



meridian

Confidential and commercially sensitive

29 January 2010

The Chief Executive
Ministry for the Environment
PO Box 10362
Wellington

Attention: Catherine Moss

re: Transfer of emission reduction units for Meridian's White Hill Wind Farm

Dear Catherine

Meridian Energy Ltd is pleased to deliver this report outlining the emission reduction benefits of the White Hill wind farm during the 2009 calendar year. This completes the reporting requirements for the 3rd calendar year of electricity generation by the wind farm as required by the 2005 Project Agreement between Meridian Energy Ltd. and the Crown.

Meridian would like to request the transfer of 95,075 emission reduction units to Meridian in accordance with the process outlined in the Project Agreement.

If you have any questions or queries please call me on the number below.

Yours sincerely,

Christopher More

Product and Market Development Manager

DDI: 04 381 1398

cc: Russel Thomas – Asset Manager Wind, Meridian Energy
Attachment: White Hill Wind Farm 2009 Annual Emission Reduction Report

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White Hill Wind Farm

2009 Annual Emission

Reduction Report

Version 1
29 January 2010

CONFIDENTIAL

White Hill Wind Farm 2009 Annual Emission Reduction Report

1 Background

This report fulfils the reporting obligations set out in the Project Agreement between Meridian and the Crown dated 9 May 2005.

2 The Project

White Hill is located six kilometres south-east of Mossburn in Southland and is sited on an area of mostly forestry land approximately eight kilometres by three kilometres.

It was fully commissioned in October 2007. Twenty-nine 2MW turbines at White Hill generate enough electricity for 30,000 average homes and the wind farm connects directly to the local area network owned by The Power Company and operated by PowerNet.



Key dates during the development and construction of White Hill Wind Farm	
Project announced and public consultation commenced	September 2004
Resource consents granted	December 2004
Karakia and construction commencement ceremonies	March 2006
Emission reductions and electricity generation commence	8 June 2007
Official opening by Prime Minister	8 June 2007
Wind farm fully commissioned	1 October 2007

3 Emissions generated – 2009 calendar year

The emissions generated have been assessed using the methodology of Schedule 2 – Methodology for Determining Emission Reductions, of the Project Agreement dated 9 May 2005.

This schedule requires that Meridian records the quantities of petrol and diesel used in the construction of the project, and the quantities of cement, iron, steel and aluminium introduced into the project during the construction and operation of the project.

The White Hill wind farm was operational during the 2009 calendar year. Emissions from sources other than cement, iron, steel and aluminium will be reported in Meridian's GHG Inventory which is prepared on a financial year basis.

There were no emissions generated on site at White Hill wind farm in 2009 from cement, iron, steel or aluminium.

Emissions generated – 2009 calendar year (operational emissions)			
Material	Quantity	Emission factor¹	Emissions generated
Diesel	11,577 litres	0.00271 tCO ₂ /litre	Not required to be reported
Petrol	120 litres	0.00232 tCO ₂ /litre	Not required to be reported
Iron and steel imported	0 tonnes	0 tCO ₂ /tonne	0 tCO ₂ e
Iron and steel produced in New Zealand	0 tonnes	2.01 tCO ₂ /tonne	0 tCO ₂ e
Aluminium imported	0 tonnes	0 tCO ₂ /tonne	0 tCO ₂ e

¹ Emission factor as prescribed in Schedule 2 of the Project Agreement

Emissions generated – 2009 calendar year (operational emissions)			
Material	Quantity	Emission factor¹	Emissions generated
Aluminium produced in New Zealand	0 tonnes	1.62 tCO ₂ /tonne	0 tCO ₂ e
Cement	0 tonnes	0.46 tCO ₂ /tonne	0 tCO ₂ e
Total operational emissions generated 2009			0 tCO₂e

4 Electricity exported – 2009 calendar year

This table shows the total electricity exported from White Hill wind farm in 2009 as recorded at the Grid Injection Point by The Marketplace Company (MCo)

Revenue Meter	kWh
Total electricity generated (kWh)	170,921,065

Appendix 1 sets out the generation from each turbine and a combined generation total of 181,003,853 kWh. The total electricity output of the Project as measured by the Revenue Meter is 10,112,788 kWh less than this combined total because the revenue meter output incorporates generation losses. Generation losses include wind farm distribution losses (i.e. cables between turbines), transformer losses, and local service supply at the White Hill substation. This is within expected limits.

