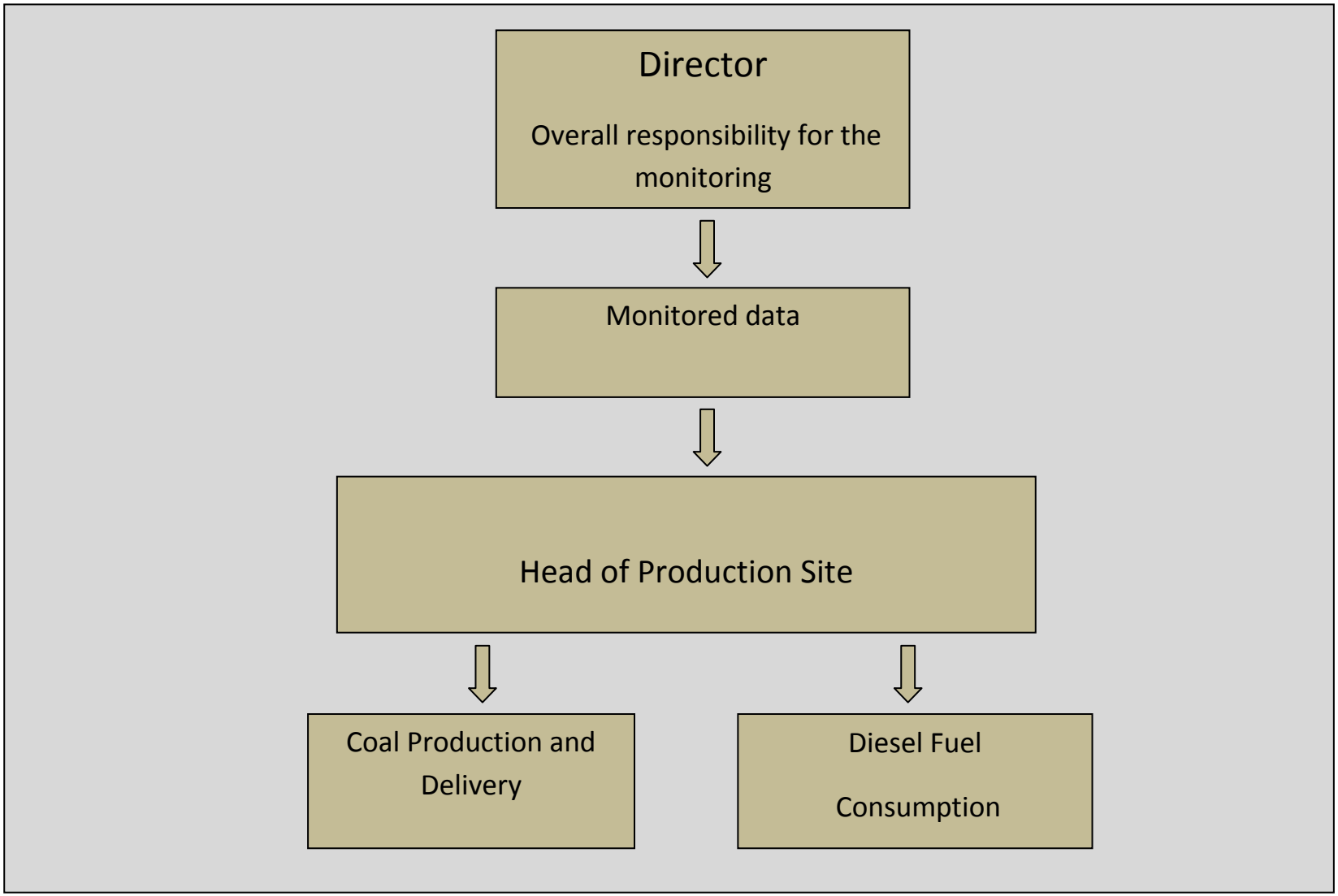


Figure 1 Data collection

B.2.1. List of fixed default values and ex-ante emission factors:

Table 4 - The list of constants and coefficients used in the emissions calculating

