

**Projects to Reduce Emissions  
Tararua III Wind Farm (TrustPower)  
2012 Annual Report  
Independent Verification Report**

**Project verified:**

*Tararua III Wind Farm  
TrustPower  
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**Independent verifier:**

*Noel Peters  
DNV KEMA Australia*

**Date of verification:**

*22/01/2013*

<b>PRE Project Information</b>	
Name of Project: Tararua III Wind Farm	
Project Site Address: Manawatu, Tararua	
Name of Project Participant: TrustPower	
Name of Project contact: Craig Schubauer	Telephone: +64 7 574 4888 x 8345
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<b>Verifier Information</b>	
Name of Company: DNV KEMA Australia	Telephone: 61-2-9922-1966 ext 517
Name of Lead Verifier: Noel Peters	Fax: 61-2-9929-8792
Email: noel.peters@dnvkema.com	Date(s) of Verification: 22/01/2013
Verification Team Members: Mark Robinson (Peer Review)	
<b>PRE Annual Report Verified</b>	
Annual Report 2012	

# 1 Verification Statement

To:

Craig Schubauer

Wholesale Market Manager

TrustPower Limited, Private Bag 12023, Tauranga

## 1.1 Introduction

*DNV KEMA Australia* has been engaged by *TrustPower Limited* to undertake a verification of the Participant's *Projects to Reduce Emissions as detailed in the Tararua III Wind Farm 2012 Annual Report*. The verification has been planned and performed in accordance with the Verification Plan dated 18/01/2013 and our contract dated 18/01/2013.

We have reviewed the nature of the *Tararua III Wind Farm 2012 Annual Report* and have concluded that we are able to conduct a reasonable assurance verification of the criteria items directly related to operation of the project and limited assurance verification of the scope items which describe competence of the Project Participant and the interaction of the project with local regulatory authorities. We have indicated the relevant scope items in the Scope of Verification below.

## 1.2 Objective

The objective of the verification engagement is to form an opinion as to whether the *Tararua III 2012 Annual Report* is prepared in accordance with the PRE Project Agreement between the Crown and the Project Participant and is free from material discrepancy.

## 1.3 Criteria

*DNV KEMA Australia* conducted sufficient verification procedures to enable us to express a reasonable assurance verification opinion on the following matters that, in all material respects:

1. The *Tararua III Wind Farm 2012 Annual Report* includes the information detailed in Schedule 4 of the Project Agreement;
2. The recording and calculation of the emission reductions for the year uses the relevant (e.g., electricity) emission factors set out in Schedule 2 (or elsewhere as defined with another applicable Agreement);
3. The calculation behind the Emission Units claimed for 2012, uses the net emission reduction and the request ratio ("C") set out in clause 5.1 of the Project Agreement;
4. The construction emissions calculations uses (a) the emission factors set out in Schedule 2, and (b) the records of the quantities of materials, fuels, electricity purchased etc. relevant to emissions during construction;
5. Metering and recording equipment installed has been certified by an independent reputable quality assured service provider;
6. Any other (electricity, heat) generation, not part of the project, that flows through these meters has been identified, measured and subtracted from the gross total;

7. If applicable, records of emissions as a result of the operation of the project are fairly stated;
8. The participant has justified and documented any significant changes to the PRE project and its baseline scenario that lead to material change in the project's emissions, removals and emission reductions since the previous verification, and which affect the projects ability to conform to the principles, and requirements of the PRE project; and
9. Within the context of verification, any other requirement relating to the PRE project Agreement.

*DNV KEMA Australia* conducted sufficient verification procedures to enable us to express a limited assurance verification opinion on the following matter that, in all material respects:

10. The participant has adequate understanding of the principles and requirements of the PRE programme and is competent to conform to those principles and requirements; and
11. Compliance with the regulatory requirements of local and central government agencies.

#### **1.4 Verification scope**

The scope of verification of the *Tararua III Wind Farm 2012 Annual Report* is as follows:

##### **1.4.1 GHG project and baseline scenarios relevant to the Project**

The relevant project and baseline scenarios are as follows:

1. Baseline scenario: continuation of electricity supply from the national grid; and
2. Project scenario: renewable and clean electricity generation from renewable wind resources.

