Monitoring Report
for the Production of Certified Emission Reductions

Zámbiza Landfill Gas Project
(Project No. 0798)

Project Operator:	**Alquimiatec S.A.**
Project location:	**Zámbiza Landfill Site, Quito, Ecuador**
Monitoring Period:	**08.03.07, 00:00 - 31.12.07, 24:00**
Date of Report:	**October 10th, 2008**
Document-Version:	**4**

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Section A: General project activity information

A.1 Title of the project activity

Alquimiatec implemented the landfill gas extraction system on the landfill Zámbiza, Quito, Ecuador project (hereafter: Zámbiza Landfill Gas Project or project), according the Project Design Document version 3, validated by TÜV Süd under reference number 693296 Rev. 03 of December, 11th, 2006. The project was approved by the Ecuadorian DNA under reference number N° 6966-06 AN-MDL/MA on November 9th, 2006 and registered by UNFCCC on March 08th, 2007, under reference number 0798.

A.2 Short description of the project activity

The Zámbiza dumpsite is located in a suburban region northeast of Quito. The area of the Zámbiza dumpsite covers more than 20 hectares and since 1979 in total approximately 5 million tons of municipal waste were deposited at this site. The dumpsite was closed by the end of 2002 remaining no installations for environmental protection behind, such as methane capture, leakage control or whatsoever.

The objective of the project is to install a highly efficient landfill gas collection system to capture and destroy methane by flaring at high temperatures. Without the project the methane would emit uncontrolled in the atmosphere. The installation of the project consists of a well based gas collection system with a combustion unit attached behind in order to flare the captured methane under controlled burning conditions.

The estimated amount of emission reductions over the chosen crediting life time of 10 years (mid-2006 – mid-2016) accrues in total to 765,041 tons CO_2e.

A.3 Monitoring period

The monitoring period is from March 8th, 2007 00:00 local time up to December 31th, 2007, 24:00 local time.

A.4 Methodology applied to the project activity (incl. version number)

A.4.1 Baseline methodology

According to the classification of the CDM Executive Board the project activity is categorised as **waste handling and disposal** (sectoral scope 13), where the emission baseline is the amount of methane that would be emitted to the atmosphere during the crediting period in the absence of the project activity. The baseline covers capture and flaring of methane that would not have happened without the project activity.

The revised approved consolidated baseline ACM0001, ("consolidated baseline methodology for landfill gas project activities"), version 04 in effect as of July 28th, 2006 has been applied to this project.

A.4.2 Monitoring methodology

The selected methodology ACM0001 (version 04) is applicable to "landfill gas capture project activities where the baseline scenario is the partial or total atmospheric release of the gas and the project activities include situations such as: a) the captured gas is flared; or b) The captured gas is used to produce energy (e.g. electricity/thermal energy), and emission reductions are claimed for displacing or avoiding energy generation from other sources.

A.4.2.1 Monitoring Plan

The project monitors and calculates greenhouse gas emission reductions based on the monitoring plan according to the validated monitoring system.

Chart A.4.2.1 Flow chart incl. measurement devices according to monitoring plan (for further technical details see PDD, Annex 2)

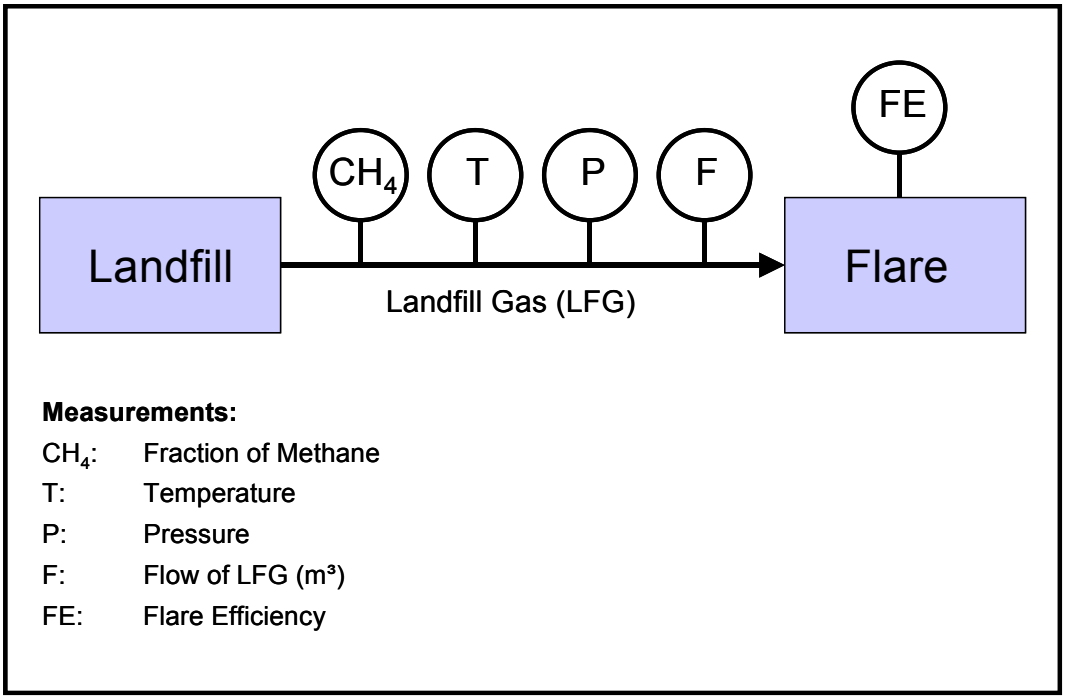

Table A.4.2.1 List of all measurement devices according to monitoring plan

ID number *ref. PDD Annex 4.*	**Data variable**	**Source of data**	**Data unit**	**Measured (m), calculated (c), estimated (e),**	**Recording frequency**	**Proportion of data to be monitored**	**How will the data be archived? (electronic/ paper)**	**Comment**
1. $LFG_{total,y}$	Total amount of LFG captured	Flow meter	Nm^3	m + c	continuously	100 %	electronically	Simultaneous recording of flow, temperature and pressure expressing LFG volumes in standardized cubic meters.
5. FE	Flare/ combustion efficiency, determined by operation hours (1) and the methane fraction in the exhaust gas (2)	(1) Run time meter (2) Gas analyser	(1) h (2) %	m / c	(1) continuously (2) yearly with the first measure-ment at installation	100 %	electronically	(1) Continuous measurement of operation time of flare using a run time meter connected to a flame detector or a flame continuous temperature controller. (2) Measurement of flare / combustion efficiency by Detection of Carbon Monoxide (CO) as relevant measurand for evidence of combustion of Total Carbon in exhaust gas. The CO Detector, based on IR spectroscopy, is used to measure concentrations of Carbon Monoxide within a sampled gas. Gas samples will be taken at two different measurement points (in the measurement cross section) at the flare stack. Gas samples will be taken under operating conditions at maximum plant output for 3 times 30 minutes for getting representative measurement of the CO content.
6. $w_{CH4,y}$	Methane fraction in the LFG	Gas analyser	Vol.-m^3 CH_4/ m_3 LFG	m	continuously	100 %	electronically	Measured through IR spectroscopy.
7. T	Temperature of LFG	Thermo meter	°C	m	continuously	100 %	electronically	Implicit integrated in monitoring devices ID 1. to directly deliver LFG volumes in standardized cubic meters.
8. p	Pressure of LFG	Pressure gauge	Pa	m	continuously	100 %	electronically	Implicit integrated in monitoring devices ID 1. to directly deliver LFG volumes in standardized cubic meters.
10. EL_{IMP}	Total amount of electricity imported to meet project requirement	kWh meter	MWh	m	continuously	100%	electronically	To determine the net value of the electricity exported out of the grid.

