SECOND PERIODIC ANNUAL JI MONITORING REPORT

Version 1.0

29th of March 2011

CONTENTS

SECTION A. General project activity information

A.1 Title of the project activity:

"Waste heaps dismantling with the aim of decreasing the greenhouse gases emissions into the atmosphere".

Sectoral scope: 8. Mining/mineral production

A.2. JI registration number:

0214

A.3. Short description of the project activity:

This Project is aimed at coal extraction from the mine's waste heaps near the town of Snizhne, Donetsk Region, Ukraine. This will prevent greenhouse gas emissions into the atmosphere during combustion of the heaps and will contribute an additional amount of coal, without the need for mining. The Project includes the installation of coal extraction units and the grading of the extracted coal. Extracted coal is then sold for heat and power production.

In the baseline scenario it is assumed that the existing common practice will continue and waste heaps will be burning and emitting GHG into the atmosphere until the coal is consumed. Whereas using improved extraction techniques, proposed in this project, the residual coal can be extracted from the waste heaps and the coal can be used to for the energy needs of local consumers. The reclaimed coal will replace coal that would have otherwise been mined, causing fugitive emissions of methane during the mining process.

A.4. Monitoring period:

- Monitoring period starting date: 01/01/2010.
- Monitoring period closing date: 28/02/2011[1]

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

The JI specific approach is used for the monitoring of emission reductions a in accordance with the JI Guidance on Criteria for Baseline Setting and Monitoring, Version 02.

A.5.1. Baseline methodology:

Baseline emissions come from three major sources:

1. Carbon dioxide emissions that occur during combustion of energy coal. These are calculated as stationery combustion emissions from coal in the equivalent of the amount of coal that is extracted from the waste heaps in the project scenario.
2. Fugitive methane emissions due to the mining activities. 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.
3. Carbon dioxide emissions from burning waste heaps. These are calculated as stationery combustion emissions from coal in the equivalent of the amount of coal that is extracted from the waste heaps in the project scenario, adjusted by the probability of a waste heap burning at any point in 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[2] 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 the Donetsk Region have been, or are now, on fire.

A.5.2. Monitoring methodology:

[1] Both days included.

[2] *Report on the fire risk of Donetsk Region's waste heaps*, Scientific Research Institute "Respirator", Donetsk, 2009. This is a proprietary study that will be made available to the accredited independent entity.

A JI-specific monitoring approach was developed for this project in line with the JI Guidance on Criteria for Baseline Setting and Monitoring, Version 02. The resulting Monitoring Plan was determined as part of the determination process.

Emission reductions due to the implementation of this project will come from two major sources:

- Removing the source of green-house gas emissions from the combustion of waste heaps by the extraction of coal from the waste-heaps;
- Reduced fugitive emissions of methane due to the replacement of coal that would have been mined, by the project.

The following parameters are monitored:

- Additional electricity consumed in the relevant period as a result of the implementation of the project activity;
- 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 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.

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

The project has started on the 1st of January 2005. The table 1 below shows the implementation of different stages of the project.

Activity	Date in the PDD	Actual Date
Construction of the "Snizhnyans'ka-1" unit	2004	September-December 2004
Start-up of the "Snizhnyans'ka-1" unit	2005	01/01/2005
Construction of the "Snizhnyans'ka-2" unit	2010	2010 – construction start
Start-up of the "Snizhnyans'ka-2" unit	2011	-

Table 1: Implementation plan.

The implementation of the waste heap processing complex at "Snizhnyans'ka-2" site has been delayed compared to the PDD estimates due to the prolonged process of construction designing. At the moment the unit at "Snizhnyans'ka-2" has the first stage of the production process ready and operational. This first stage is comprised of site preparation and installation of classification screens.

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/JI_Projects/DB/VOZK3HERSNQGFLCY0YZ3AX5W676M5R/PublicPDD/MQHGWIQPQHUKCDPVQZPXVJ9SG39K05/view.html .

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

There are no deviations to the determined monitoring plan.