##### **1.4.2 Physical infrastructure, activities, technologies and processes of the GHG project**

The elements of the project subject to verification are as follows:

1. Physical infrastructure: wind turbines, metering and transmission network, and associated infrastructure, etc;
2. Project activities: electricity generation from wind turbines and supply to the national grid;
3. Technologies: wind turbine; and
4. Processes: metering of generated electricity and electricity transmission network.

##### **1.4.3 GHG sources, sinks and/or reservoirs included within the Project boundary**

Project GHG sources, sinks and reservoirs within the Project boundary are:

1. GHG sources: any fossil fuel consumption within project boundary, e.g. any stand-by diesel generator, construction and transportation related to construction.

#### **1.4.4 Types of GHGs included within the project boundary**

The GHG species included within the Project Agreement are:

1. CO<sub>2</sub>.

#### **1.4.5 Time period of the Annual Report**

The verification is of all project activities in the period *1 January 2012 to 31 December 2012*.

### **1.5 Verification Principles**

*DNV KEMA Australia* conducted the verification in accordance with ISO14064-3, ISO 14065 and our contract with *TrustPower Limited* and the verification principles under clause 7 of the Project Agreement between the PP and the Crown.

### **1.6 Project Participant's Responsibilities**

TrustPower is responsible for preparing the PRE *Tararua III Wind Farm 2012 Annual Report* and maintaining an effective internal control environment and data management system, including control procedures supporting the inputs into this documentation, in accordance with accepted good practice.

### **1.7 Verifier Responsibilities**

The verification has been conducted in accordance with ISO14064-3 and ISO14065 in order to provide a reasonable and limited level of assurance as described in the Scope of Work above to *TrustPower Limited*. As such *DNV KEMA Australia* has undertaken the following procedures that we considered appropriate to be able to provide a reasonable and limited level of assurance.

### **1.8 Verification Procedures**

Our verification has been conducted in accordance with ISO14064-3 and ISO14065 to provide reasonable assurance that the greenhouse gas assertions and other information contained in the *Tararua III Wind Farm 2012 Annual Report* is free from material misstatement. Accordingly, we have conducted such tests and procedures as we considered appropriate including:

- *Interviews with personnel from Tararua III Wind Farm to examine any changes with regard to installation, on-site control procedures, and physical connection to the Transpower national grid;*
- *Review of key documents, including:*
  - *Projects to Reduce Emissions Agreement with the Crown;*
  - *Tararua III Wind Farm 2012 Annual Report, including correspondence from the Half Hour Data Administrator; and*
- *Examination of substation electrical drawings TWF-7G-0005 and TWF-7G-0008 showing the electrical connection, metering and protection arrangements; and*
- *Testing of source data, including:*

- *Electricity generation by wind turbines*
- *Cross-checking of recorded electricity generation and net sent out data*
- *Confirmation that the calculation methodology is in compliance with the Schedule 2 of the Project Agreement*
- *Observation and review of relevant documentation.*

The results of the verification procedures undertaken are set out in the following Verification Checklist.

*DNV KEMA Australia* confirms that we are not aware of any actual or perceived conflict of interest in having completed this engagement.

### **1.9 Independent Review**

*DNV KEMA Australia* has completed an independent review, undertaken by competent personnel who did not participate in the verification, to:

- Confirm that all verification activities have been undertaken; and
- Conclude whether or not the assertions in the *Tararua III Wind Farm 2012 Annual Report* are free from material discrepancy, and whether the verification activities provide either a reasonable level of assurance or a limited level of assurance in accordance with the scope items nominated above.

In making this verification statement, we confirm that DNV is currently accredited as a *DOE* by CDM Executive Board as per the Ministry for the Environment requirements, that this verification has been conducted in accordance with the requirements of the accreditation and that the findings and conclusions documented in this report are guided by professional judgment and supported by verification records held by *DNV KEMA Australia*.

### **1.10 Inherent Limitations**

Because of the inherent limitations in any internal control environment and data management system, it is possible that fraud, error, or non-compliance with the PRE Agreement may occur and may not be detected. Further, the verification was not designed to detect all weakness or errors in the internal control environment and data management system so far as they relate to the scope set out above, as the verification has not been performed continuously throughout the period and the procedures performed on the relevant internal information and data management system were on a test basis. Any extrapolation from this verification to future periods is subject to the risk that the procedures may become inadequate because of changes in conditions, or that the degree of compliance with them may deteriorate.