A.4.2.2 Calculating Reduction Greenhouse Effect

Referring to the revised ACM0001 (version 04), the greenhouse gas emission reductions of this project are calculated by the following equation:

$ER_y = LFG_{flared,y} * w_{CH4,y} * D_{CH4} * FE * GWP_{CH4} – EL_{IMP} * CEF_{electricity,y}$

ER_y :	greenhouse gas emission reduction achieved by the project activity during a given year "y", measured in tonnes of CO_2 equivalents (t CO_2e)
$LFG_{flared,y}$:	quantity of landfill gas flared during the year measured in standardized cubic meters(Nm^3)
$w_{CH4,y}$:	average methane fraction of the landfill gas as measured during the year and expressed as a fraction, measured in Vol.-% CH_4
D_{CH4} :	methane density expressed in tonnes of methane per cubic meter of methane (0.0007168 t CH_4/ m^3 CH_4 at standard temperature and pressure: 273 K and 1,013 bar)
FE :	flare efficiency expressed as the fraction of the methane destroyed, measured in %
GWP_{CH4} :	Global Warming Potential value for methane for the first commitment period (21 t CO_2e/ t CH_4)
EL_{IMP} :	electricity imported to meet the project requirements; measured in kWh
$CEF_{electricity,y'}$:	determined to 0.668 tons CO_2e/ MWh

The equation shows that the greenhouse gas emission reductions are calculated based on the following variable parameters: quantity of landfill gas flared during the year ($LFG_{flared,y}$), average methane fraction of the landfill gas as measured during a year ($w_{CH4,y}$) and the electricity imported (EL_{IMP}) to run the process as described in **Fehler! Verweisquelle konnte nicht gefunden werden.**. The flare efficiency (FE) is measured and fixed for one year and methane density (D_{CH4}) and global warming potential value (GWP_{CH4}) are constant values.

A.5 Status of implementation including time table for major project parts

The plant has been installed and implemented in 2006. The commissioning of the flare booster station took place in December 2006 and was finished on 13.12.2006.

In 2007 no major revisions have taken place. Scheduled maintenance activities are listed in the Operation, Monitoring & Maintenance Schedule for the Gas Collection System (s. Appendix E.2.1)

A.6 Intended deviations or revisions to the registered PDD

There are no intentions for any deviation or revision to the registered PDD.

A.7 Intended deviations or revisions to the registered monitoring plan (Decision 17/CP.7, Annex H, paragraph 57 to be considered)

There are no intentions for any deviation or revision to the registered monitoring plan.

A.8 Changes since last verification

There are no changes since the initial verification on March, 7th 2007.

A.9 Person(s) responsible for the preparation and submission of the monitoring report

The monitoring report is provided by Alquimiatec S.A., the owner and operator of the landfill gas extraction system on the landfill Zámbiza in Quito, Ecuador. The responsible person for the preparation and submission is the General Manager of Alquimiatec S.A., Mr. Mathias Zohm.

Section B: Key monitoring activities according to the monitoring plan for the monitoring period stated in A.4. (referring to Decision 17/CP.7, Annex H, paragraph 53 (a) – (d) on data collection and archiving)

The monitoring activity starts with the beginning of the verification period on March 8th, 2007 and is determined as of January 2008.

The purpose of this monitoring report is to quantify the volume of achieved greenhouse gas emission reductions (ER_y) by means of the project. These reductions are expressed in tonnes CO_2-equivalents. The Designated Operational Entity (DOE) can certify these reductions as per the Kyoto Protocol and CDM Modalities Procedures requirements (Decision 17.CP7).

B.1 Monitoring equipment

The variable parameters mentioned under A.4.2.1are electronically recorded by a data logger and periodically transferred to the operator as well as to the supplier of the installation. The flare efficiency is measured by CO detection once a year. The stored data are secured as backup files frequently by the operator. Additionally, within the maintenance schedule, data and technical information will be recorded manually in the operating journal.

B.1.1 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)

Table B.1.1 Table providing information on the equipment used for monitoring

Data *(ID number ref. PDD Chapter D.2.2.)*	Measurement device	Manu-facturer	Type / Serial Number	Uncertainty level of data High/Medium/Low (Quantification)	Date of installation (A)/ Date of last calibration (B)	Explain QA/QC procedures planned for these data, or why such procedures are not necessary.
1. ($LFG_{total,y}$)	Flow Meter (see E.2.2, E.2.3 and E.3.1)	Elster-Instromet	Q-75-K / Serial No.: 10508046 Electronic turbine Meter (DN 250) incl. Gas Volume Corrector (Electronic totalising Unit)	1%-2%	A:15.01.2007 (Initial Verification) B: 04.12.2006 (done by manufacturer)	The flow meter (ID-Nr. 1) incl. its measurement devices for temperature (ID-Nr. 7) and pressure (ID-Nr. 8) of LFG will be subject to a regular calibration and testing regime to ensure accuracy. According to manufacturers recommendation, this should be done after two years and then every 4 years in case everything is correct. The gas counter of the turbine blade will be greased with a force pump.
1. ($LFG_{total,y}$)	Flow Meter (seeE.2.2, E.2.3 and E.3.1)	RMG	TEC 24 / Serial No.: 602576 Electronic turbine Meter TERZ 94 (DN 200) incl. Gas Volume Corrector EC 24 (Electronic totalising Unit)	1,3 % at 2,000 m³/h	A: 15.12.2006 (at commissioning) B: 01.09.2006 (done by manufacturer)	In case the calibration of the regular flow measurement will not be done on site a spare flow meter will be used for measurement at the time of absence. This flow meter will be subject to a regular calibration and testing regime to ensure accuracy.
5. (FE)	Run time meter (see E.2.4)	Bauser	Type 631.2	2%	A: 15.12.2006 (at commissioning) B: no calibration necessary	Run time meter connected to a flame detector. Regular maintenance will ensure optimal counting of flare operation.
5. (FE)	Flue Gas Analyzer for CO (see E.2.5 and E.3.2)	Testo	300 XL / Serial No.: 00289726	5%	A: 15.12.2006 (measurement) B: 15.12.2006 (done by GGG)	Flare efficiency will be checked yearly beginning with the time of installation.

