ANNUAL REPORT FOR GEOTHERMAL PROJECTS (PRE1)

Project Title: Rotokawa Geothermal Project (Nga Awa Purua)

Description of Project: Geothermal Power Generation

Company: Mighty River Power

Year Reported on: January - December 2010

(1) (a) 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).* **PRE 1 contracts emission factors are set out in the table below.**

CONSTRUCTION EMISSIONS			
Element	**Usage**	**Embodied emission factors**	**tCO_2-e**
Diesel		0.002617 tonnes CO2-e per litre	N/A
Petrol		0.002298 tonnes per CO2-e per litre	N/A
Electricity purchased		600 tonnes CO_2-e per GWh	N/A
Steel		1.95 tonnes CO2-e per tonne	N/A
Aluminium		1.74 tonnes CO2-e per tonne	N/A
Cement		0.48 tonnes CO2-e per tonne	N/A
Any other elements			
			Total

(2) (a) Once abatement commences the following elements are to be recorded, if used in the operation of your project. PRE 1 contracts emission factors are set out in the table below:

Element	**Annual Usage**	**Factor**	**tCO_2-e**
Diesel	588,417.47	0.002617 tonnes CO_2-e per litre	-1,539.89
Petrol	36,177	0.002298 tonnes CO_2-e per litre	-83.13
Electricity purchased	0.88	600 tonnes CO_2-e per GWh	-528.00
Steel and iron	611.60	1.95 tonnes CO_2-e per tonne	-1,192.63
Aluminium	21.00	1.74 tonnes CO_2-e tonne	-36.54
Cement	1009.30	0.48 tonnes CO_2-e tonne	-484.46
			Total -3,864.65

(3) Record of the quantity of electricity exported by the project during the year.

Element and Measure	Total
Electricity (GWh)	997.60

(4) Record of any other generation that is not part of the project that flows through the meters.

Measure	Total
Electricity (GWh)	0

(5) A record and calculation of the CO_2 content of the geothermal steam measured at a reasonable frequency, measured and recorded at the input side of the turbine(s). Please append raw data and calculations.

Measure	Total
Tonnes (CO_2e)	-127,950.28

(6) (a) A record of the Emission Reductions resulting from the Project during the year determined by the relevant emission factors as per Schedule 2 of the Project Agreement. The construction emissions should be subtracted from this total. Once abatement commences the total of any emissions recorded in (2) above should also be subtracted. *(If applicable to your project).* **The tCO_2-e contained in the geothermal steam used in the project and not re-injected into the field should also be subtracted.**

Element	Annual Production	Factor	t CO_2-e
Electricity (GWh) (3)	997.6	600 tonnes per GWh	598,560.00
		Less construction emissions and/or other project emissions (1), (2)	-3,864.65
Less other generation not part of the project, recorded by the meters (GWh) (4)		600 tonnes per GWh	
		Less tCO_2 contained in the geothermal steam used and not re-injected into the field	-127,950.28
		Less construction emissions from 2008 and 2009	-56,754.5
		Net Emission Reductions for the year	409,990.57

(b) If another measure is used as a proxy to determine Emission Reductions this should be stated and the amount of that measure should also be included in this section together with supporting information.

Steam data collected during January and February 2010 was not used to calculate the annual emissions factor. This is because the samples taken were not under normal plant operating conditions.

The February emissions factor is approximately 50% lower than that used in the above calculation (0.0106 tCO2e/t steam).

The emissions factor was calculated using March - December data and applied over the whole year (0.0189 tCO2e/t steam).

Using the proxy measure results in reported emissions increasing by 3,060.17 tonnes.

Detailed calculations can be found in the supporting excel spreadsheet – NAP emissions calculation CY2010 final.

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

409,990.57 x 1.00 = 409,990.57

(8) (a) Advice on the location of the meters. For example: at the turbines, the revenue meter point of entry into the lines network, or the national grid. *(Metering is to take place as close as possible to the point where the electricity is injected into the lines network or national grid, as the case may be).*

Documentation outlining the location of revenue meters and steam flow meters is attached.

(8) (b) 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 6).*

The attached email from the reconciliation manager at the Mighty River Power confirms the volumes of electricity exported to and extracted from the NAP2201 GXP during the period of 1 Jan 2010 to 31 Dec 2010.

(9) 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 report year.)*

Documentation showing the certification of electricity revenue meters, steam flow meters, and laboratory accreditation certificates are attached.

(10) 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.)*

Nothing has been identified that could have the potential to be an impediment to achieving the agreed emission reductions during commitment period one.

(11) A verification report for this year (if undertaken by the participant)

(12) This report has been prepared using the methodology of Schedule 2 – "Methodology for Determining Emissions Reductions" and meets all the other requirements of Schedule 4 – Contents for Annual Reports of the Project Agreement 29 March 2004 including Project Agreement Amendment 1 and 2.

However, it must be noted that due to the commissioning process, steam flow and steam composition data from January and February 2010 is not representative of normal operating conditions. A proxy measure was therefore used to calculate emissions during January and February.

January and February data was excluded from calculating the 2010 emissions factor (0.0189 tCO2e/t steam). This emissions factor was then applied to the January and February steam flow and resulting emissions added to the March-December total.

Signature: 

Name: Bruce MILLER

Position: Head of Wholesale Markets

Date: 5/5/11

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:	Rotokawa Geothermal Project
2	Date of project agreement:	29 March 2004 subsequent amendments on 10 June 2005 and 18 February 2008
3	Name of the project developer/company:	Mighty River Power Limited
4	Project ID:	NZ-1001-INT
5	Calendar year for which units are being transferred:	2010
6	Account identifier:	NZ-1194
7	Project Participant (investor)[1]	Deustche Bank AG, London Branch
8	Quantity of units (refer to section 7 of this report):	409,991
9	Type of units (AAUs or ERUs)	409,991 ERUs

[1] Project Participant (investor) is a party that the project developer/company has an agreement to transfer the emission reduction units (ERUs) or assigned amount units (AAUs) to.