*DNV KEMA Australia* did not conduct any verification procedures with respect to the internal control environment and data management system of the PP as a whole. As such, no assurance is provided on any internal control environment and data management system not associated with the *Tararua III Wind Farm 2012 Annual Report*.

The verification opinion expressed in this Report has been formed on the above basis.

### 1.11 Verification Opinion

Our opinion, following the reasonable assurance verification undertaken at the DNV KEMA Australia offices Sydney and on site at Tararua, New Zealand of the GHG assertions included in the *Tararua III Wind Farm 2012 Annual Report* and the subsequent review of associated documents is that the following matter is fairly presented, in all material aspects, in accordance with the PRE requirements:

1. The *Tararua III Wind Farm 2012 Annual Report* includes the information detailed in Schedule 4 of the Project Agreement;
2. The recording and calculation of the emission reductions for the 2012 uses the relevant emission factors (e.g., electricity) set out in Schedule 2 of the Project Agreement (or elsewhere as defined with another applicable Agreement);
3. The calculation behind the Emission Units claimed for the 2012 period uses the net emission reduction and the request ratio ("C") set out in clause 5.1 of the Project Agreement;
4. Metering and recording equipment installed has been certified by an independent reputable quality assured service provider;
5. Electricity generation, not part of the project, that flows through these meters has been identified, measured and subtracted from the gross total;
6. Records of emissions as a result of the operation of the project are fairly stated;

In our opinion, nothing came to our attention during the limited assurance verification of the *Tararua III Wind Farm 2012 Annual Report* and subsequent review of associated documents. Further, it is our assertion that the regulatory requirements of local and central government agencies have been met to indicate is not, in all material aspects, as being in accordance with the PRE Guidance requirements:



1. The participant has adequate understanding of the principles and requirements of the PRE programme and is competent to conform to those principles and requirements; and
2. Compliance with the regulatory requirements of local and central government agencies.

### 1.12 Suggestions

TrustPower as PP shall submit information on the type of emission units that will be claimed to the Ministry for the Environment.

### 1.13 Limitations on use

This Verification Statement has been prepared for TrustPower solely for use in relation to the *Projects to Reduce Emissions* programme. The *DNV KEMA Australia* disclaims any liability for reliance upon this Report by any other party or for any other purpose other than for which it was prepared.

<b>Name of Lead Verifier:</b>	<b>Noel Peters</b>
<b>Position:</b>	<b>Senior Principal</b>
<b>Company and Location:</b>	<b>DNV KEMA Australia, Sydney</b>
<b>Signature of Lead Verifier:</b>	
<b>Date:</b>	<b>24/01/2013</b>
<b>Name of Independent Reviewer</b>	<b>Mark Robinson</b>
<b>Signature of Independent Reviewer</b>	
<b>Date:</b>	<b>24/01/2013</b>

Attachment 1 – Verification Procedures and Findings



## 2 Attachment 1 – verification procedures and findings

Attachment 1 is a record of the verification procedures conducted in accordance with ISO 14064-3 and ISO 14065 and of the verification findings. The checklist is not a comprehensive description of all the verification procedures performed or all verification evidence obtained during the verification process, but is a fair presentation of the procedures and findings in sufficient detail to enable all findings (both positive and negative) to be verified.

<b>Criteria Item 1 verified</b>	The <i>Tararua III Wind Farm 2012 Annual Report</i> includes the information detailed in Schedule 4 of the Project Agreement.		
<b>Description of requirement</b>	That all of the information detailed in Schedule 4 of the Project Agreement for inclusion in the Annual Report has been included and is fairly stated.		
<b>Verification procedures</b>	Verification item	Information Source/Evidence	Comments
	Cross check of Annual Report information with the requirements documented in Schedule 4 of the Project Agreement	<p>Tararua III Wind Farm 2012 Annual Report (21 January 2013)</p> <p>Project Agreement (29 March 2005)</p> <p>Amendment of Project Agreement (18 November 2009)</p> <p>Letter verifying Annual Generation from Tararua Wind Farm Stage III In Total, from the Electricity Commission Approved Half Hour Data Administrator TrustPower Limited, 11 January 2013</p> <p>Letter to New Zealand Wind Farms from Energy Market Services (EMS) verifying electricity</p>	The <i>Tararua III Wind Farm 2012 Annual Report</i> is in compliance with Schedule 4 of the Project Agreement