6. ($w_{CH4,y}$)	Landfill Gas Analyser for CH_4 (IR), CO_2 (IR) and O_2 (chemical sensor) (see E.2.6 and E.3.3)	NUK	NGA 5 – CH_4 – CO_2 – O_2	2 % at calibration value 45 volume % CH_4	A: 15.12.2006 (at commissioning) B: 04.01.2008 (done by Proviento S. A.)	The gas analyser will be subject to a regular maintenance and testing regime to ensure accuracy (see **Fehler! Verweisquelle konnte nicht gefunden werden.**). The measuring cell will be calibrated regularly. Methane content could be cross-checked by CO_2 and O_2 determination.
6. ($w_{CH4,y}$)	Portable Gasmonitor (see E.2.7 and E.3.4)	Geotech nical	GA 94 S/N: 3800/3695	3 % Methane and Carbon Dioxide 1 % Oxygen	A: 15.12.2006 (at commissioning) B: 04.01.2008 (done by Proviento S. A.)	As replacement during failure of NGA 5 – CH_4 – CO_2 – O_2
10. (EL_{IMP})	kWh Meter (see E.2.8)	Socomec	Diris Am	< 1%	A: 15.12.2006 (measurement) B: 15.12.2006 (done by manufacturer)	The kWh meter will be subject to a regular maintenance and testing regime to ensure accuracy according to specification.

B.1.1.1 Landfill Gas Quantity

Flow Meter
The Gas Flow Meter consists of two main components, the electronic turbine meter Q75 with the meter case and the measuring element (with turbine wheel and sensor) and the gas volume corrector 999-P.

The flow meter directly measures the flow rate at measurement conditions and integrates the measured values, so that, as a result, the gas volume which flowed through the meter is registered by an electronic totalising unit. The gas flow drives a turbine wheel whose speed is recorded through non-contact measurement by a sensor. Therefore, the meter is characterized by long-term stability and low wear.

Inside the meter case an aerodynamic flow straightener fitted into the meter case constricts the effective cross section of the pipe to form a ring-shaped cross-sectional area and substantially eliminates turbulences. The velocity of the flowing gas increases and the gas is directed to the turbine blades. The turbine wheel is dynamically balanced and mounted with dustproof ball bearings. A permanent magnet located at the end plate of the turbine shaft induces the sensor element to give a voltage pulse with each rotation of the turbine wheel. This pulse is further processed by the electronic system of the meter head.

Inside the meter head, the number of pulses is divided by the meter factor (number of pulses per m3) and the result is used to calculate the volume at measurement conditions. In the main electronic totalising unit, the sum of the volume at measurement conditions which flowed through the meter is formed and you can read the gas volume which flowed through the meter per time unit on the flow rate display.

Irrespective of pressure and temperature, the gas meter measures only the gas volume flowing through it, i.e. what is called volume at measurement conditions. Since gas can be compressed, the quantity of gas which has actually flowed through the meter has still to be calculated from the measured volume at measurement conditions (correction). As a measure for this quantity of gas, what is called volume at base conditions (related to the temperature at base conditions of 0°C and the pressure at base conditions of 1.01325 bar) is used.

This conversion is made by the volume corrector on the basis of the equation of state for ideal gases. Since this equation alone does not meet all the requirements for high-precision gas metering, it is also necessary to take account of the characteristics of the real gas by using a correction factor, i.e. the K coefficient. In the range of ambient pressure and temperature it is common practice in thermo-dynamics to consider real gases as ideal or perfect gases. This means that the coefficient K = 1.

The volume correctors can be used for custody transfer and secondary metering in conjunction with turbine meters or rotary displacement meter. In the case of the volume corrector, correction is based on the state variables of pressure and, temperature of LFG as integrated in monitoring device for gas flow measurement (ID 1.) to directly deliver LFG volumes in standardized cubic meters.

Logging
Accumulated gas flow is recorded in the electronic totalising unit of the flow meter.

Calibration
According to the specification of the flow meter, this measurement device will be calibrated according to the requirements of the monitoring methodology (version 04) the recommendations and manuals of the manufacturer regarding recalibration of gas flow measurement equipment which includes flow meter, volume corrector and sensors for gas temperature and gas pressure.

According to recommendation of the manufacturer this should be done after two years and then every 4 years in case everything is correct. In case the calibration of the regular flow measurement will not be done on site a spare flow meter (TERZ 94 / EC 24) will be used for measurement at the time of absence. The results of each flow meter will be recorded at every change of equipment and sent to the verifier in a separate calibration report. Valid calibration report(s) will be part of the monitoring report (s. Annex E.3.1).

As the spare flow meter has not been in operation during this monitoring period no data measured and recorded by this measurement devise are used for calculating Emission Reduction Units of this Monitoring Report.

B.1.1.2 Operation Time

Electromechanical hour counter (Run time meter)
For metering the operation time of the flare a UV sensor detects the flame inside the combustion chamber. The UV sensor consists essentially of a UV-sensitive tube and electronic components. Only when UV radiation is present, generated by a flame or an ignition spark, the tube will switch. Sun light or other light sources have no effect. When tube has switched the main gas valve will be opened for gas supply to the flare by the automatic burner control unit and landfill gas combustion starts. Simultaneous to the starting process this control unit activates the electromechanical hour counter for metering the operation time of the flaring process.

Logging
Accumulated operation time of the flare is logged only at the electromechanical hour counter and has to be recorded manually.

Calibration
-According to specification of the manufacturer the run time meter can neither be modified nor be calibrated for the counting range of 99999.99 hours. It works or it is defect and a reset is not possible.

B.1.1.3 Flue Gas Analyse

Carbon monoxide detector
The measurement of carbon monoxide in the flue gas of the flare is carried out with a portable CO-detector. This detector is used to measure concentrations of carbon monoxide within a sampled gas. The detector has a built-in infrared-spectroscopy and an integrated sample gas cooling system. This high precision measurement devices is easy to read and data can be stored on the internal data-logger.

The detector measures concentrations of carbon monoxide within a sampled gas. Carbon monoxide (CO) is a relevant indicator for evidence of combustion of total carbon in exhaust gas.

Gas samples will be taken at two different measurement points (in the measurement cross section) at the flare stack. Gas samples will be taken under operating conditions at maximum plant output for 3 times 30 minutes for getting representative measurement of the carbon monoxide content in flue gas.