Data / Parameter	***Data unit***	***Description***	***Data Source***	***Value***	***Uncertainty level of data***
GWP_{CH4}	tCO_2/ tCH_4	Global Warming Potential of Methane	IPCC Second Assessment Report [4]	21	Low
$\rho\ CH_4$	t/m^3	Methane density	Standard (at room temperature 20°C and 1 ATM)[5]	0.000668	Low
NCV_{Coal}	TJ/kt	Net Calorific Value of coal	National Inventory Report of Ukraine 1990- 20106, p. 456, 462, 468	2008-21.5 2009-21.8 2010-21.6 2011-21.6 2012-21.6	Low
NCV_{Diesel}	TJ/kt	Net Calorific Value of diesel fuel	National Inventory Report of Ukraine 1990- 2010, p. 473, 476, 479	2008-42.2 2009-42.3 2010-42.5 2011-42.5 2012-42.5	Low
$OXID_{Coal}$	D/l	Carbon Oxidation factor of coal	National Inventory Report of Ukraine 1990- 2010, p. 459, 465, 471	2008-0.963 2009-0.963 2010-0.962 2011-0.962 2012-0.962	Low
$OXID_{Diesel}$	D/l	Carbon Oxidation factor of diesel fuel	National Inventory Report of Ukraine 1990- 2010, p. 475, 478, 481	2008-0.99 2009-0.99 2010-0.99	Low

[4] http://ji.unfccc.int/JI_Projects/DB/P1QYRYMBQCEQOT0HOQM60MBQ0HXNYU/Determination/Bureau%20Veritas%20Certification1266348915.6/viewDeterminationReport.html

[5] http://www.engineeringtoolbox.com/gas-density-d_158.html

[6] http://unfccc.int/files/national_reports/annex_i_ghg_inventories/national_inventories_submissions/application/zip/ukr-2012-nir-13apr.zip

				2011-0.99 2012-0.99	
K^c_{coal}	tC/TJ	Carbon content of coal	National Inventory Report of Ukraine 1990- 2010, p. 464, 470	2008-25.95 2009-25.97 2010-25.99 2011-25.99 2012-25.99	Low
K^c_{Diesel}	tC/TJ	Carbon content of diesel fuel	National Inventory Report of Ukraine 1990- 2010 p. 474, 477, 480	2008-20.2 2009-20.2 2010-20.2 2011-20.2 2012-20.2	Low
EF_{CH4}	m^3/t	Emission factor for fugitive methane emissions from coal mining.	National Inventory Report of Ukraine 1990- 2009[7], p. 90	25.67	Low
$EF_{CO2,EL}$	tCO_2/MWh	Specific carbon dioxide emissions due to production of electricity at TPP and by its consumption	Order of State Environmental Investments Agency № 63, 43, 75 http://www.neia.gov.ua/nature/doccatalog/document?id=127171, 127172, 126006, 127498	2008 – 1.219 2009 – 1.237 2010 – 1.225 2011 – 1.227 2012 – 1.227	Low
p_{WHB}	D/l	Probability of waste heap burning.	Report on the analyzing the fire danger of waste heaps in Luhansk region, Scientific Research Institute "Respirator", Donetsk, 2012. (The report will be provided to an independent expert organization).	0.78	Medium
$N^E_{B,Coal,y}$	MWh/t	Average electricity consumption per tonne of coal, produced in Ukraine in the year y	Fuel and energy resources of Ukraine, Statistical Yearbook, State Statistics Committee of Ukraine, Kiev, 2009-2011.[8].	2008 – 0.0878 2009 – 0.0905 2010 – 0.0926 2011 – 0.0905 2012 – 0.0905	Low
$N^E_{P,Coal,y}$	MWh/t	Average electricity consumption per tonne of coal at benefication plant in	Calculation the cost of electricity for the processing technology of rock on the benefication plant (See Annex 4 PDD)	0.015	Low

[7] http://unfccc.int/files/national_reports/annex_i_ghg_inventories/national_inventories_submissions/application/zip/ukr-2011-nir-08jun.zip
[8] http://www.ukrstat.gov.ua/

		the year y			

B.2.2. List of variables:

Table 5 - Project emissions variables to be monitored

ID (from PDD)	***Variable***	***Description***	***Data unit***	***Measured (m)*** ***Calculated (c)*** ***Estimated (e)***	***The frequency of recording***	***The data part subjected to monitoring***	***Type of data recording***	***Notes***	***Archiving of data***
P1	$FC_{PE,Diesel,y}$	Amount of diesel fuel, consumed in project in year y	t	*C*	Daily data are combined, preparing monthly and annual reports.	100%	Paper and electronic copy		At least two years after the last transfer of ERUs

Table 6 – Baseline emissions variables to be monitored

ID (from PDD)	***Variable***	***Description***	***Data unit***	***Measured (m)*** ***Calculated (c)*** ***Estimated (e)***	***The frequency of recording***	***The data part subjected to monitoring***	***Type of data recording***	***Notes***	***Archiving of data***
B1	$FC_{BE,Coal,y}$	Amount of coal that has been mined in the baseline scenario and combusted for energy use in year y	t	*C*	Yearly	100%	Paper and electronic copy	Equal to amount of coal, extracted from dump in project scenario	At least two years after the last transfer of ERUs

B2.3. Data concerning GHG emissions by sources of the project activity:

Table 7 – Consumption of diesel fuel

	Diesel fuel, $FC_{PE,Diesel,y}$,l				
	2008	2009	2010	2011	2012
January		266102	273896	271509	282131
February		272755	280743	278297	294955
March		269429	277320	274903	256483
April		296039	304709	302054	269307
May		282734	291014	288478	307780
June		282734	291014	288478	300085
July		279407	287591	285084	289826
August		289386	297862	295266	287261
September	537812	276081	284167	281690	277002
October	607961	269429	277320	274903	
November	631345	266102	273896	271509	
December	561195	276081	284167	281690	
Total	**2338313**	**3326279**	**3423699**	**3393861**	**2564830**

B.2.4. Data concerning GHG emissions by sources of the baseline:

Table 8 – Amount of coal concentrate obtained after benefication process.

	Coal concentrate, $FC_{BE,Coal,y}$, t				
	2008	2009	2010	2011	2012
January		57586.88	58251.60	57875.04	60231.60
February		59026.55	59707.89	59321.92	62969.40
March		58306.72	58979.75	58598.48	54756.00
April		64065.40	64804.91	64385.98	57493.80
May		61186.06	61892.33	61492.23	65707.20
June		61186.06	61892.33	61492.23	64064.52
July		60466.22	61164.18	60768.79	61874.28
August		62625.73	63348.62	62939.11	61326.72
September	110858.16	59746.39	60436.04	60045.35	59136.48
October	125317.92	58306.72	58979.75	58598.48	
November	130137.84	57586.88	58251.60	57875.04	
December	115678.08	59746.39	60436.04	60045.35	
Total	**481992.00**	**719836.00**	**728145.00**	**723438.00**	**547560.00**

B.2.5. Data concerning leakage:

Leakage is the net change of anthropogenic emissions by sources and/or removals by sinks of GHGs which occurs outside the project boundary, and that can be measured and is directly attributable to the JI project.

The result of the implementation of this project will be the net change in emissions of methane associated with coal mine production and the change in emissions of carbon dioxide associated with additional consumption of electricity at coal mine. As coal in the baseline scenario is only coming from mines it causes fugitive emissions of methane. These are calculated as standard country specific emission factor applied to the amount of coal that is extracted from the waste heaps in the project scenario (which is the same as the amount of coal that would have been mined in the baseline scenario. Source of the leakage are the fugitive methane emissions due to coal mining. These emissions are specific to the coal that is being mined. Coal produced by the project activity is not mined but extracted from the waste heap through the dismantling and sorting process. Therefore, coal produced by the project activity substitutes the coal would have been otherwise mined in the baseline. Coal that is mined in the baseline has fugitive methane emissions associated with it and the coal produced by the project activity does not have such emissions.

As reliable and accurate national data on fugitive CH_4 emissions associated with the production of coal are available, project participants used this data to calculate the amount of fugitive CH_4 emission as described in Section D.1.