		<p>generated and purchased at New Zealand Windfarms Limited Te Rere Hau generation station dated 11 January 2013</p> <p>Calculation spreadsheet <i>TWF_StagIIIGen2012_Kyoto.xlsx</i>, dated 11 January 2013</p>																															
<p><b>Findings</b></p>	<p>The <i>Tararua III Wind Farm 2012 Annual Report</i> was reviewed during this verification, and the required items were checked against Schedule 4 of the Project Agreement (Contents of Annual Reports), these being:</p> <ul style="list-style-type: none"> <li>• Total electricity generation from each turbine for the 2012 reporting year is presented in <i>TWF_StagIIIGen2012_Kyoto.xlsx</i>, dated 11 January 2013 and conforms that this is measured at Turbine Site as per Schedule 4 (a) of the PRE Project Agreement.</li> <li>• Letter dated 11 January 2013 from the Half Hour Data Administrator, TrustPower Limited, is referenced in the Annual Report (Item 8c, p5) and confirms total sent out generation of 443.992 GWh including generation from New Zealand Wind Farm generation.</li> <li>• Letter dated 11 January 2013 from the Half Hour Data Administrator, TrustPower Limited, is referenced in the Annual Report (Item 8c, p5) and confirms total import of 356.779 MWh including New Zealand Wind Farm import.</li> <li>• Net Sent Out generation from Tararua III Wind Farm equals to 327.680 GWh. This amount is correctly calculated in <i>TWF_StagIIIGen2012_Kyoto.xlsx</i> as follows:</li> </ul> <table border="1" data-bbox="619 1503 1353 2007"> <thead> <tr> <th>Generation</th> <th>GWh metered</th> <th>GWh totals</th> </tr> </thead> <tbody> <tr> <td>Total Wind Farm export</td> <td>443.992090</td> <td></td> </tr> <tr> <td>Less NZWF export</td> <td>116.302779</td> <td></td> </tr> <tr> <td>gives Tararua III export</td> <td></td> <td>327.690016</td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td>Total Wind Farm Import</td> <td>0.356779</td> <td></td> </tr> <tr> <td>less NZWF Import</td> <td>0.346995</td> <td></td> </tr> <tr> <td>gives Tararua III Import</td> <td></td> <td>0.009785</td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td>Taruarua III net exported generation</td> <td></td> <td>327.680231</td> </tr> </tbody> </table>			Generation	GWh metered	GWh totals	Total Wind Farm export	443.992090		Less NZWF export	116.302779		gives Tararua III export		327.690016				Total Wind Farm Import	0.356779		less NZWF Import	0.346995		gives Tararua III Import		0.009785				Taruarua III net exported generation		327.680231
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	<ul style="list-style-type: none"> <li>• This is based on net electricity sent out of 103.963 GWh from New Zealand Wind Farm in accordance with Energy Market Services (EMS) letter dated 13 January 2012.</li> <li>• Net Sent Out generation of 327.680 GWh from Tararua III Wind Farm is measured using revenue meter (calibrated) at the connection point to the National Grid and is net of losses.</li> <li>• Calculation of 204 800 tonnes CO<sub>2</sub>-e of emission units are calculated in accordance with the methodology from Schedule 2 of the Project Agreement – the calculation is documented in Item 7 p3 of the Annual Report.</li> </ul>
<p><b>Conclusion</b></p>	<p>All of the information detailed in Schedule 4 of the Project Agreement has been included and fairly stated.</p>