Logging
The data will be buffered every 5 seconds. Every minute, the mean value of these buffering data is stored. Using a connection between detector and a PC, the data can be set up, read out and the measured data can be stored and displayed. The data collected during an annual measurement are provided in separate report.

Calibration
The calibration of the carbon monoxide detector is carried out before measuring starts. The analyser is calibrated with ambient air and a certified calibration gas with a certain concentration of carbon monoxide.

B.1.1.4 Landfill Gas Quality – Stationary Landfill Gas Analyser

The gas analysing system NGA 5 –CH_4 – CO_2 – O_2 is a modular construction and designed for a stationary continuous operation. The measuring gas to be analysed, is taken directly from the landfill gas pipeline and fed via the internal measuring gas processor to the measuring instruments. The analysed measuring gas is led back to the withdrawal pipeline.

In order to ensure reliable measuring and to protect the analysers from inadmissible foreign matter, such as particles of dirt or condensate, it is necessary to process the measuring gas to be analysed. The gas analysing system measures the methane (CH_4), carbon dioxide (CO_2) and oxygen (O_2) in three different measurement devices.

The methane and the carbon dioxide gas analysers are non-dispersive infrared-photometers (NDIR). They record the absorption of the infrared rays caused by the measuring gas. The wavelengths of the absorption bands characterise the type of gas, whilst the intensity of the absorption is a measurement for the concentration of measuring components. The oxygen gas analyser is chemical sensor.

Logging
The landfill gas analyser provides three analogue signals, CH_4, CO_2 and O_2. The values are recorded by the Memograph as analogue input signals. The connected analogue measurement points are measured every minute. Data storage is in the internal memory. Long term archiving is done on an external PC, whereby the recorded data of 24 hours is transmitted to an external PC. Using the PC software the units can be set up, read out and the measured data can be stored and displayed.

Calibration
According to the specification of the landfill gas analyser, every week this measurement device has to be calibrated. During calibration of the landfill gas analyser all signals will be set to constant values according to last measurements by activating the calibration mode. In this mode the monitoring function of the analyser is not in operation but last value is recorded as fix value. This change from measuring mode into calibration mode is recorded by the data-logger. The results of calibration are recorded in a separate protocol. All calibration reports are part of the monitoring report.

The calibration has to be carried out with calibration gas according the requirements of the specification of the landfill gas analysing system. The calibration gas is purchased by a certified gas supplier and gas provided for calibration has a quality certificate which is part of the monitoring report.

B.1.1.5 Landfill Gas Quality – Portable Landfill Gas Monitor

The portable gas analysing system GA94 is a gas monitor designed for portable operation on landfill sites, especially at manifold stations and gas collection pipes. The measuring gas to be analysed, is taken directly from the landfill gas pipeline and fed via the internal measuring gas processor to the measuring instruments. The gas analysing system measures the methane (CH_4), carbon dioxide (CO_2) and oxygen (O_2) in three different measurement devices.

The methane and the carbon dioxide gas analysers are non-dispersive infrared-photometers (NDIR). They record the absorption of the infrared rays caused by the measuring gas. The wavelengths of the absorption bands characterise the type of gas, whilst the intensity of the absorption is a measurement for the concentration of measuring components. The oxygen gas analyser is chemical sensor (galvanic cell).

The analyser is used for adjusting gas flow of each well according to productivity of the same. This analyser can be used for cross-checking the stationary gas analyser but is usually not used for determination of any values for calculating Emission Reductions Units. Only in but in case of emergency or troubleshooting case in C.3.

Logging
The readings of CH_4, CO_2 and O_2 can be logged in the internal memory, provided with a unique ID-tag for identification. Data storage is in the internal memory. Long term archiving is done on an external PC. Using the PC software the monitor can be set up, read out and the measured data can be stored and displayed.

Calibration
According to the specification of the landfill gas analyser, this measurement device has to be checked/calibrated regular according to recommendation of manufacturer.

The calibration has to be carried out with calibration gas according the requirements of the specification of the landfill gas analysing system. The calibration gas is purchased by a certified gas supplier and gas provided for calibration has a quality certificate which will be part of the monitoring report.

B.1.1.6 Electrical Energy Consumption

Energy Meter
For metering energy consumption of all project related consumers a multi function energy meter DIRIS AM measures the imported electrical energy from the grid. The energy meter is a DIN rail mounted multi function meter for measuring electrical values in 1, 2 & 3 phase, low and high voltage networks. Standard model enables you to measure current, voltage, frequency, active, reactive and apparent power, power factor, hours run meter and electrical energy consumption in kWh.

Logging
Accumulated energy consumption is logged only at the multi function energy meter and has to be recorded manually. As the power consumption is continuously measured and automatically recorded in the power meter the monthly power consumption is calculated based on the first reading of each month. This value is interpolated to get the value for the first day of the month. The difference between two values provides the power consumption for the according month. For cross-checking it is referred to power consumption of each monitoring period according to the first and final values as read and reported in visit reports.

Calibration
According to the specification of the energy meter, this measurement device will be treated according to the requirements of the manufacturer.

B.1.2 Involvement of Third Parties

Following third parties are involved in the key monitoring activities according to the monitoring plan for the monitoring period:

For service and operations of the degassing system incl. flare-booster-station:
Green Gas Germany GmbH
Mr. Ralf Michels (Director of Operations)
Hessenstr. 57
D – 47809 Krefeld
Germany

For local service and operation on site:
Proviento S.A.
Mr. Olaf Schwetje (General Manager)
Av. 9 de Octubre N 19-33 y Av. Patria
Piso 2
Casilla Postal 17-17-589 Quito
Ecuador

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

The verification of the following parameters and items is undertaken periodically once a year at the implemented landfill gas extraction system on the landfill Zámbiza in Quito, Ecuador.

Table B.2 Parameters and items verified periodically

Nr.	ID-Nr.	Parameter / Item	Code	Unit
1	1	Landfill gas quantity	$LFG_{flared,y}$	Nm^3
2	5	Flare efficiency	FE as Carbon Monoxide fraction in the exhaust gas	%
3	5	Flare efficiency	FE as operation hours	H
4	6	Methane fraction in the LFG	$w_{CH4,y}$	m^3 CH_4/ m_3 LFG

5	10	Electricity imported	EL_{IMP}	KWh
6		Calibration procedure of gas turbine meter		
7		Calibration procedure of gas analyser		

The parameters are recorded by the verification entity. The calibration procedures are attested by according documents. The calibration procedure of the gas turbine meter is testified by an officially accredited entity. The calibration procedure of the gas analyser is testified by protocols of the operation staff. The flare efficiency is measured by Green Gas Germany GmbH, recorded in a separate protocol which is not part of the monitoring report.