There is no other generation that is not part of the project that flows through the above meters.

5 Emission reductions generated – 2009 calendar year

The table below sets out the emission reduction units generated by the project to date. This is calculated using the methodology prescribed in Schedule 2 of the Project Agreement.

Element	Annual Production	Factor	t CO ₂ -e
Total electricity generation (GWh)	170.921065 GWh	625tCO ₂ e/GWh	106,825.67
Less other generation not part of the project, recorded by the meters (GWh)	0 GWh	Less reported operational emissions	0
		Net emission reductions generated for the year	106,825.67

6 Emission units claimed – 2009 calendar year

106,825.67 net emission reductions x 0.89² = 95,075 Emission Units claimed.

Meridian claims 95,075 ERUs for the 2009 calendar year.

7 How the generation is measured

The total electricity generated is recorded at the Grid Injection Point by The Marketplace Company (MCo).

Appendix 2 contains “a report which verifies the total electricity generated from the Project and injected into the national transmission system in that Year by the person responsible for the reconciliation of electricity injected into and taken from electricity networks in New Zealand or any other person authorised to administer and certify the reconciliation of such data by that person”.

Appendix 3 contains evidence that the metering and recording equipment has been certified as compliant by a reputable, independent quality assurance service provider.

² Ratio specified as C in clause 5.1 of the Project Agreement

8 Statements

As at 31 December 2009, nothing has, or has the potential, to be an impediment to achieving the agreed emission reductions during the first commitment period.

This report:

- has been prepared using the methodology of Schedule 2 – Methodology for Determining Emission Reductions, of the Project Agreement dated 9 May 2005.
- meets all other requirements of Schedule 4 - Contents for Annual Reports, of the Project Agreement dated 9 May 2005.

Signature:



Name: Chris More

Position: Product and Market Development Manager

Date: 29 January 2010

9 Unit Transfer Details

1	Project name:	Project White Hill
2	Name of the project developer:	Meridian Energy Limited
3	Project ID:	NZ- 1000002
4	Calendar year for which units are being transferred:	2009
5	Participant's account identifier:	NZ-1024
6	Quantity of units:	95,075
7	Type of units:	ERUs



Appendix 1

Generation for each turbine – 2009
(This data is generated by the Vestas Online database)

Parkunit	Actual Output kWh
WHL12	6,463,309
WHL13	6,235,714
WHL14	6,198,437
WHL15	6,660,547
WHL16	6,515,436
WHL17	6,650,624
WHL21	6,031,363
WHL22	6,597,302
WHL23	5,971,041
WHL24	6,446,691
WHL25	7,136,220
WHL31	5,664,042
WHL32	5,856,647
WHL33	5,748,523
WHL34	3,952,083
WHL41	6,555,914
WHL42	6,770,893
WHL43	6,906,466
WHL44	6,442,827
WHL45	6,502,082
WHL46	6,482,055
WHL47	6,647,186
WHL51	5,253,964
WHL52	6,036,151
WHL53	6,249,239
WHL54	5,864,183
WHL55	6,796,441
WHL56	6,069,388
WHL11	6,299,085
Total	181,003,853



Appendix 2

Letter from The Marketplace Company confirming net generation from the White Hill wind farm.