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<b>Criteria Item 2 verified</b>	The recording and calculation of the emission reductions for the year uses the relevant (e.g., electricity) emission factors set out in Schedule 2 (or as otherwise defined).		
<b>Description of requirement</b>	That the emission factors used in the Annual Report are the same as those in Schedule 2 (or as otherwise defined) of the Project Agreement, and that the mathematical calculation of emission reductions using the emission factors and project activity parameters are fairly stated.		
<b>Verification procedures</b>	Verification item	Information Source/Evidence	Comments
	Cross check of emission factors used in the emission reduction calculation with the emission factors in Schedule 2 (or as otherwise defined) of the Project Agreement	Tararua III Wind Farm 2012 Annual Report (21 January 2013)  Project Agreement (29 March 2005)  Amendment of Project Agreement (18 November 2009)	The electricity emission factor (625 tonnes CO <sub>2</sub> e/GWh) has been correctly applied in accordance with Schedule 2 – Measurement of Emission Reductions.
	Emission factors not included in Schedule 2 are from properly authorised sources or are based on test results from properly accredited laboratories	Test results  Emission source documentation  Laboratory accreditation certificates	Not applicable as no emission factors were used other than in Schedule 2.
	Confirmation that the measurement of project activity parameters has been properly undertaken	Tararua III Wind Farm 2012 Annual Report (21 January 2013)	Electricity generated from each wind turbine has been reported in the <i>Tararua III Wind Farm 2012 Annual Report</i> .  Total electricity generation at Tararua III Wind Farm (334.300 GWh) is measured at each Tararua III Wind Farm turbine and recorded by

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			the Vestas Online Business (VOB) SCADA system.  Total eligible exported generation is determined as 327.680 GWh.
	Confirmation that the measured project activity parameters have been accurately transcribed to the Annual Report	Tararua III Wind Farm 2012 Annual Report (21 January 2013)	The measured project activity parameters have been accurately transcribed.
	Confirmation by alternate or check calculation that the determination of emission reductions is fairly stated	Emission reduction calculation	Yes, the total emission reductions calculation was checked and found is fairly stated.
<b>Findings</b>	The relevant emission factors have been correctly applied in accordance with Schedule 2 – Measurement of Emission Reductions. The emission factor used in the Annual Report are: <ul style="list-style-type: none"> <li>• Electricity – 625 tonnes CO<sub>2</sub>-e/GWh</li> </ul>		
<b>Conclusion</b>	The electricity emission factor (625 tonnes CO <sub>2</sub> -e/GWh) has been correctly applied in accordance with Schedule 2 – Measurement of Emission Reductions.		

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<b>Criteria Item 3 verified</b>	The calculation behind the Emission Units claimed for 2012 uses the net emission reduction and the request ratio ("C") set out in clause 5.1 of the Project Agreement.		
<b>Description of requirement</b>	That the calculation of Emission Units properly uses the net emission reduction calculated for the year 2012 taking due account of the request ratio ("C") set in Clause 5.1 of the Project Agreement.		
<b>Verification procedures</b>	Verification item	Information Source/Evidence	Comments
	Confirm that the calculation takes proper account of the request ratio	Tararua III Wind Farm 2012 Annual Report (21 January 2013)  Project Agreement (29 March 2005)  Amendment of Project Agreement (18 November 2009)	The correct request ratio (C= 0.84) has been used to estimate 2012 emission reduction unit claims.
	Confirm that the calculation of Emission Reduction units is based on net emission reductions.	Tararua III Wind Farm 2012 Annual Report (21 January 2013)  Project Agreement (29 March 2005)  Amendment of Project Agreement (18 November 2009)  Letter verifying Annual Generation from Tararua Wind Farm Stage III In Total, from the Electricity Commission Approved Half Hour Data Administrator TrustPower Limited, 11 January 2013  Calculation spreadsheet <i>TWF_StageIII Gen2012_Kyoto.xlsx</i> , dated 11 January 2013	The calculation of the emission units is based on net emissions reduction.
<b>Findings</b>	The net electricity generation (327.680 GWh) from Tararua III Wind Farm has been used to calculate net emission units.		
<b>Conclusion</b>	<p>The calculation behind the Emission Units claimed for 2012 (172,032 tonnes CO<sub>2</sub>-e) uses the net emission reduction and the request ratio ("C") set out in clause 5.1 of the Project Agreement.</p> <p>TrustPower has not provided information on type of units that will be claimed in section 14 (9) p6 of the Annual Report. Ministry for</p>		