A.9. Changes since last verification:

At the moment all weighting operations are fulfilled using automobile scales "ВБА-40-12". All consumed electricity is measured by the electronic meter "НІК 2303 АРК1".

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

Limited Liability Company "Anthracite".

- Andrii Gogolev, Director.

Global Carbon Ukraine

- Denis Prusakov, Senior JI Consultant.
- Iurii Petruk, Junior 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. Additional electricity consumed in the relevant period as a result of the implementation of the project activity

This parameter is metered with a specialized electricity meter "HIK 2303 APK1" during the monitoring period (for more information please see Table B.1.2). The meter is situated next to the current transformers. It registers all electric energy consumed by the project activity as it is located on the only electrical input available on site. Readings are used in the commercial dealings with the energy supply company. Monthly bills for electricity are available. Regular cross-checks with the energy supply company are performed. The monthly and annual reports are based on the monthly bills data.

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

For the metering of this parameter the commercial data of the company are used. Receipts and acceptance certificates are used in order to confirm the amount of fuel consumed. All fuel consumption is taken into account and is attributed to the project activity. If the data in the commercial documents mentioned are provided in litres rather than in tonnes the data in litres are converted into tonnes using the density of 0,85 kg/l[3]. Regular cross-checks with the suppliers are performed. The monthly and annual reports are based on these data.

3. 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.

For the metering of this parameter the commercial data of the company are used. The bill of lading, receipts and acceptance certificates from the customers are used in order to confirm the amount of coal restored. Only shipped coal is taken into account and is attributed to the project activity. Weighting of the coal is performed by the automobile scales "ВБА-40-12". Regular cross-checks with the customers are performed. The monthly and annual reports are based on these shipment data.

B.1. Monitoring equipment types

1. Electricity meter "HIK 2303 APK1";
2. Automobile scales "ВБА-40-12"

[3] GOST 305-82 Diesel Fuel. Specifications. 0,85 kg/l is taken as an avearage between two suggested types of diesel: summer and winter http://elarum.ru/info/standards/gost-305-82/

B.1.2. Table providing information on the equipment used (incl. manufacturer, type, serial number, date of installation, date of last calibration, information to specific uncertainty, need for changes and replacements):

ID	Parameter	Measuring instrument	Unit	Manufacturer	Type	Serial number	Accuracy class	Date of installation
EL	Electricity consumed	"HIK 2303 APK1"	kWh	"NIK-Electronica", Ukraine	Electronic Electricity Meter	0028148	±1%	07.08.2009
W	Amount of coal	Automobile scales ВБА-40-12[4]	t	"Intertehnoves", Ukraine	Automobile scales	№125	±0,04 t	18.07.2008

Table 2: Equipment used for monitoring activities

Basic chart of metering points is provided in Annex 2.

Calibration of the metering devices and equipment has been conducted on a periodic basis according to the procedures of the Host Party.

For the electricity meter "HIK 2303 APK1" (ID EL) calibration during the monitoring period has been done:

- Last calibration has been done 20/05/2009. The calibration interval exceeds the monitoring period (see section B.1.3).

For the automobile scales " ВБА-40-12" (ID W) calibration during the monitoring period has been done:

- 20/07/2010

B.1.3. Calibration procedures:

For electricity meters:

QA/QC procedures	Body responsible for calibration and certification
Calibration interval for electricity meter "HIK 2303 APK1" is 6 years	Ukrainian Centre for Standardization and Metrology

Table 3: Calibration procedures for electricity meters

For scales:

QA/QC procedures	Body responsible for calibration and certification
Calibration interval for scales "ВБА-40-12" is one year	Ukrainian Centre for Standardization and Metrology

Table 4: Calibration procedures for scales

B.1.4. Involvement of Third Parties:

"Donugletehinvest" LLC – contractor for land reclamation.
Ukrainian Centre for Standardization and Metrology – calibration of the metering equipment.