All parameters and items are verified by the verification entity and shall be attested as correctly measured and calibrated in a separate Verification and Certification Report. The verification entity is supposed to certify the greenhouse gas emission reduction monitored in this project during the mentioned monitoring period with the target to get issued Certified Emission Reductions by the UNFCCC.

B.2.1 Data concerning environmental impacts (referring to paragraph 53(d))

Due to local legal requirements an Environmental Impact Study on the Zámbiza Project has been separately prepared by Fundación Natura, Quito, for the Municipality of Quito. The study is available upon request.

According to this environmental impact study the project effects the environment in a positive way. The implementation of the project will benefit the environment of the region as it will mainly cause:

- A reduction of the risk of explosions in the dumpsite that would affect the bordering residential sectors;
- An improvement of the climate, by the elimination of landfill gas to be emitted otherwise uncontrolled, of which 50 % is methane;
- A reduction of bad odours, mainly in the residential sectors of Zámbiza.
- An improvement of health quality for the people in the surrounding.

B.2.2 Data processing and archiving (incl. software used)

All relevant process parameters are recorded by the Memograph (see E.2.9), a visual data manager, that saves, displays, analyses and stores 8 to 16 analogue or 7 to 37 digital inputs. The connected analogue measurement points are measured parallel every 125 ms. Data storage is in the internal memory. Data are stored once per minute according to the actual settings. As the internal memory storage will be rewritten after 53 days of data-logging long term archiving is done on an external PC the data is transmitted to. Using the PC software ReadWin® 2000 the units can be set up, read out and the measured data can be stored and displayed.

The following process parameters will be sampled and stored in the data-logger of the flare-booster-station (see E.2.10):
- Inlet Pressure (in front of booster)
- Outlet Pressure (after booster)
- Combustion temperature
- Methane concentration
- Carbon dioxide concentration
- Oxygen concentration
- Landfill gas temperature (after booster)

The following parameters will be recorded in the according measurement device separately:
- Gas flow meter
- Energy meter
- Electromechanical hour counter (analogue display)
- Flue gas analyser (protocols and report)

Once a month the data will be transferred to the monitoring station. The monitoring station is a PC containing the following items:

• visualization system of the process for operating purposes;
• database to store the received process data and
• system to provide alarm signals to the operators.

The calculation of Emission Reduction Units according to A.4.2.2 is carried out per minute based on raw data as logged. Flare efficiency and electrical energy consumption are considered on a monthly base based on flare efficiency factor according to PDD and difference of first and final read value of energy consumption by local operator.

All data recorded, either logged in a data file or on paper are kept in digital format and are backed up on a server which is integrated in a data backup procedure. All data are kept for at least the crediting period plus 2 years after.

B.3 Special event log

All events and special situations which occurred are listed with date and details in the operation journal.

In case of using secondary data for Emission Reduction calculation because of any failure or malfunction of measurement or data logging equipment a statistical analysis of the secondary data set will be done to confirm that for each period with different monitoring frequency, the periodical measurements are at a 95% confidence level.

Section C: Quality assurance and quality control measures

C.1 Documented operation procedures and management plan

The measurement reliability is secured by a low uncertainty level of each measurement device relevant for calculating greenhouse gas emission reductions. Further on, according quality control (QC) and quality assurance (QA) procedures are undertaken for the measurement devices. The uncertainty levels and procedures in regard to the relevant data monitored for emission reduction calculation are listed in the table below.

Table C.1 Quality control (QC) and quality assurance (QA) procedures of measurement devices

Data *(ID number ref. PDD Chapter D.2.2.)*	Measurement device (type, manufacturer, specification, if determined)	Uncertainty level of data High/ Medium/ Low (Quanti-fication)	Comments	Explain QA/QC procedures planned for these data, or why such procedures are not necessary.
1. ($LFG_{total,y}$)	Flow Meter Q-75-K; Instromet; DN250	1%-2%	Simultaneous recording of temperature and pressure expressing LFG volumes in standardized cubic meters.	The flow meter (ID-Nr. 1) incl. its measurement devices for temperature (ID-Nr. 7) and pressure (ID-Nr. 8) of LFG will be subject to a regular calibration and testing regime to ensure accuracy. According to manufacturers recommendation, this should be done after two years and then every 4 years in case everything is correct. The gas counter of the turbine blade will be greased with a force pump.

5. (FE)	Run time meter connected to a flame detector	2%	Continuous measurement of operation time of flare using a run time meter connected to a flame detector or a flame continuous temperature controller	Regular maintenance will ensure optimal operation of flares. Flare efficiency will be checked yearly beginning with the time of installation.
5. (FE)	Flue Gas Analyzer for CO Testo 300 XL	5%	Measurement of flare / combustion efficiency by Detection of Carbon Monoxide (CO) as relevant measure and for evidence of combustion of Total Carbon in exhaust gas. The CO Detector, based on IR spectroscopy, is used to measure concentrations of Carbon Monoxide within a sampled gas. Gas samples will be taken at two different measurement points (in the measurement cross section) at the flare stack. Gas samples will be taken under operating conditions at maximum plant output for 3 times 30 minutes for getting representative measurement of the CO content.	Regular maintenance will ensure optimal operation of flares. Flare efficiency will be checked yearly beginning with the time of installation.
6. ($w_{CH4,y}$)	Landfill Gas Analyser for CH_4 (IR), CO_2 (IR) and O_2 (chemical sensor) NUK; NGA 5 –CH_4 – CO_2 – O_2	2 % at calibration value 45 Vol.-% CH4	Non-dispersive infrared-photometers (NDIR) for CH_4 and CO_2 Chemical sensor for O_2	The gas analyser will be subject to a regular maintenance and testing regime to ensure accuracy. The measuring cells will be calibrated regularly. Methane content could be cross-checked by CO_2 and O_2 determination.
6. ($w_{CH4,y}$)	Portable Landfill Gas Analyser for CH_4 (IR), CO_2 (IR) and O_2 (chemical sensor). Geotechnical, GA94	3 % Methane and Carbon Dioxide 1 % Oxygen	Optional in case of failure of NGA 5	The gas analyser will be subject to a regular maintenance and testing regime to ensure accuracy. The measuring cells will be calibrated regularly.
10. (EL_{IMP})	kWh meter	< 1%	Energy meter for determination of the net value of the electricity imported from the grid.	The kWh meter will be subject to a regular maintenance and testing regime to ensure accuracy.

C.1.1 Roles and responsibilities

Alquimiatec S.A. as the project owner is responsible for the project site. In regards to any permission as well as any CDM-related procedures and requirements Alquimiatec S.A. is the responsible contact address.