27 January 2010

Toni Nevin
Meridian Energy Limited
P O Box 2128
Christchurch

Dear Toni

White Hills windfarm generation for the 2009 calendar year

The reconciliation manager wishes to advise Meridian Energy Limited, that the total generation recorded for the calendar year of 2009 for White Hills was 170,921,065 kWhs. The volume reported is net generation, i.e. injection quantities less any load at White Hills as supplied by Meridian Energy to the reconciliation manager.

If you have any questions regarding this letter please call me on 04 498 0044.

Yours sincerely

A handwritten signature in black ink, appearing to read "Zane Doran".

Zane Doran
For and on behalf of
The reconciliation manager

we make marketplaces work

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Home Page <http://www.m-co.co.nz> Email info@m-co.co.nz



Appendix 3

The metering equipment is certified in accordance with the Electricity Governance Rules 2003.

The certificates for the White Hill meters follow.



Meter Test House



CERTIFICATE OF COMPLIANCE

Certificate Number: 34013

Installation Name: White Hills Wind Farm

Equipment Certified: Metering Installation

Component Information:

<u>Component:</u>	<u>Serial No.:</u>	<u>Certification No.</u>
METER	PI-0611A329-01	34013M
CT	0693106, 0693105, 0693104	34013C
VIT	0690324, 0690325, 0690326	34013V

Conditions of Issue: Nil

Installation Category: 6

This certifies that the above metering equipment has been calibrated in accordance with the Electricity Governance Rules.

Issue Date: 29/05/2007
Expires: 29/05/2010

Signatory:



Malcolm Hoare
for TSL E&T Meter Test House
Electronically Created by: Malcolm Hoare on
06/03/2007

TSL E and T Meter Test House, Brunner Street, PO Box 18-219, Christchurch (03 349 0873)

**TRANSFIELD
SERVICES**
Meter Test House



CERTIFICATE OF COMPLIANCE

(Component Only)

Certificate Number: 34013M

Installation Name: White Hills Wind Farm

Equipment Certified:

METER: Power Measurement / ION 7650

Serial Number(s):

P1-0611A329-01

Calibration Report No.:

CMR11683

Conditions of Issue:

Nil

This certifies that the above metering equipment has been calibrated in accordance with the Electricity Governance Rules.

Issue Date: 29/05/2007

Signatory:



Expires: 29/05/2010

Malcolm Hoare
for TSL E&T Meter Test House
Electronically Created by: Malcolm Hoare on
06/08/2007

**TRANSFIELD
SERVICES**
Meter Test House



CERTIFICATE OF COMPLIANCE

(Component Only)

Certificate Number: 34013C

Installation Name:

White Hills Wind Farm

Equipment Certified:

CT: Merlin Genin / AJR/A1/N2J

Serial Number(s):

0693106; 0693105; 0693104

Calibration Report No.:

CMR11681

Conditions of Issue:

Nil

This certifies that the above metering equipment has been calibrated in accordance with the Electricity Governance Rules.

Issue Date: 29/05/2007

Signatory:



Expires: 29/05/2017

**Malcolm Hoare
for TSL E&T Meter Test House**

**Electronically Created by: Malcolm Hoare on
06/08/2007**

TSL E and T Meter Test House, Brunner Street, PO Box 16-219, Christchurch (03 349 0873)

**TRANSFIELD
SERVICES**
Meter Test House



CERTIFICATE OF COMPLIANCE

(Component Only)

Certificate Number: 34013V

Installation Name:

White Hills Wind Farm

Equipment Certified:

VT: Merdin Gerin - VRQ1n/S1

Serial Number(s):

0690324; 0690325; 0690326

Calibration Report No.:

CMR11683

Conditions of Issue:

Some errors at 1005 Rated burden are outside the IEC limits of error for a Class 0.2 VT

This certifies that the above metering equipment has been calibrated in accordance with the Electricity Governance Rules.

Issue Date: 29/05/2007

Signatory:



Expires: 29/05/2017

*Malcolm Hoare
for TSL E&T Meter Test House*

Electronically Created by: Malcolm Hoare on
06/08/2007

