

**ANNUAL REPORT TEMPLATE FOR LANDFILL GAS PROJECTS (PRE 1)****Project Title: PNCC Awapuni landfill Gas to Energy Project****Description of Project: Conversion of landfill Gas collected from the closed Awapuni landfill to electricity****Company: Palmerston North City Council****Year Reported on: 2011****(1) Break down and total of emissions generated during construction using the emission factors listed in Schedule 2 (if applicable to the year being reported on).**

<b>CONSTRUCTION EMISSIONS</b>			
<b>Element</b>	<b>Usage</b>	<b>Embodied emission factors</b>	<b>tCO<sub>2</sub>-e</b>
Diesel	3650l	0.002617 tonnes CO <sub>2</sub> -e per litre	9.5521
Petrol		0.002298 tonnes CO <sub>2</sub> -e per litre	
Electricity purchased		600 tonnes CO <sub>2</sub> -e per GWh	
Iron/Steel	0.5T	1.95 tonnes CO <sub>2</sub> -e per tonne	0.975
Aluminium		1.74 tonnes CO <sub>2</sub> -e per tonne	
Cement		0.48 tonnes CO <sub>2</sub> -e per tonne	
			<b>Total 10.5271</b>

**(2) Break down and total of emissions from the operation of your project, once emission reductions have commenced.**

<b>OPERATIONAL EMISSIONS</b>			
<b>Element</b>	<b>Annual Usage</b>	<b>Factor</b>	<b>tCO<sub>2</sub>-e</b>
Diesel	450l	0.002617 tonnes CO <sub>2</sub> -e per litre	1.1777
Petrol	145l	0.002298 tonnes CO <sub>2</sub> -e per litre	0.3332
Electricity purchased	0	600 tonnes CO <sub>2</sub> -e per GWh	0
Iron/Steel		1.95 tonnes CO <sub>2</sub> -e per tonne	
Aluminium		1.74 tonnes CO <sub>2</sub> -e per tonne	
Cement		0.48 tonnes CO <sub>2</sub> -e per tonne	
			<b>Total 1.5109</b>

*Reminder: Emission Reductions cannot exist until after the requirements of clause 4.4 of the Project Agreement have been met.*

**(3) (a) If the project produces electricity, a record of the quantity of electricity exported by the project during the year.**

**(b) If the project produces steam/hot water, a record of the quantity and energy content of the steam/hot water generated by the project during the year<sup>1</sup>.**

**A statement of the heat plant efficiency and the equivalent quantity of fuel displaced**

Element and Measure	Total
(i) Electricity (GWh)	4.0219
OR	
(ii) Steam (tonnes)	
(iii) Steam (energy content)	
(iv) Hot Water (tonnes)	
(v) Hot water (energy content)	
(vi) Heat Plant efficiency	
(vii) Equivalent quantity of fuel displaced <sup>2</sup>	

**(4) (a) If the project produces electricity, identify and measure any other generation that is not part of the project that flows through the above meters.** (This generation to be subtracted from the metered electricity generation to determine the electricity output of the project).

Measure	Total
Electricity (GWh)	1.7769

**(b) If the project produces steam/hot water, identify and measure any other steam or hot water generation that is not part of the project that flows through the above meters.** (This generation to be subtracted from the metered steam/hot water generation to determine the heat output of the project).

Measure	Total
(i) Steam (tonnes)	
(ii) Steam (energy content)	
(iii) Hot Water (tonnes)	
(iv) Water (energy content)	

**(5) Tonnes of methane combusted (if applicable).** This will be calculated from the weekly methane content measurements in accordance with the methodology set out in Schedule 2 of the Project Agreement. Please append the raw data, calculations and explanatory notes.

Measure	Total
Tonnes methane combusted <sup>3</sup>	881.9523

<sup>1</sup> Need to take account of any condensate return

<sup>2</sup> Calculated after subtracting any figures recorded in 4 (b)

<sup>3</sup> Corrected for temperature, pressure and water content

(6) A calculation showing tonnes of CO<sub>2</sub> emitted by the project as a result of methane combusted. (Tonnes of methane combusted; multiplied by 44/16).

Measure	Total CH <sub>4</sub>	Total t CO <sub>2</sub> -e
Tonnes CO <sub>2</sub> emitted	881.9523	2425.3688

(7) A record of the CO<sub>2</sub>-e Emission Reductions resulting from the Project during the year determined by the relevant emission factors as per Schedule 2 of the Project Agreement.<sup>4</sup> The construction emissions should be subtracted from this total. Once emission reductions commence the total of any operational emissions should be subtracted from the total.