Green Gas Germany GmbH was subcontracted by Alquimiatec S.A. for operation and maintenance incl. monitoring of the degassing system incl. all equipment installed and implemented for this project within the project boundaries. The operation includes all scheduled and unscheduled service and maintenance activities. Any activities not covered by the operation & maintenance contract will be ordered separately by Alquimiatec S.A. or discussed with Green Gas Germany for mutual agreement and organisation.

Proviento S.A. was subcontracted by Green Gas Germany GmbH for technical on-site operation of the degassing system incl. all equipment installed and implemented for this project within the project boundaries. The operation includes all scheduled and unscheduled service and maintenance activities. Any activities not covered by the operation & maintenance contract will be ordered separately by Green Gas Germany GmbH.

External service provider and subcontractor are contracted by Green Gas Germany GmbH separately on demand. Any work carried out on site or inside the gas utilisation facilities are supervised and finally accepted by Proviento S.A..

Responsibilities:

- Visit Reports are recorded by operator (Proviento) twice to 5 times a week and sent to GGG (every visit).
- Data Log are recorded by operator (Proviento) on site twice to 5 times a week (all past data) and sent to GGG along with Visit Report.
- Calibration of measurement equipment is done by the operator and sent to GGG with the Visit Reports.
- Monthly Reports are prepared by GGG and sent to Alquimiatec based on the information of looged data (received monthly) and Visit Reports (received every visit).
- CDM Monitoring Report is prepared by GGG based on Monthly Reports.
- Crosscheck of logged data with the Visit Reports is done by GGG

C.1.2 Trainings

During commissioning of the plant the local service provider Proviento S.A. has been trained for operation and servicing the degassing system and the flare-booster-station.

The training was organised by Green Gas Germany for the complete site. All training sections were carried out according to documentation and specification of each separate equipment.

The training for the degassing system was carried out by Green Gas Germany, especially for adjusting gas wells and sub-stations as well as looking after condensate traps and knock-out pot incl. condensate pump.

In regard to the flare-booster-station the training was carried out by the commissioning technician of the provider and subcontractor Hofstetter AG for this equipment incl. landfill gas analyser, gas flow meter, data-logger, switchgear, boosters.

With any modification of the existing plant the training for the modified items will be repeated according to the specifications. Modifications and trainings should be carried out when Green Gas Germany GmbH is on site, preferable during the semi-annual or annual meetings on site.

C.2 Internal audits and control measures

All collected data are controlled monthly according to scheduled controlling meetings within Green Gas Germany GmbH based on internal quality management activities. The status of the plant incl. all technical details are controlled monthly based on the monthly operation journals provided by Proviento S.A..

Based on the monthly reporting periodic maintenance steps will be scheduled quarterly by Green Gas Germany GmbH and arranged with Proviento S.A. and / or any external service partner.

On a half year basis the site will be visited by Green Gas Germany GmbH for technical control and any service activities that need to be done by specially trained service staff. These internal audits are reported and provided with the monitoring report.

On a yearly base in combination with the periodic verification the technical control and service activities are repeated by Green Gas Germany GmbH. In addition to this there will be a service audit with the local partner(s).

C.3 Troubleshooting procedures

In case of any failures or malfunction at the flare-booster-station the local partner for service and operation on site, Proviento S.A., will get a text message as SMS on the mobile phone sent by the Memograph based on a failure detection or alarm situation on site. Proviento S.A. will visit the site in appropriate time for inspection and identification of the failure. Failure and potential reason will be

recorded in the operation journal. Every visit of Proviento staff in case of troubleshooting will be recorded in a visit report. (Visit reports can be provided on request.)

In case of unclear situation Proviento S.A. contacts the operator Green Gas Germany GmbH for consultation and technical service support. In case of any specific technical problem external service suppliers might be involved to solve the problem.

In case of any failures or malfunction at any measurement device the following trouble shooting procedures will be carried out to meet the requirements of the monitoring methodology:

Power supply failure
In case of any short power outages the complete landfill gas collection system incl. booster and flare is out of operation as there is no emergency power supply installed. All measurement devices are out of operation. Recorded data are secured by emergency batteries to protect internal memory for approx. 5 hours of power outage or data are fixed based on an analogue measurement device.

Failure of gas flow meter
In the unlikely event of any malfunction of the gas flow meter this measurement device and/or any other related equipment will be exchanged by spare parts as soon as possible. In case of any failure of the gas flow meter the automatic burner control unit can detect the gas flow based on the gas flow meter at the flare. This flow meter based on pressure difference can provide the flow rate in m^3/h under measurement conditions without any accumulation or correction. It can be used as an indication of the operation of the flare limiting the time of operation without a gas flow meter. This flow rate can be recorded every minute by the data-logger. In case of any long-term malfunction the spare flow meter as mentioned in B.1.1.1 can be installed for measuring the gas flow rate.

Both the flow measurement based on pressure difference and the flow measurement with the spare flow meter TERZ 94 / EC 24 guarantee a continuous data logging based on the interval of one minute.

Failure of electromechanical hour counter
In the unlikely event of any malfunction of the hour counter this measurement device and/or any other related equipment will be exchanged by spare parts as soon as possible. In case of any failure of the hour counter the automatic burner control unit detects the combustion temperature. This can be used as an indication of the operation of the flare limiting the time of operation without an hour counter. The combustion temperature is recorded every minute by the data-logger.

Failure of energy meter
In the unlikely event of any malfunction of the energy meter this measurement device and/or any other related equipment will be exchanged by spare parts as soon as possible. In case of any failure of the energy meter the energy consumption of the project is recorded by the energy meter of the public energy provider based on monthly invoicing and can be provided on request.

For the period of malfunction or failure the energy consumption of the project between last reading of recorded value during site visit by local service provider and end of the month in which the failure has been occurred the energy consumption is anticipated to be the same like metered by the energy meter of public utility. Any daily energy consumption shall be calculated by dividing the monthly energy consumption by number of operation days in this month.

Failure of landfill gas analyser
In the unlikely event of any malfunction of the landfill gas analyser this measurement device and/or any other related equipment will be exchanged by spare parts as soon as possible. In case of any failure of the oxygen analyser the plant will be shut down because of safety reasons. In case of any failure of the carbon dioxide analyser no additional trouble shooting processes are necessary as this parameter is not necessary for emission reduction calculation. In case of any failure of the methane analyser the carbon dioxide and oxygen measurements can be used for methane indication.

While analysing of oxygen in landfill gas is mainly relevant to meet safety requirements it also gives an indication on nitrogen in the landfill gas sucked in with ambient air intake via surface of the landfill site. As landfill gas production is an anaerobic process there should not be any oxygen produced by the bacteria in the landfill body. Based on this, oxygen is also indicator for stable conditions in the landfill body as well as of the degassing process.

