



UNFCCC Clean Development Mechanism Monitoring Report

Nanjing Tiangjingwa Landfill Gas to Electricity Project

CDM registration number 0071

Monitoring period 20/10/06– 29/10/07

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Version 01

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Project background

Nanjing Tiangjingwa Landfill Gas to Electricity Project has been registered as CDM project by the UNFCCC on 18 December 2005 under reference number 0071.

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-CUK1129289693.13/view.html>.

Parties involved are China (Host Country) and the United Kingdom of Great Britain and Northern Ireland (other Parties). The project participants are Nanjing Green Waste Recovery Engineering Co., Ltd [China] and EcoSecurities Ltd [UK].

Monitoring background

Basis for the calculation of emission reductions is the monitoring plan in the Project Design Document [PDD]. Applicable methodologies are methodology –ACM0001: Consolidated methodology for landfill gas project activities (version 02 of 30/09/05) and methodology – AMS-I-D: Grid connected renewable electricity generation (version 08 of 03/03/06). The validated monitoring plan has been made operational by the project developer in the Monitoring Protocol [CDM project management and operation manual, June 2005]. This document is necessary to make the monitoring plan operational, but is not an official document in the CDM project cycle.

The project has installed an extra generator of 0.45 MW on 9 March 2007. This brings the total installed capacity of the generation capacity on 1.55 MW. The total capacity is therefore still under the limit of 6 MW stated in the PDD.

Monitoring results

Emission reduction

The calculated emission reductions amount to 50,050 ton CO₂eq. A summary of the monitoring results is included in the Annex of this report.

Monitoring period covered

This is the third monitoring report of this project. It covers the period 20/10/06 to 29/10/07.

Presentation of monitoring results - spreadsheets

All monitoring data have been included in Excel workbooks. This includes:

1. Summary. This worksheet contains an overview of the calculation of emission reductions and general notes [Annex 1].
2. Calculations. Shows the calculation of emission reductions on the basis of raw data. Missing values or corrected values have been colour-coded.
3. Raw data. Contains the raw monitoring data submitted by the project developer.

Calculation methodology

Calculation took place in the following steps:

1. Calculate time difference between 2 observations of flow and methane. Flow of landfill gas and methane content of the landfill gas are normally recorded every hour.
2. Calculate the flow in landfill gas flow in m³/h under standard conditions.
3. Multiply time difference with calculated flow to get the LFG flow in m³/time period.
4. Multiply with vol% methane to get m³ of CH₄ per time period.
5. Multiply with the density of CH₄ to get ton CH₄ per time period.
6. Apply the adjustment factor AF (5%) to calculate MDreg per time period.
7. Calculate MDelectricity [=MDproject] and calculate [MDproject – MDreg] * 21
8. Take net MWh delivered to the grid from the records of the power company and multiply with the emissions factor for displaced power (here: 0.874 tCO₂/MWh).
9. Add the subtotals of step 7 and 8 in order to get the total emission reduction.

Issues from previous verifications

The second verification of this project [Tuv-Sud Industrie Service Gmbh, report nr. 906013 Version 1 of 20 November 2006] resulted in the following forward action requests:

- Cover and verify the amount of electricity supplied to the grid in the period from 20th to 29th of October in 2006 in the following monitoring period;
- Always extend the monitoring period to 29th of one month.
- Recommend to install the metering equipment for flare.

The following actions were taken:

- The amount of electricity supply in the period from 20th to 29th of October in 2006 is covered in this monitoring period.
- The flare has not been in operated during the monitoring period; no flow meter has been installed. Extra landfill gas was combusted in the extra generator that was installed.

ANNEX – SUMMARY OF MONITORING RESULTS

CDM 0071-M3
Ecosecurities, 02 November 2006

Monitoring report nr. 3
From 2006-10-20 0:28
To 2007-10-29 23:30
days 375

Activity data		Notes	
Landfill gas to power generation	LFGelectricity	5,224,935 Nm3	1
Landfill gas to flare	LFGflare	- Nm3	2
Landfill gas to heat	LFGthermal	- Nm3	3
Power displaced	EG	9,005 MWh	4

Calculations		Notes	
Methane combusted	MDelectricity	2,114 tCH4	5
	MDflared	- tCH4	6
	MDthermal	- tCH4	7
	MDproject	2,114 tCH4	8
	AF	5%	9
	MDreg	106 tCH4	10
Avoided CO2 emissions grid	EG	9,005 MWh	11
	CEFelectricity	0.874 tCO2/MWh	12
	Displaced emissions from grid	7,870 tCO2	13
Total emission reduction	ER	50,050 tCO2eq	14

Notes

- 1 LFGelectricity = LFGtotal
- 2 The flare has not been used during the crediting period
- 3 Not applicable
- 4 From power company bills
- 5 LFGelectricity * %CH4 * density CH4 tCH4/Nm3
- 6 The flare has not been used during the crediting period
- 7 Not applicable
- 8 MDelectricity = MDproject
- 9 Adjustment factor, as validated PDD
- 10 MDproject * AF
- 11 From power company bills
- 12 As validated PDD
- 13 EG * CEFelectricity
- 14 MDproject - MDreg)*21 + displaced emissions from grid