Element	Annual Production	Factor	t CO <sub>2</sub> -e
Electricity (GWh) (3)(a)(i)	4.0219	600 tonnes per GWh	2,413.1400
OR			
Steam/hot water (tonnes) (3)(b)(ii)/(3)(b)(iv)		As per schedule	N/A
Steam/hot water Energy content (heat output) (3)(b)(iii)/(3)(b)(v)		As per schedule	N/A
Methane Combusting (6)	881.9523	21 t CO <sub>2</sub> -e per tonne methane	18,520.9983
		<b>Total</b>	20,934.1383
		Less construction emissions and/or other project emissions (1),(2)	12.0380
		Less tonnes of CO <sub>2</sub> emitted by the project as a result of methane combusted	2425.3688
Less other generation not part of the project, recorded by the meters (GWh) (4)(a)	1.7769	600 tonnes per GWh	1,066.1400
		Less steam/hot water energy content (heat output) not part of the project (4)(b)	N/A
		<b>Net Emission Reductions for the year</b>	17,430.59

<sup>4</sup> Conversion into tCO<sub>2</sub>-e

The tCO<sub>2</sub>-e in respect of each of the quantities used in, purchased by or introduced into the project, the electricity or steam/hot water generated and the methane combusted in the project will be calculated according to the conditions and emission factors set out in Schedule 2 of the project agreement.

**(8) Emission Units claimed for the year using the emission ratio "C" set out in Clause 5.1 of the Project Agreement.**

**Emission Units claimed for 2011 = 17,430**

**(9a) Advice on the location of the meters.** For example, at the turbine(s), the revenue meter point of entry into the lines network or the national grid.

**The meters are located at the site of the generator and at the ICP of the WWTP with the Powerco Network.**

**(9b) Advice on how the generation was measured.** For example, metered directly, or using meter readings and adjusting for losses.

**The generation was metered directly from the LV terminals at the generator.**

**(9c) Advice on the quantity of electricity generated or exported.** Attach a relevant statement (or statements) from the Reconciliation Manager or an Electricity Commission Approved Half Hour Data Administrator identifying the volume of electricity used in determining the net emission reductions in section 7.

**See attached letter from Mercury Energy.**

**(10) Evidence that the metering and recording equipment has been certified by a reputable, independent quality assurance service provider.** Attach copies of relevant certificate(s) of compliance for meters/metering installations for the full 12 months of the reporting year.

**See attached certificate.**

**(11) A statement detailing anything that has, or has the potential, to be an impediment to achieving the agreed emission reductions during commitment period one. This should include circumstances where the final milestone is achieved later than the final milestone date.**

**There are on-going issues regarding poor quality and volumes of LFG being abstracted from the closed landfill. There is some risk that PNCC will not be able to meet the emission reductions set out in the PRE agreement.**

**(12) A statement identifying if you have commissioned a verification report for this Annual Report.**

**DNV Australia has been engaged to undertake verification of our emission reductions for 2011 and this will be supplied to MfE when it is received.**

**(13) Checklist: Information and Documents to be provided.**


<b>Section</b>	<b>Supporting information</b>	<b>Tick if included / attached</b>	<b>File name(s)</b>
1	For construction emissions (eg fuel use documentation)	√	W & W Carbon Credits Annual Verification 2011 email from Stewart Hay CO2 emissions
2	For emissions from operation (eg fuel use documentation)	√	See above.
3	For quantity of electricity exported (eg raw data, calculations, explanatory notes):	√	Water & Waste Carbon Credits Annual verification 2011 Emission Reduction calcs
4	For other generation	√	Letter attached
5	For methane combusted (eg raw data, calculations, explanatory notes):	√	Water & Waste Carbon Credits Annual verification 2011 Emission Reduction calcs
9(c)	Metering - Electricity Market Reconciliation Manager statement or similar:	√	Hard copy attached
10	Certificate(s) of compliance for meters/metering installations for the full 12 months of the reporting year.	√	Hard copy attached
12	Verification report		
15	All Unit Transfer details	√	See below

	Hard Copy of Annual Report dated and signed	√	
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**(14) A statement identifying that this report:**

- has been prepared using the methodology of Schedule 2 (Methodology for Determining Emission Reductions) of the Project Agreement (or otherwise where another measure is used as a proxy measure as detailed in section ... of this report)
- meets all other requirements of Schedule 4 (Contents for Annual Reports) of the Project Agreement.

I Philip David Burt confirm that to the best of my knowledge the majority of the emission reductions claimed has been calculated in accordance with the methodology set out in schedule 2 of the Project Agreement and meets the requirements of schedule 4. Proxy calculations have been used to calculate the emission reductions for the period 1 January to 11 January & 23 April to 10 May due to a data collection error and are included in the attached spreadsheet.

**Signature:** 

**Name:** Philip Burt

**Position:** Wastewater Assets Engineer

**Date:** 14/3/2012

**(15) Unit Transfer Details**

Please Note: To obtain the emission reduction units you will need a NZEUR account to transfer the agreed/allowed Emission Units.

1	Project name:	PNCC Awapuni LFG to Energy Project
2	Date of project agreement:	29 March 2004
3	Name of the project developer/company:	Palmerston North City Council
4	Project ID:	NZ-1000005
5	Calendar year for which units are being transferred:	2011
6	Account identifier:	NZ-1053
7	Project Participant (investor): <sup>5</sup>	Kommunalkredit Public Consulting GmbH, Austria
8	Quantity of units (refer to section 8 of this report):	17,430.00
9	Type of units:	ERU's

<sup>5</sup> Project Participant (investor) is the party you have an agreement with to transfer Emission Reduction Units (ERUs)