[4] http://intertechnoves.com/Products/video.html

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

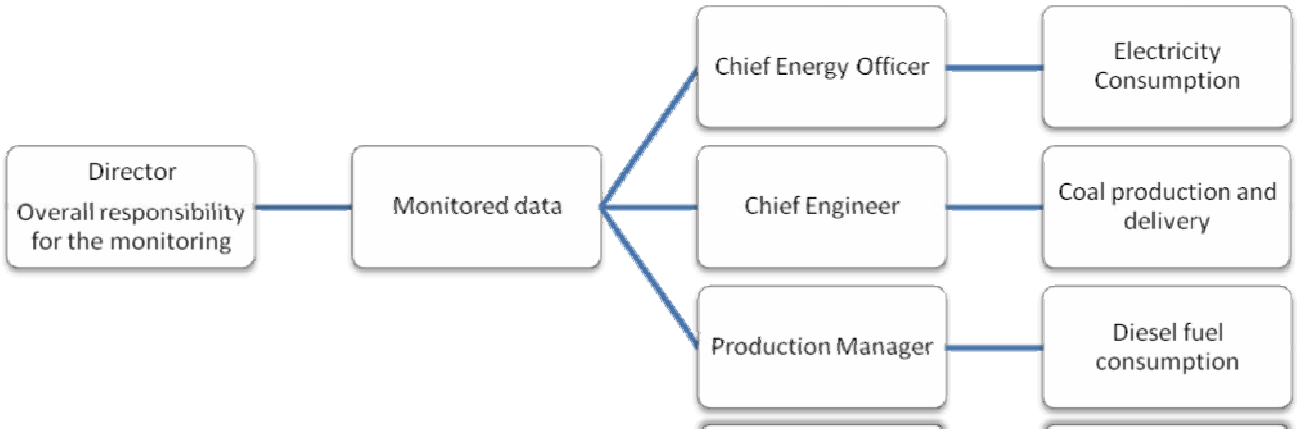

Figure 1: Data collection .

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

Table 5: Fixed parameters

B.2.2. List of variables:

Data / Parameter	Data unit	Description	Data Source	Value	Uncertainty level of data
GWP_{CH4}		Global Warming Potential of Methane	IPCC Second Assessment Report[5]	21	Low
ρ_{CH4}	t/m^3	Methane density	Standard (at room temperature 20˚C and 1 ATM)	0.00067	Low
NCV_{Coal}	TJ/kt	Net Calorific Value of coal	National Inventory Report of Ukraine 1990-2007, p. 266	21.95	Low
NCV_{Diesel}	TJ/kt	Net Calorific Value of diesel fuel	National Inventory Report of Ukraine 1990-2007, p. 266	42.44	Low
$OXID_{Coal}$	ratio	Carbon Oxidation factor of coal	National Inventory Report of Ukraine 1990-2007, p. 273	0.98	Low
$OXID_{Diesel}$	ratio	Carbon Oxidation factor of diesel fuel	Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories: Workbook, Energy, p. 1-8	0.99	Low
k^{C}_{Diesel}	tC/TJ	Carbon content of diesel fuel	National Inventory Report of Ukraine 1990-2007, p. 272	20.2	Low
k^{C}_{Coal}	tC/TJ	Carbon content of coal	National Inventory Report of Ukraine 1990-2007, p. 272	26.8	Low
$EF_{CO2,EL,y}$	tCO2/ MWh	CO2 emission factor for electricity consumed by the project activity in year y equal to emission factor of Ukrainian grid for reducing projects.	See Annex 2. Emission factor is fixed ex ante.	0.896	Low
$EF_{CH4,CM}$	m3/t	Emission factor for fugitive methane emissions from coal mining	National Inventory Report of Ukraine 1990-2007, p.75	25.67	Low
p_{WHB}	ratio	Probability of waste heap burning	Proprietary study 6	0.78	Low

Project emissions variables to be monitored:

ID (from PDD)	Parameter	Calculation method (Measured/Calculated)	Unit	Comment	Meters used (as per B.1.2)	Data aggregation frequency
D.1.1.1.-5	$FC_{PJ,Coal,y}$ - Amount of coal that has been extracted from the	(M/C) Measured in individual shipments then	t	Equal to $FC_{BE,Coal,y}$ The data will be	W	Data are aggregated daily and

[5] *"IPCC Second Assessment: Climate Change 1995. A Report of the Intergovernmental Panel on Climate Change".*Bolin, B. *et al. (1995). IPCC website*. http://www.ipcc.ch/pdf/climate-changes-1995/ipcc-2nd-assessment/2nd-assessment-en.pdf.