Carbon dioxide analysing and recording is neither relevant for the process nor required by the monitoring methodology. But in regard to direct relation between methane and carbon dioxide in landfill gas this gas component is analysed for safety reasons. In case of any failure of the methane analysing the carbon dioxide and oxygen concentration give a very good indication on the actual methane concentration in landfill gas. In addition to this indication regular measurements with a handheld landfill gas analyser will be carried out and recorded manually.

In case of any failure or malfunction of complete gas analyser incl. carbon dioxide and oxygen measurement device the gas quality is measured with the portable landfill gas monitor.

Failure of data-logger
In the unlikely event of any malfunction of the Memograph the data-logger and/or any other related equipment will be exchanged by spare parts as soon as possible. In case of any failure of the data-logger the following measurement devices work independently:

- gas flow meter
- energy meter
- electromechanical hour counter

Besides these independent measurements landfill gas quality incl. methane concentration has to be recorded manually according to the trouble shooting procedure for failure of landfill gas analyser. In addition to this kind of manual recording one gas sample will be taken every week the data-logger is not in operation. The results can be taken as an average value for the gas quality during operation without data-logger. In this case separate calibration reports of the portable landfill gas monitor are part of the monitoring report.

In case of any failure malfunction of logging the data from gas analyser a linear trend-interpolation is made. This means that a linear trend between the last logged data before the failure occurred and first logged data after repair of logging system is created. The difference between last logged value and the first logged value is divided by the number of missing data. This value is added to the start value for calculating the first missing value. For calculating the second value the difference is added to the first calculated one. This is done for all missing values. Any manually recorded data collected during site visit are taken into consideration for the linear trend-interpolation as logged data to be put into data-logging protocol. These secondary data will be analysed as mentioned in B.3.

Section D: Calculation of GHG emission reductions (referring to Decision 17/CP.7, Annex H, paragraph 53 (f) and 59)

D.1 Table providing the formulas used

According to Chapter A.4.2.2and referring to the revised ACM0001 (version 04), the greenhouse gas emission reductions of this project are calculated by the following equation:

ERy = LFGflared,y * wCH4,y * DCH4 * FE * GWPCH4 – ELIMP * CEFelectricity,y [*eq. 1*]

ERy :	greenhouse gas emission reduction achieved by the project activity during a given year “y”, measured in tonnes of CO2 equivalents (t CO2e)
LFGflared,y :	quantity of landfill gas flared during the year measured in standardized cubic meters(Nm3)
wCH4,y :	average methane fraction of the landfill gas as measured during the year and expressed as a fraction, measured in Vol.-% CH4
DCH4 :	methane density expressed in tonnes of methane per cubic meter of methane (0.0007168 t CH4/ m³ CH4 at standard temperature and pressure: 273 K and 1,013 bar)
FE :	flare efficiency expressed as the fraction of the methane destroyed, measured in %
GWPCH4 :	Global Warming Potential value for methane for the first commitment period (21 t CO2e/ t CH4)
ELIMP :	electricity imported to meet the project requirements; measured in kWh

CEFelectricity,y‘ : determined to 0.668 tons CO2e/ MWh

The equation shows that the greenhouse gas emission reduction are calculated based on the following variable parameters: quantity of landfill gas flared during the year (LFGflared,y), average methane fraction of the landfill gas as measured during a year (wCH4,y) and the electricity imported (ELIMP) to run the process. The flare efficiency (FE) is measured and fixed for one year and methane density (DCH4) and global warming potential value (GWPCH4) are constant values.

Example calculation with following parameters
Period: From 12.12.2006 13:15 to 07.03.2007 15:30

Parameter	LFGflared,y	wCH4,y	DCH4	FE	GWPCH4	ELIMP	CEFelectri–city,y	**ERy**
Unit	[Nm³]	[Vol.-%]	[t CH4/ m³ CH4]	[%]	[t CO2e/ t CH4]	[MWh]	[t CO2e/ MWh]	**t CO2e**
Data type	Reading	Mean Value	Constant	Const.	Const.	Reading	Const.	**Result [EQ1]**
Value	727,723	44.20%	0.0007168	99.99%	21	10.45	0.668	**4,834.32**

D.2 Description and consideration of measurement uncertainties and error propagation

Due to the fact that the tolerances of the measurement devices for volume flow, methane concentration and power consumption are very low (< 2%) measurement uncertainties are not considered. Based on regular recalibrations (according to the specifications) of the most relevant measurement devices for volume flow and methane concentration any variances are reduced to a minimum and a calculation of error propagation based on a variance analysis of the different measurement devices is negligible.

D.3 GHG emission reductions (referring to B.2. of this document)

The amount of fugitive and remaining landfill gas emissions (project emissions) leaving the project boundary is derived by subtracting the estimated amount of captured methane from the estimated baseline emissions. Carbon dioxide (CO_2) is generated as direct source of emissions from the project by combustion of methane. As the methane is fully generated by decomposition of organic content, the appropriate emission factor is zero.

According to the PDD and in consideration of the baseline emissions, leakage and the summary of the emission reductions the project emissions for the monitoring period are **12,573 tons of CO_2e.**

Based on the monitoring sheets the total emission reduction produced during the monitoring period are the following as stated in table D.3.1 and table D.3.2:

Table D.3.1 Summary of emission reductions (in total)

Total emission reductions according to monitoring sheets	12,589.00	tons CO_2e
Total emission based on flare efficiency (99.99 %)	1.26	tons CO_2e
Total emissions by electricity consumption	15.19	tons CO_2e
Total emission reductions	**12,572.55**	**tons CO_2e**

Emissions based on flare efficiency is considered according to Methodology ACM0001 (version 4).

The electrical energy consumption EL_{IMP} required for operation of the plant incl. landfill gas compression, air ventilation, monitoring, etc. is measured by the energy meter. Referring to the emission factor of 0.668 tons CO_2e/MWh according to the PDD the annual emissions through energy consumption is calculated as the product of energy consumption in MWh/a multiplied with the emission factor.

Emissions through transportation and construction of the technical installations have been neglected within the calculation according to PDD.