Electricity consumption and related greenhouse gas emissions due to dismantling of waste heap to be taken into account in calculating the project emissions. Carbon dioxide emissions due to electricity consumption in the coal mine way in an amount, equivalent to the project quantity of coal - a leakage, that can be taken into account at base of the State Statistics Committee data, concerning specific consumption of electricity at coal mines in Ukraine in the relevant year. The corresponding calculation provided in Section D.1.

Theses leakages are directly attributable to the JI project activity according to the following assumption: the coal produced by the project activity from the waste heap will substitute the coal produced by underground mines of the region in the baseline scenario. This assumption is explained by the following logic: Energy coal market is demand driven as it is not feasible to produce coal without demand for it. Coal is a commodity that can be freely transported to the source of demand and coal of identical quality can substitute some other coal easily. The project activity cannot influence demand for coal on the market and supplies coal extracted from the waste heaps. In the baseline scenario demand for coal will stay the same and will be met by the traditional source – underground mines of the region. Therefore, the coal supplied by the project in the project scenario will have to substitute the coal mined in the baseline scenario. According to this approach equivalent product supplied by the project activity (with lower associated specific green-house gas emissions) will substitute the baseline product (with higher associated specific green-house gas emissions).

Energy consumption and related emissions of greenhouse gases in the benefication of coal extracted from waste heap, included in the calculation of leakage in the project scenario. Amount of electricity consumed in the process of benefication is calculated based on the balance of processing, in which it is calculated the quantity of coal grade A, obtained in the process of benefication of rock from the dump, and calculation the cost of electricity in the process with considering of all electrical equipment involved (see Annex 4 PDD).

Table 9 – Consumption of electricity in the process of benefication

	Electricity consumption, kWh				
	2008	2009	2010	2011	2012
January		337755	342209	340626	344846
February		346199	350765	349142	360520
March		341977	346487	344884	313496
April		375752	380708	378946	329171
May		358865	363597	361915	376195
June		358865	363597	361915	366790
July		354643	359320	357657	354250
August		367308	372153	370431	351116
September	678441	350421	355042	353399	338576
October	766933	341977	346487	344884	
November	796431	337755	342209	340626	
December	707939	350421	355042	353399	
Total	**2949744**	**4221936**	**4277616**	**4257824**	**3134960**

Amount of consumed electricity contained in the monthly acts of executed works of benefication plant of Yasenivsky urban village and coincides with the calculation.

B.2.6. Data concerning environmental impacts:

The full scope EIA in accordance with the Ukrainian legislation has been conducted for the benefication plant of Yasenivsky urban village by the project designer of EIA PE Rytikova (lisence AB # 294301).

Key findings of this EIA are summarized below:

- Impact on air is the main environmental impact of the project activity. Dust emissions due to the erosion and project activity such as loading and offloading operations of input rock and processed coal will be limited. Also emissions from transport will be present during the project operation stage. The impact will not exceed maximum allowable concentration at the edge of the sanitary zone;
- Impact on water is minor. The project activity will use water in a closed cycle without discharge of waste water. The possible discharge of the processed water will not have negative impact on the quality of water in the surface reservoirs;
- Impacts on flora and fauna are insignificant. The design documentation demands re-cultivation of the landscape. Grass and trees will be planted on the re-cultivated areas in order to prevent flora and fauna degradation. No rare or endangered species will be impacted. Project activity is not located in the vicinity of national parks or protected areas;
- Noise impact is limited. Main source of noise will be located at the minimum required distance from residential areas, mobile noise sources (automobile transport) will be in compliance with local standards;
- Impacts on land use are positive. Significant portions of land will be freed from the waste heaps and will be available for development. Fertile soil will be used to recultivate the land lot;

- Transboundary impacts are not observed. There are no impacts that manifest within the area of any other country and that are caused by a proposed project activity which wholly physically originates within the area of Ukraine.