[6] *Report on the fire risk of Donetsk Region's waste heaps*, Scientific Research Institute "Respirator", Donetsk, 2009. This is a proprietary study that will be made available to the accredited independent entity.

	waste heaps and combusted for energy use in the project activity in the year y	summarized by calculation. Direct input from company records, scales		archived and kept for two years after the last transfer of ERUs from the project.		monthly and annual reports are prepared
D.1.1.1.-6	$EC_{PJ,y}$ - Additional electricity consumed in year y as a result of the implementation of the project activity	(M/C) Measured continuously by the specialised meter. Summarized monthly by calculation. Direct input from company record, electricity meters	MWh	The data will be archived and kept for two years after the last transfer of ERUs from the project.	EL	Data are aggregated monthly. Annual reports are prepared.
D.1.1.1.-7	$FC_{PJ,Diesel,y}$ - Amount of diesel fuel that has been used for the project activity in the year y	(C) Calculated from the raw documents on fuel usage by summation. Direct input from company record	t	The data will be archived and kept for two years after the last transfer of ERUs from the project.	-	Data are aggregated monthly. Annual reports are prepared.

Table 6: Monitored project emissions variables

ID (from PDD)	Parameter	Calculation method (Measured/Calculated)	Unit	Comment	Meters used (as per B.1.2)	Data aggregation frequency
D.1.1.3-5	$FC_{BE,Coal,y}$ - Amount of coal that has been mined in the baseline scenario and combusted for energy use, equivalent to the amount of coal extracted from the waste heaps in the project activity in the year y	(M/C) Measured in individual shipments then summarized by calculation. Direct input from company records, scales	t	Equal to $FC_{BE,Coal,y}$ The data will be archived and kept for two years after the last transfer of ERUs from the project.	W	Data are aggregated daily and monthly and annual reports are prepared

Table 7: Monitored baseline emissions variables

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

Variable	Description	Units	Values	
			2010	2011[7]
$FC_{PJ,Coal,y}$	Amount of coal that has been extracted from the waste heaps and combusted for energy use in the project activity in the year y	t	48547,02	8086
$EC_{PJ,y}$	Additional electricity consumed in year y as a result of the implementation of the project activity	MWh	1771,976	349,166
$FC_{PJ,Diesel,y}$	Amount of diesel fuel that has been used for the project activity in the year y	t[8]	552,47535	80,3

Table 8: Data that were collected in the project scenario

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

Variable	Description	Units	Values	
			2010	2011[7]
$FC_{BE,Coal,y}$	Amount of coal that has been mined in the baseline scenario and combusted for energy use, equivalent to the amount of coal extracted from the waste heaps in the project activity in the year y	t	48547,02	8086

[7] From 01/01/2011 till 28/02/2011

[8] In the internal company reports the amount of diesel fuel is reported in litres. To convert this amount into the tones the following formula is used: ***Diesel Fuel in Tones = (0,85* Diesel Fuel in Litres)/1000*** Where 0,85 stands for the density of diesel fuel in kg/l. Data taken from GOST 305-82 Diesel Fuel. Specifications. 0,85 kg/l is taken as an average between two suggested types of diesel: summer and winter http://elarum.ru/info/standards/gost-305-82/

Table 9: Data that were collected in the baseline scenario

B.2.5.Data concerning leakage:

According to the PDD, the project activity does not result in a leakage or the net change of anthropogenic emissions by sources and/or removals by sinks of GHGs which occurs outside the project boundary, and that is measurable and attributable to the JI project.