Table D.3.2 Summary of emission reductions (per month) **Parameter**	**$LFG_{flared,y}$**	**$w_{CH4,y}$**	**T_{flare}**	**D_{CH4}**	**CERs**	**FE**	**GWP_{CH4}**	**EL_{IMP}**	**$CEF_{electricity,y}$**	**ER_y**
Unit	**[Nm³]**	**[Vol.-%]**	**[°C]**	**[t CH4/m³ CH4]**	**t CO2e**	**[%]**	**[t CO2e/ t CH4]**	**[MWh]**	**[t CO2e/ MWh]**	**t CO2e**
Data type	**Measured based on accumulated Gas Flow per Minute**	**Mean Value**	**Mean Value**	**Constant**	**Calculated based on accumulated Production per Minute**	**Constant**	**Constant**	**Reading**	**Constant**	**Result**
Mar-07	161,986	46.0	994.3	0.0007168	1,121	99.99	21	2.15	0.668	**1,119**
Apr-07	197,690	47.1	972.4	0.0007168	1,378	99.99	21	2.65	0.668	**1,376**
May-07	204,935	46.0	998.3	0.0007168	1,421	99.99	21	2.17	0.668	**1,419**
Jun 07	186,597	49.3	991.9	0.0007168	1,381	99.99	21	1.92	0.668	**1,380**
Jul-07	180,567	45.9	952.5	0.0007168	1,244	99.99	21	2.07	0.668	**1,242**
Aug-07	219,932	39.2	976.3	0.0007168	1,287	99.99	21	2.32	0.668	**1,285**
Sep-07	238,320	38.7	995.9	0.0007168	1,370	99.99	21	2.32	0.668	**1,368**
Oct-07	187,533	38.8	977.4	0.0007168	1,085	99.99	21	2.41	0.668	**1,083**
Nov-07	233,508	35.6	1,026.8	0.0007168	1,228	99.99	21	2.52	0.668	**1,226**
Dec-07	181,670	39.9	973.5	0.0007168	1,074	99.99	21	2.22	0.668	**1,072**
	1,992,738							22.74	**TOTAL 2007**	**12,573**

Notes:

1. From the total LFG flared in March 2007 the LFG flared from March 1st, 0:00 am until March 7th, 12:00 pm, has been deducted. (Therefore, the mean value of the flared gas for the first seven days of March 2007 has been multiplied by 7 [days] and 24 [hours].

2. The ELIMP for March, 8th, 00:00 am, until March 31st, 12:00 pm, has been calculated by dividing the ELIMP for March 2007 (in total 2,78 MWh) by 31 (number of days in March) and multiplying it by 24 (number of days in March 2007 which are relevant for the CDM certification process).

Section E: Annexes

E.1 Annex 1

Definitions and acronyms

CDM	Clean Development Mechanism
$CEF_{electricity,y}$	Carbon Dioxide emissions intensity of the electricity displaced
CER	Carbon Emission Reduction
CH_4	Methane
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide equivalent
D_{CH4}	methane density expressed in tonnes of methane per cubic meter of methane
DIN	Deutsche Industrie Norm
DNA	National Designated Authority
DOC (x)	Degradable organic carbon
DOC_F	Fraction of Degradable organic carbon dissimilated
DOE	Designated Operational Entity
DOFC (x)	Dry organic carbon fraction in year x
e.g.	for example
EEQ	Empresa Electrica Quito
$EL_{EX,LFG}$	net quantity of electricity produced from Landfill Gas exported during the year
EL_{IMP}	Electricity imported
EL_y	net quantity of electricity exported during the year
ER_y	greenhouse gas emission reduction
EU	European Union
F	Fraction by volume of the methane in the Landfill Gas
FE	Flare/ combustion efficiency
FID	Flame Ionisation Detection
FOD	First Order Decay
GGG	Green Gas Germany GmbH
GHG	Green House Gas
GWP_{CH4}	Global Warming Potential
i.e.	that is
ID	Identification
IPCC	Intergovernmental Panel on Climate Change
IR	Infra-red
K	Degradation constant
KEMA	KEMA Power Generation + Substainables Netherlands B.V.
kg_C	kilogram carbon
kg_{CH4}	kilogram methane
kgCO2	kilogram Carbon Dioxide
kWh	kilo Watt hours
LFG	Landfill Gas
$LFG_{flared,y}$	Landfill gas quantity flared per year
LFGTE	Landfill Gas To Energy
$LFG_{total,y}$	Total amount of Landfill Gas captured
m^3	Cubic meter

MCF (x)	Methane correction factor
$MD_{project,y}$	amount of methane actually destroyed/combusted during the year
$MD_{reg,y}$	amount of methane that would have been destroyed/combusted during the year
mg/m³	Milligram per cubic meter
MSW (x)	Municipal solid waste disposed in year x
MWh	Mega Watt hours
NDIR	Non-Dispersive Infrared-Photometers
Nm³	standard cubic meters
O_2	oxygen
P	Pressure of Landfill Gas
PDD	Project Design Document
PEHD	Poly Ethylene High Density
$p_{LFG, dis.}$	Pressure of Landfill Gas at discharge side
$p_{LFG, suc.}$	Pressure of Landfill Gas at suction side
QA	Quality Assurance
QC	Quality Control
ref.	referring
Rev	Revision
T	Temperature of Landfill Gas
t Waste	tonnes waste
t_C	tonnes carbon
T_{flare}	Combustion temperature
$T_{LFG, dis.}$	Temperature of Landfill Gas at discharge side
$T_{LFG, suc.}$	Temperature of Landfill Gas at suction side
TÜV	Technischer Überwachungsverein
tWaste	Tonnes of Waste
UNFCCC	United Nations Framework Convention on Climate Change
UV	Ultra-Violet
VER	Verified Emission Reductions
$w_{CH4,y}$	Methane fraction in the Landfill Gas
Y	year

E.2 Annex 2

Technical Specifications

E.2.1 Annex 2.1

Operation, Monitoring & Maintenance Schedule for the Gas Collection System

E.2.2 Annex 2.2

Flow Meter INSTROMET Q75
Flow Meter RMG TERZ 94

E.2.3 Annex 2.3

Gas Volume Corrector INSTROMET Model 999-P
Gas Volume Corrector RMG EC 24

E.2.4 Annex 2.4

Hour meter Bauser

E.2.5 Annex 2.5

Testo 300 XL

E.2.6 Annex 2.6

Gas Analysing System NGA5

E.2.7 Annex 2.7

Portable Gas Monitor GA94

E.2.8 Annex 2.8

Power Meter Diris Am

E.2.9 Annex 2.9

Visual data manager Memograph

E.2.10 Annex 2.10

Booster station

E.3 Annex 3

Calibration Protocols

E.3.1 Annex 3.1

Calibration Certificate Q 75
Calibration Certificate TERZ 94

E.3.2 Annex 3.2

Calibration Certificate Testo 300 XL

Please refer to “Report on the carrying out of emission measurements at the high-temperature flare system at Zámbiza waste disposal site”. Calibration Certificate Testo 300 XL can be found on page 9 following.

E.3.3 Annex 3.3

Calibration Certificate Test Gas

E.3.4 Annex 3.4

Calibration Certificate Portable Gas Monitor GA94

E.3.5 Annex 3.5

Calibration Report NGA 5

E.4 Annex 4

Reporting

E.4.1 Annex 4.1

Visit Reports

Visit reports can be obtained on request.

E.4.2 Annex 4.2

Monthly Overview

E.5 Annex 5

Monthly data log

E.6 Annex 6

Certificate for Training