B.3. Data processing and archiving (incl. software used):

All data will be archived electronic and paper. Data acquisition and processing procedure for each parameter monitored:

1. Amount of diesel fuel that has been used for the project activity in the relevant period.

In the monitoring of project emissions there are include the diesel fuel costs of working mining equipment on the dismantling of dump, the cost of diesel fuel when transporting rocks to the processing factory and while transporting the end products to the customer.

Receipts, invoices and acceptance certificates are used in order to confirm the amount of fuel consumed. The documents obtained are collected by the accounting and economics department on a monthly basis. The paper originals are bound into the special folder. Data on fuel usage and identification parameter of each individual document are logged into the electronic register that is maintained at the head office of the company. If the data in these documents are in litres instead of tonnes, these data must be converted using factor of 0.85 kg/l.[9] The IT and data storage system containing this information at the head office has back-ups and allows for reliable data storage with virtually no chance of data loss. This log is printed and binded as a reference into the same folder with the original documents. At the same time the responsible person (as per section C.1.1) maintains an independent account of the monitoring data. At the end of the month the
summarizing report is prepared containing the information on the monthly monitored data. This report is signed by the responsible person and is submitted to the director of the company. At the end of the year the annual summarizing report is prepared for all monitoring parameters containing monthly and annual figures. This report is submitted to the director of the company. These reports are kept in electronic form in the IT system of the company and in paper form with signatures of the responsible persons.

2. Amount of coal that has been extracted from the waste heaps and combusted for energy use in the project activity in the relevant period which is equal to the amount of coal that has been mined in the baseline scenario and combusted for energy use.

Bills of laden, receipts, invoices and acceptance certificates are used in order to confirm the amount of coal extracted. The documents are collected for every shipment or for the group of shipments by the responsible person. The documents obtained are collected by the accounting and economics department on a monthly basis. The paper originals are binded into the special folder. Data on the quantity of coal and identification parameter of each individual document are logged into the electronic register that is maintained at the head office of the company. The IT and data storage system containing this information at the head office has back-ups and allows for reliable data storage with virtually no chance of data loss. This log is printed and binded as a reference into the same folder with the original documents. At the same time the responsible person (as per section C.1.1) maintains an independent account of the monitoring data. At the end of the month the summarizing report is prepared containing the information on the monthly monitored data. This report is signed by the responsible person and is submitted to the director of the company. At the end of the year the annual summarizing report is prepared for all monitoring parameters containing monthly and annual figures. This report is submitted to the director of the company. These reports are kept in electronic form in the IT system of the company and in paper form with signatures of the responsible persons.

[9] http://elarum.ru/info/standards/gost-305-82/

B.4. Special event log:

All special and exceptional events (critical equipment failures, reconstruction works, emergencies etc.) are documented by the special notes to the management of the company. No such events were observed during the monitoring period.
The nature of the project and underlying operations does not foresee any factors that can cause unintended emissions due to emergencies. Possible emergencies can have impact on the continuation of operations (shutdowns) which will lead to a decreased number of ERUs which is, in turn, conservative.

SECTION C. Quality assurance and quality control measures

C.1. Documented procedures and management plan:

C.1.1. Roles and responsibilities:

Overall project management is realized by the director of PE "SPETSMONTAZH FC" by controlling and coordinating the activities of his subordinates, including the production manager. Daily management is realized directly at the facility by the production manager. He is also responsible for the proper recording of data. Primary accounting documents collected and prepared directly on the object. Data entered into the computer system, and primary documents submitted to the archive company. Information stored in the archives of the company in paper and electronic form. For each of the parameters the monthly and annual summary reports are prepared.

C.1.2. Trainings:

All technical staff of the company has yearly training according to safety requirements. Employees of the project company get regular safety briefings and trainings. Training includes safety instructions, fire protection, electric equipment safety, specific safety on coal enrichment facilities, and technology of operations. All those who had the trainings are required to pass an exam. Trainings and testing are provided either by the external training facility or in-house.