	<p>the Environment as Administrator of PRE project activity has confirmed that TrustPower shall submit information on the type of emission units before receiving emission reduction units.</p> <p>TrustPower as PP shall submit information on the type of emission units that will be claimed to the Ministry for the Environment.</p>
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<b>Criteria Item 4 verified</b>	If applicable: the construction emissions calculations uses (a) the emission factors set out in Schedule 2 (or as defined elsewhere), and (b) the records of the quantities of materials, fuels, electricity purchased etc. relevant to emissions during construction.		
<b>Description of requirement</b>	That calculation of construction emissions uses the emission factors set out in Schedule 2 (or as defined elsewhere) and measured quantities of construction materials, accurately transcribed to the Annual Report.		
<b>Verification procedures</b>	Verification item	Information Source/Evidence	Comments
	Confirm that the calculation uses the correct emission factors	<p>Tararua III Wind Farm 2012 Annual Report (21 January 2013)</p> <p>Project Agreement (29 March 2005)</p> <p>Amendment of Project Agreement (18 November 2009)</p> <p>Site visit 24 January 2012</p>	No construction work was carried out during 2012 as all the construction work has been completed. Hence there were no construction emissions during the 2012 reporting period.
	Confirmation that all appropriate construction materials have been included	Not applicable.	Not applicable.
	Review of the record keeping arrangements to confirm that the measured quantities of construction materials are a fair presentation of actual usage	Not applicable.	Not applicable.



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	The exercise of professional judgement in relation to whether the claimed quantity of construction materials was reasonable	Not applicable.	Not applicable.
	Alternate calculations and cross checks to confirm that the calculation of construction emissions is fairly presented	Not applicable.	Not applicable.
<b>Findings</b>	The greenhouse gas emission from project construction took place during previous reporting periods. No construction emissions recorded in item 1, page 1 of the <i>Tararua III Wind Farm 2012 Annual Report</i> .		
<b>Conclusion</b>	Based on observations made during the site visit, in the opinion of the verifier it appears reasonable that no construction emissions occurred during 2012.		

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<b>Criteria Item 5 verified</b>	Metering and recording equipment installed has been certified by an independent reputable quality assured service provider.		
<b>Description of requirement</b>	That the metering and recording equipment installed has been certified by an independent reputable quality assured service provider.		
<b>Verification procedures</b>	Verification item	Information Source/Evidence	Comments
	Examination of calibration and maintenance certificates to ensure that they are current	<p>Calibration certificates:</p> <p>TWF III – 33kV Incomer 1 – CB3062 Revenue Meter AccuCal CAL-2009-317 (valid till 17 November 2012)</p> <p>Calibration certificate: TWF III – 33kV Incomer 1 – CB3062 Revenue Meter AccuCal CAL-2012-511 (valid till 14 November 2015)</p> <p>TWF III – 33kV Incomer 2 – CB3122 Revenue Meter AccuCal CAL-2009-318 (valid till 17 November 2012)</p> <p>Calibration certificate: TWF III – 33kV Incomer 2 – CB3122 Revenue Meter AccuCal CAL-2009-512 (valid till 14 November 2015)</p>	Calibration of the meters has been carried out by AccuCal and calibration certificates are currently valid.

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	Examination of installed instruments to confirm that the installed instruments are those covered by the calibration certificates	Tararua Wind Farm 220/33kV relay and instrument diagram (TWF-7G-0008)  Tararua Wind Farm single line diagram (TWF-7G-0005)	The metering and recording equipment installed at the wind farm substation was found to be the same as calibrated by AccuCal and compared with instrument diagrams.
	Confirmation that the calibration agency is appropriately qualified and accredited for the instruments which have been calibrated	Agency Accreditation scope	The calibration test is performed by AccuCal. AccuCal is registered the with Electricity Authority (previously Electricity Commission) as a class A approved test house.
<b>Findings</b>	<p>The metering and recording equipment installed at the wind farm substation was found to be of a standard appropriate for its purpose and calibrated and tested to be in good operating condition. Calibration of the meters was current and had been completed by AccuCal. Current calibration certificates for each of the revenue meters are attached to the 2012 Annual Report.</p> <p>AccuCal is an appropriately qualified and accredited agency to perform calibration and compliance tests for the Tararua III Wind Farm instruments which have been calibrated.</p>		
<b>Conclusion</b>	<p>Metering and recording equipment installed have been certified by an independent reputable quality assured service provider.</p>		