The possible source of the leakage is the energy required to replenish the water which is used in a closed cycle of the facility. External water supply is organized through the water refill from a nearby coal mine. Coal mine pumps the mine water and discharges it into the ground reservoirs in the course of its normal activities. The project activity only uses some of the mine water for replenishing operational water. Mine water is channeled into the installation by a control valve and is transported by gravitation.

No extra energy is used to replenish the water as the mine would have pumped the water in the course of its normal activities both in the baseline and in the project scenario. In the project scenario no additional energy is used to transport the water to the facility as this is done by gravitation. Therefore, no change of anthropogenic emissions by sources and/or removals by sinks of GHGs.

B.2.6.Data concerning environmental impacts:

The full scope EIA in accordance with the Ukrainian legislation[9] has been conducted for the proposed project in 2004-2005 by the local developer PE "Agency of environmental management and audit". Key findings of this EIA are summarized below:

- Impact on air is the main environmental impact of the project activity. Due to the project activity additional amount of coal dust and coal concentrate dust will be emitted into the atmosphere. However, the study of emission levels and disbursement patterns of the contaminators show that maximum concentration limits will not be exceeded throughout the project lifetime. Also, uncontrolled dust and hazardous substances emissions from the waste heap will be avoided;
- Impact on water is minor. The project activity will use water in a closed cycle without discharge of waste water. To feed the water cycle the drainage water from the nearby mine will be used. This will reduce the discharge of this water (treated with chlorine) into the environment;
- Impacts on flora and fauna are mixed. Due to the project activity the existing landscape will be changed but the overall resulting impact is positive. Grass and trees will be planted on the re-cultivated areas. 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;
- 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. **Additional electricity consumed in the relevant period as a result of the implementation of the project activity**

[9] *State Construction Standard DBN A.2.2.-1-2003 :"Structure and Contents of the Environmental Impact Assessment Report (EIR) for Designing and Construction of Production Facilities, Buildings and Structures"* State Committee Of Ukraine On Construction And Architecture, 2004

This parameter is documented in the monthly invoices for the electric energy, internal technical reports. The documents are collected every month by the responsible person. 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 the electricity 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 bound 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 diesel fuel that has been used for the project activity in the relevant period.

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. 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 bound 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.

3. 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.

The 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 bound 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 bound 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.

B.4. Special event log:

All special and exceptional events are documented by the special notes to the management of the company.

SECTION C. Quality assurance and quality control measures

C.1. Documented procedures and management plan:

C.1.1. Roles and responsibilities:

The general project management is implemented by the Director of the Limited Liability Company "Anthracite" through the supervision and coordination of the activities of his subordinates, such as the Chief Energy Officer; Production Manager and Chief Engineer. On-site day-to-day management is implemented by the Production Manager and Chief Engineer. Chief Energy Officer is responsible for maintaining the energy equipment, electrical meters and transformers. A specialised technician teams are responsible for preventive measures and maintenance of all technological equipment. The raw reporting documents are collected and compiled on-site. Data are entered into the computer system, and raw documents are transferred to the company archive.

Main responsibilities are divided as follows:

- Chief Engineer is responsible for acquiring data on coal shipments, raw documents and reports on coal shipped. He transfers raw documents on coal into the archive and prepares monthly reports on restored coal;
- Chief Energy Officer is responsible for acquiring data on electricity consumption, check-up of the electricity meters and cross-checks with energy supply companies.. He transfers raw documents on electricity into the archive and prepares monthly reports on electricity consumption;
- Production Manager is responsible for acquiring data on fuel consumption, raw documents and reports on fuel consumed. He transfers raw documents on fuel into the archive and prepares monthly reports on fuel consumption.

The information is stored in the archive of the company in both electronic and paper form. Raw documents are stored in the archive in paper form. Monthly and yearly summary reports are prepared for every parameter.

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:

The Ukrainian Centre for Standardization and Metrology is a Third Party involved.