C.2. Involvement of Third Parties:

SC "Luhanskstandartmetrologiya", "TESEI LTD" Ltd, "ALTA-KOM" Ltd.,
Scientific Research Institute of Mine-Rescue and Fire Safety"Respirator", Licenced designer EIA PE Rytikova (License AB № 294301)

C.3. Internal audit and control measures:

Internal cross-checks and audits are performed for all of the data monitored as the raw documents used for monitoring are also used in the commercial dealings of the company. Director of the company reviews monthly and yearly reports and conducts selective cross-checks with the raw documents. For the fixed data and ex-ante parameters and factors the quality assurance requires to check that the data were acquired from the reliable (i.e. recognised and/or based on research), verifiable (data are open for access, or are available for the project participants) sources. For the external data that are used for the monitoring (as amount of diesel fuel that has been used for the project activity in the year y – when the fuel was used

by the third party) the following quality assurance procedure is established: the raw data on fuel usage are available as supplements or are directly mentioned in the invoices of the third party, the data are received by the accounting office of the company and are checked against the time sheets of the equipment that has been operating, the figures in the reports of the third party are checked against the invoices of this third party, periodical on-site checks are conducted by the management of the company to verify the amount of time and quantity of the equipment that was operating. A theoretical calculation the amount of electricity and diesel fuel is carried out , based on techno-economic data and consumption rates of appropriate equipment. If inconsistencies are found the dispute can be open between two parties and a thorough check of underlying workorders, receipts and other documentation of the third party can follow.

C.4. Troubleshooting procedures:

All exceptional and troubleshooting events are documented by internal notes. As the data monitored to calculate emission reductions are also used in the commercial dealings of the company and correlate to the coal restored during the operation of the facility no emission reductions can be earned if the unit is not in operation.

SECTION D. Calculation of GHG emission reductions

D.1. Table providing the formulas used:

Table 9 - The formulas used in calculations

Formula Number from PDD	***Formula***	***Formula description***
16	$ER_y = BE_y - PE_y - LE_y$,	Calculation of Emissions reduction
8	$BE_y = BE_{WHB,y}$	Baseline Emissions calculation
9	$BE_{WHB,y} = \frac{FC_{BE,Coal,y}}{1000} \cdot p_{WHB} \cdot NCV_{Coal} \cdot OXID_{Coal} \cdot K^c_{Coal} \cdot 44/12$	Calculation of Baseline Emissions due to burning of the waste heaps in the year *y*
6	$PE_y = PE_{Diesel,,y}$	Calculation of Project Emissions in the year y
7	$PE_{Diesel,y} = \frac{FC_{PE,Diesel,y}}{1000} \cdot NCV_{Diesel} \cdot OXID_{Diesel} \cdot K^c_{Diesel} \cdot 44/12$	Calculation of Project Emissions due to consumption of diesel fuel by the project activity in the year y
10	$LE_y = LE_{B,y} + LE_{P,y}$	Calculation of Leakages in year y
11	$LE_{B,y} = LE_{CH4,y} + LE_{B,EL,y}$	Calculation of Leakages in baseline scenario in year y
12	$LE_{CH4,y} = -FC_{BE,Coal,y} \cdot EF_{CH4} \cdot \rho_{CH4} \cdot GWP_{CH4}$	Calculation of Leakages due to fugitive emissions of methane in the mining activities in the year y
13	$LE_{B,EL,y} = -FC_{BE,Coal,y} \cdot N_{B,}{}^{E}{}_{Coal,y} \cdot EF_{CO2,EL,y}$	Calculation of Leakages due to consumption of electricity in the mining activities in the year y
14	$LE_{P,y} = LE_{P,EL,y}$	Calculation of Leakages in project scenario in year y
15	$LE_{P,EL,y} = FC_{BE,Coal,y} \cdot N_{P,}{}^{E}{}_{Coal,y} \cdot EF_{CO2,EL}$	Calculation of Leakages due to consumption of electricity from grid during benefication in year y

Additionally in the formulas:

Table 10 – Parameters in formulas

Parameter	***Data unit***	***Description***
ER_y	tCO_2	Emissions reduction of the JI project in year y
BE_y	tCO_2	Baseline Emissions in year y
PE_y	tCO_2	Project Emissions due to project activity in the year y
LE_y,	tCO_2	Leakages in the year y
$LE_{B,y}$	tCO_2	Leakages in baseline scenario in year y
$LE_{P,y}$	tCO_2	Leakages in project scenario in year y
$BE_{WHB,y}$	tCO_2	Baseline Emissions due to burning of the waste heaps in the year *y*
$PE_{Diesel,y}$	tCO_2	Project Emissions due to consumption of diesel fuel by the project

		activity in the year y
$LE_{P,EL,y}$	tCO_2	Leakages due to consumption of electricity from grid during benefication in year y
$LE_{CH4,y}$	tCO_2	Leakages due to fugitive emissions of methane in the mining activities in the year y
$LE_{B,EL,y}$	tCO_2	Leakages due to consumption of electricity in the mining activities in the year y
$FC_{BE,Coal,y}$	t	Amount of coal that has been mined in the baseline scenario and combusted for energy use in year y

Parameters in the formulas are as per Sections B.2.1 - B.2.4 of this report.
The coefficient 44/12 in the equations above is the ratio of the molecular weight of CO2 (44) and the molecular weight of C (12) and is used to convert carbon emissions into carbon dioxide emissions.

D.2. Description and consideration of measurement uncertainties and error propagation:
All measurement uncertainties and error propagation of the measured parameters are according to the manuals of equipment manufacturers. Uncertainty level of the fixed values and external data is low as they are taken from reliable and publicly available, verifiable sources.

D.3. GHG emission reductions (referring to A.7. of this document):

D.3.1. Project emissions:

Parameter	**Unit**	2008	2009	2010	2011	2012	Total
Project emissions	tCO_2	13111	36973	37358	37202	28315	152959

D.3.2. Baseline emissions:

Parameter	**Unit**	2008	2009	2010	2011	2012	Total
Baseline emissions	tCO_2	665035	1936804	1956771	1936544	1454160	7949314

D.3.3. Leakage:

Parameter	**Unit**	2008	2009	2010	2011	2012	Total
Leakages	tCO_2	-194720	-564632	-578002	-559299	-419982	-2316635

D.3.4. Summary of the emissions reductions during the monitoring period:

Parameter	**Unit**	2008	2009	2010	2011	2012	Total
Emissions reduction	tCO_2	846644	2464463	2497415	2458641	1845827	**10 112 990**

WASTE HEAP #1, #2, #3 AND #5 DISMANTLING OF FRUNZE MINE WITH THE AIM OF DECREASING GREENHOUSE GASES EMISSION INTO THE ATMOSPHERE

