

UNFCCC Clean Development Mechanism Monitoring Report

Copiulemu landfill gas project
(Center for the Storage and Transfer, Recovery and Control of Waste,
Treatment and Disposal of Industrial and Household Waste)

CDM registration number: 0096

Monitoring period: 01/12/2006 - 31/07/2007

Document ID: CDM0096-M3

Date: 18th October 2007

Version: 2

Project background

Copiulemu landfill gas project (Improvement of Gas Extraction System in Copiulemu Dump) has been registered as CDM project by the UNFCCC on 03 Dec 2005 under reference number 0096.

Further background on this project can be found in the PDD and associated documents, which are available on the UNFCCC website:

<http://cdm.unfccc.int/Projects/DB/DNV-CUK1126875537.72/view.html>

Party involved is Chile (Host Country). The project participant is Copiulemu S.A., a Chilean company specialising in the treatment of industrial and household waste substances in the 8th Region.

Monitoring background

Basis for the calculation of emission reductions is the monitoring plan in the Project Design Document (PDD). The calculation of emission reduction in the PDD applied methodology ACM0001 (version 01 of 03/09/04).

The validation report specifies that detailed monitoring procedures need to be developed and implemented prior to commencement of the project. Such procedures have been made operational in the Monitoring Protocol Version 7. This document is necessary to make the monitoring plan operational but is not an official document in the CDM project cycle.

Monitoring results

Emission reductions:

The calculated emission reductions for the monitoring period amount to **16,403 tCO₂** equivalent (see spreadsheet results copied below).

Covered monitoring period

This is the second monitoring report of this project and covers the period December 1st 2006 to July 31st 2007.

Presentation of monitoring results - spreadsheets

All monitoring data have been included in an Excel workbook 'Spreadsheet ERs from Copiulemu', which includes:

1. Overview. This worksheet contains an overview of the content of the entire workbook.
2. Factors & Data Variables. A list of the default values and/or values defined in the PDD which are used to calculate emission reductions.
3. Input 2006 and Input 2007. Contains the raw monitoring data generated in the period of reference by the site.
4. ERs Calculation 2006 and ERs Calculation 2007. Shows the calculation of emission reductions on the basis of raw data. Missing values or corrected values have been colour-coded. Moreover, a summary of total emission reductions, the project emissions and the net emission reductions for the period covered under this report is also included.

Calculation methodology

The calculation methodology of emission reduction for this project is summarized below.

Calculation took place in the following steps for the data generated by each of the flare systems:

1. Total flow is recorded in Nm^3 each day.
2. Methane content (%vol) of landfill gas is measured and recorded daily.
3. Daily flow is multiplied by daily methane content, which in turn is multiplied by density of CH_4 to obtain tCH_4 ; Result from 3. Is multiplied by flare efficiency to obtain tCH_4 actually flared ($\text{MD}_{\text{flared},y}$). The flare efficiency is established from a yearly check, calculated as follows: $(\% \text{ methane in LFG} - \% \text{ methane in exhaust} - 0,5) / \% \text{ methane in LFG}$: 98,78%
4. Result from 3. Is multiplied by GWP of CH_4 to obtain $\text{MD}_{\text{project}, y}$ in tCO_2eq .
5. Result from 4. Is multiplied by GWP of CH_4 as well as the AF (17%) to obtain $\text{MD}_{\text{reg}, y}$ in tCO_2eq i.e. the amount of tCO_2eq that would have already been flared without the project activity.
6. kWh consumed from the grid for the project activity per month are transformed into MWh and multiplied by the grid emission factor as stated in the PDD (0,987 $\text{tCO}_2\text{e/MWh}$) to obtain emissions from electricity consumption in tCO_2 .
7. Result from 6. and 7. Are subtracted from result from 5. To establish daily tCO_2eq reduced i.e. daily net emission reductions.
8. Data from 4.-8. Is aggregated per month.
9. Total net emission reductions per month are added to obtain total overall net emission reductions for the specified time frame to be included in the monitoring report.

Special event:

In the period of the 01st to the 23rd of February 2007, there was a mechanical failure of the flare. As it can be appreciated in the calculations, no CERs were claimed for this period.

The monitoring report has been checked by management to ensure that the information contained within is correct.

Table 1: Summary Data

YEAR								
2006 - 2007	Aggregated results	MDflared, y	MDproject y	MDreg y	Aggregated EGy	Emissions from Electricity Consumption	ER y	
Month	tCH ₄	tCH ₄	tCO _{2e}	tCO _{2e}	MWh	tCO _{2e}	tCO _{2e}	
DEC	115.89	114.48	2,404.18	408.71	2.00	1.97	1,993	
JAN	125.70	124.18	2,607.86	443.34	2.97	2.94	2,162	
FEB	17.73	17.52	367.86	62.54	0.34	0.33	305	
MAR	128.16	126.61	2,658.88	452.01	3.23	3.19	2,204	
APR	132.57	130.96	2,750.21	467.54	3.69	3.64	2,279	
MAY	120.06	118.61	2,490.83	423.44	3.96	3.91	2,063	
JUN	132.07	130.47	2,739.93	465.79	3.86	3.81	2,270	
JUL	181.84	179.64	3,772.34	641.30	4.95	4.89	3,126	
			19,792.08	3,364.65			24.68	16,403