C.3. Internal audits 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. If

inconsistencies are found the dispute can be open between two parties and a thorough check of underlying work-orders, 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:

Formula number from PDD	*Formula*	*Formula description*
Equation 13	$ER_y = BE_y - PE_y$	Calculation of emission reductions
Equation 9	$BE_y = BE_{Coal,y} + BE_{CH_4,y} + BE_{WHB,y}$	Baseline emissions calculation
Equation 10	$BE_{Coal,y} = \frac{FC_{BE,Coal,y}}{1000} \cdot NCV_{Coal} \cdot OXID_{Coal} \cdot k^C_{Coal} \cdot 44/12$	Baseline Emissions due to combustion of coal for energy needs in the baseline scenario in the year *y*
Equation 11	$BE_{CH_4,y} = FC_{BE,Coal,y} \cdot EF_{CH_4,CM} \cdot \rho_{CH_4} \cdot GWP_{CH_4}$	Baseline Emissions due to fugitive emissions of methane in the mining activities in the year *y*
Equation 12	$BE_{WHB} = \frac{FC_{BE,Coal,y}}{1000} \cdot p_{WHB} \cdot NCV_{Coal} \cdot OXID_{Coal} \cdot k^C_{Coal} \cdot 44/12$	Baseline Emissions due to burning of the waste heaps in the year *y*
Equation 5	$PE_y = PE_{Coal,y} + PE_{EL,y} + PE_{Diesel,y}$	Project Emissions due to project activity in the year *y*
Equation 6	$PE_{Coal,y} = \frac{FC_{PJ,Coal,y}}{1000} \cdot NCV_{Coal} \cdot OXID_{Coal} \cdot k^C_{Coal} \cdot 44/12$	Project Emissions due to combustion of coal for energy needs in the project activity in the year *y*
Equation 7	$PE_{EL,y} = EC_{PJ,y} \cdot EF_{CO2,EL,y}$	Project Emissions due to consumption of electricity from the grid by the project activity in the year *y*
Equation 8	$PE_{Diesel,y} = \frac{FC_{PJ,Diesel,y}}{1000} \cdot NCV_{Diesel} \cdot OXID_{Diesel} \cdot k^C_{Diesel} \cdot 44/12$	Project Emissions due to consumption of diesel fuel by the project activity in the year *y*

Table 10:Calculation formulas

Parameters in the formulas are as per Sections B.2.1 and B.2.2 of this report.

Additionally in the formulas:

Parameter	***Data unit***	***Description***
ER_y	tCO_2e	Emissions reductions of the JI project in year y
BE_y	tCO_2e	Baseline Emission in year y
PE_y	tCO_2e	Project Emissions due to project activity in the year *y*
$BE_{Coal,y}$	tCO_2e	Baseline Emissions due to combustion of coal for energy needs in the baseline scenario in the year *y*
$BE_{CH_4,y}$	tCO_2e	Baseline Emissions due to fugitive emissions of methane in the mining activities in the year *y*
$BE_{WHB,y}$	tCO_2e	Baseline Emissions due to burning of the waste heaps in the year *y*
$PE_{Coal,y}$	tCO_2e	Project Emissions due to combustion of coal for energy needs in the project activity in the year *y*
$PE_{EL,y}$	tCO_2e	Project Emissions due to consumption of electricity from the grid by the project activity in the year *y*
$PE_{Diesel,y}$	tCO_2e	Project Emissions due to consumption of diesel fuel by the project activity in the year *y*

Table 11: Parameters in formulas

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 B.2. of this document):

D.3.1. Project emissions:

		2010	2011[10]	Total
Project emissions	[tCO2e/yr]	105926	17655	123581

Table 12: Project emissions.

D.3.2. Baseline emissions:

		2010	2011[10]	Total
Baseline emissions	[tCO2e/yr]	200197	33345	233541

Table 13: Baseline emissions.

D.3.3. Leakage:

Not Applicable

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

		2010	2011[10]	Total
Emission reductions	[tCO2e/yr]	94270	15690	109960

Table 14: Emission reductions.