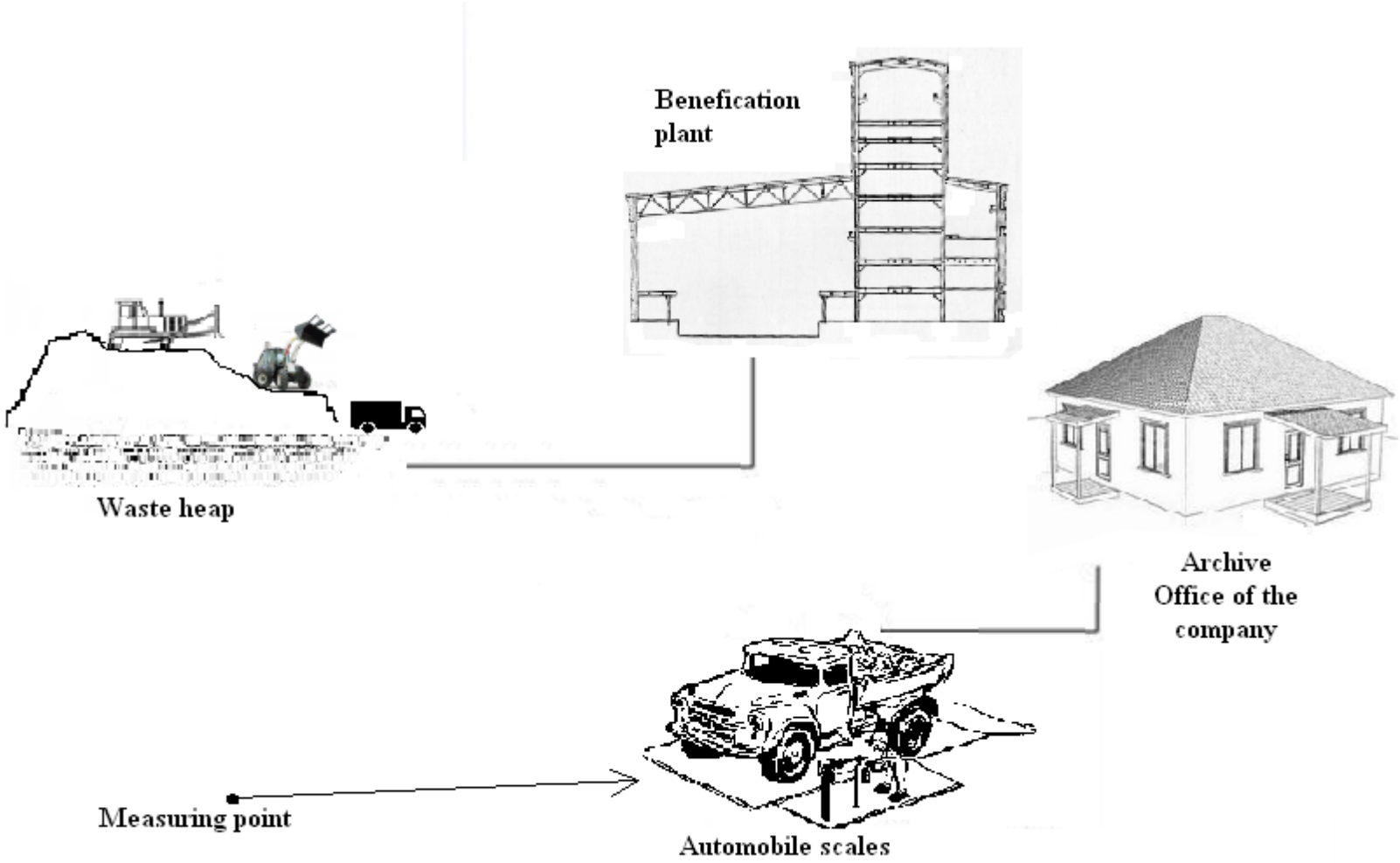
Annex 1

Definitions and acronyms

Acronyms and Abbreviations	
CH4	METHANE
CO2	CARBON DIOXIDE
GHG	GREENHOUSE GASES
GWP	GLOBAL WARMING POTENTIAL
IPCC	INTERGOVERMENTAL PANEL ON CLIMATE CHANGE
PDD	PROJECT DESIGN DOCUMENT
ERU	EMISSION REDUCTION UNIT
Definitions	
Baseline	The scenario that reasonably represents what would have happened to greenhouse gases in the absence of the proposed project, and covers emissions from all gases, sectors and source categories listed in Annex A of the Protocol and anthropogenic Removals by sinks, within the project boundary.
Emissions reductions	Emissions reductions generated by a JI project that have not undergone a verification or determination process as specified under the JI guidelines, but are contracted for purchase.
Global Warming Potential (GWP)	An index that compares the ability of greenhouse gases to absorb heat in the atmosphere in comparison to carbon dioxide. The index was established by the Intergovernmental Panel of Climate Change.
Greenhouse gas (GHG)	A gas that contributes to climate change. The greenhouse gases included in the Kyoto Protocol are: carbon dioxide (CO_2), Methane (CH_4), Nitrous Oxide (N_2O), Hydrofluorcarbons (HFCs), Perfluorcarbons (PFCs) and Sulphurhexafluoride (SF_6).
Joint Implementation (JI)	Mechanism established under Article 6 of the Kyoto Protocol. JI provides Annex I countries or their companies the ability to jointly implement greenhouse gas emissions reduction or sequestration projects that generate Emissions Reduction Units.
Monitoring plan	Plan describing how monitoring of emission reductions will be undertaken. The monitoring plan forms a part of the Project Design Document (PDD).

Annex 2:

Location of measurement points and devices



Annex 3:

Measurement devices

Figure 2 Automobile scales