[10] From 01/01/2011 till 28/02/2011

Annex 1

Definitions and acronyms

Acronyms and Abbreviations

CH_4	METHANE
CO_2	CARBON DIOXIDE
GHG	GREENHOUSE GASES
GWP	GLOBAL WARMING POTENTIAL
IPCC	INTERGOVERMENTAL PANEL ON CLIMATE CHANGE
PDD	PROJECT DESIGN DOCUMENT

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 (SF6).
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

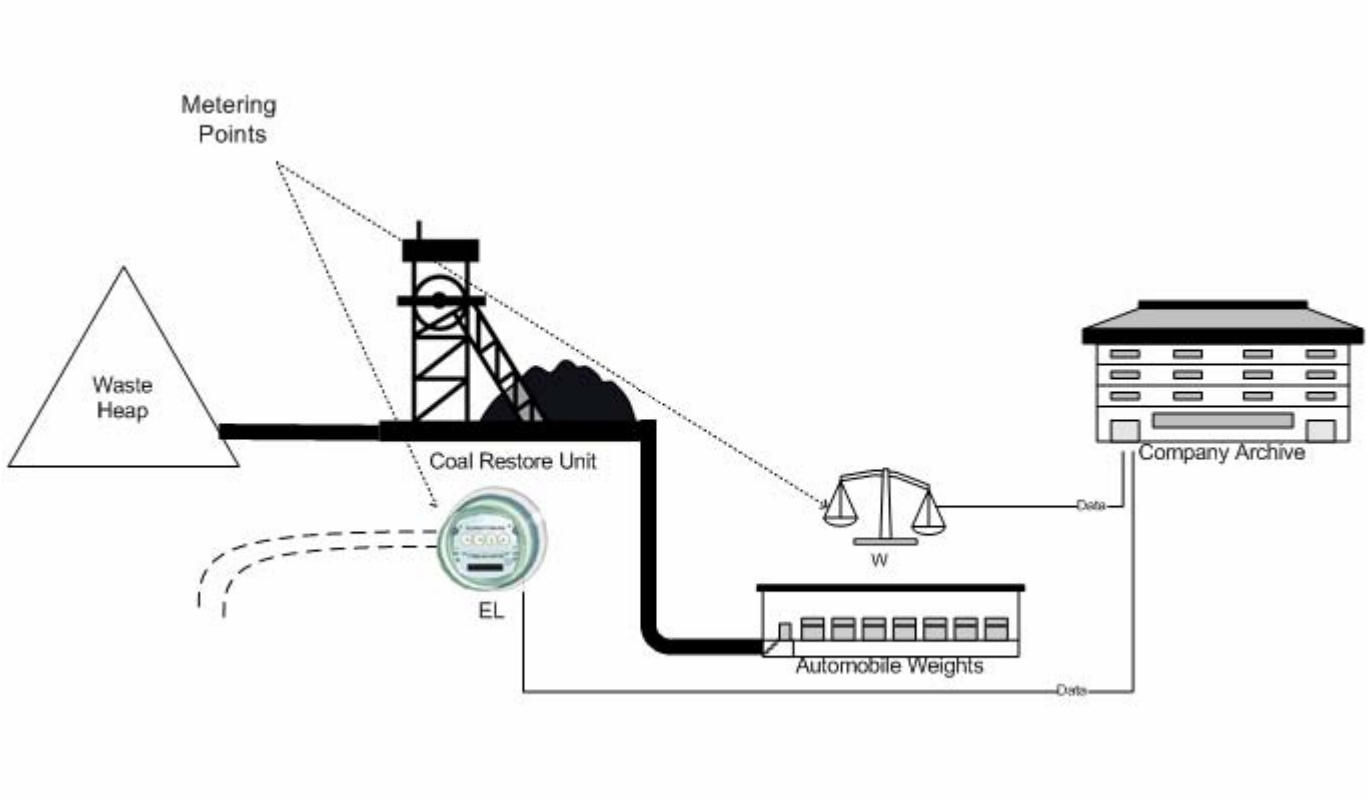

Figure 1 Location of measurement points and devices

Annex 3

Measurement Devices

1.

Figure 1 Automobile scales "ВБА-40-12"

Figure 2 Electricity meter "НИК 2303АРК1"