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<b>Criteria Item 6 verified</b>	Any other (electricity, heat) generation, not part of the project, that flows through these meters is indentified, measured and subtracted from the gross total.		
<b>Description of requirement</b>	That any other (electricity, heat) generation, not part of the project, that flows through these meters is indentified, measured and subtracted fro the gross total and fairly stated.		
<b>Verification procedures</b>	Verification item	Information Source/Evidence	Comments
	Review of the process and instrumentation diagram of the project to confirm the presence or absence of other energy flows through the project metering installation	<p>Tararua Wind Farm 220/33kV relay and instrument diagram (TWF-7G-0008)</p> <p>Tararua Wind Farm single line diagram (TWF-7G-0005)</p>	<p>The 31 (V90 – 3MW) wind turbines included in Tararua III each have individual meters.</p> <p>The metering arrangements at the Tararua III substation were observed and checked against the relay and instrument diagram and the metering single line diagram. The existing substation comprises two High Voltage busbars connected with a bus-tie circuit breaker, each with a number of incoming feeders from the wind farm, and one outgoing feeder to a sub-transmission transformer and then to the national grid.</p> <p>TrustPower Generation and New Zealand Wind Farm generation are connected to a network TWC 2201.</p> <p>New Zealand Wind Farm’s two ICPs (0001187181WFB22 and</p>

			<p>0001190422WF679) are within TWC2201 network. An external agent collects and submits data from these two ICPs to the Reconciliation Manager.</p> <p>Energy Market Services (EMS) reads the metering that connects TWC2201 network and reports to the Reconciliation Manager. The Reconciliation Manager subtracts New Zealand Wind Farm data from EMS data and reports TrustPower as electricity generation for ICP 0001187170WF770.</p>
	<p>Consideration of the nature and design of the project</p>	<p>Tararua Wind Farm 220/33kV relay and instrument diagram (TWF-7G-0008)</p> <p>Tararua Wind Farm single line diagram (TWF-7G-0005)</p>	<p>New Zealand Wind Farm generates electricity from renewable wind resources and exports to a 33 kV grid.</p>
	<p>Review of the record keeping process to confirm that the metered data is accurately measured and recorded</p>	<p>Tararua III Wind Farm 2012 Annual Report (21 January 2013)</p> <p>Project Agreement (29 March 2005)</p> <p>Amendment of Project Agreement (18 November 2009)</p> <p>Certified Reconciliation Participant - TrustPower Limited (Certificate issued</p>	<p>TrustPower is an Electricity Commission Approved Half Hour Data Administrator and is responsible for TrustPower's submission to the Reconciliation Manager.</p> <p>Electricity generated by each wind turbines at Tararua III Wind Farm is recorded by individual meter.</p>

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		<p>by the Electricity Commission and valid until 24 October 2011).</p> <p>Certified Reconciliation Participant - TrustPower Limited (Certificate issued by the Electricity Authority and valid until 24 October 2012).</p>	<p>Total electricity delivered to the Network is measured by a revenue meter.</p> <p>Any difference between two metered values provides an estimate of electrical losses at the wind farm and before connection to the lines network or Transpower grid.</p>
	<p>Review of the metering arrangements to confirm that the measurements of other energy flows truly represent those flows</p>	<p>Tararua III Wind Farm 2012 Annual Report (21 January 2013)</p> <p>Project Agreement (29 March 2005)</p> <p>Amendment of Project Agreement (18 November 2009)</p>	<p>New Zealand Wind Farm's two ICPs (0001187181WFB22 and 0001190422WF679) are within TWC2201 network.</p> <p>An external agent collects and submits data from these two ICPs to Reconciliation Manager.</p> <p>The Reconciliation Manager subtracts New Zealand Wind Farm data from EMS data and reports TrustPower as electricity generation for ICP 0001187170WF770.</p>
	<p>Review of the energy calculation methodology to confirm that any other energy flows have been correctly subtracted and that the final result truly reflects the net energy flow attributable to the project</p>	<p>Tararua III Wind Farm 2012 Annual Report (21 January 2013)</p> <p>Project Agreement (29 March 2005)</p> <p>Amendment of Project Agreement (18 November 2009)</p>	<p>2012 Annual Report s4 (p2) reports other energy flows through the same network connection points.</p> <p>The actual electricity generation is calculated by subtracting any other electricity generation from</p>

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			<p>New Zealand Wind Farms.</p> <p>The net electricity generation exported (327.680 GWh) for the year 2012 from Tararua III truly reflects the net energy flow attributable to the project.</p>
<b>Findings</b>	<p>Electricity from New Zealand Wind Farms, not part of the project that flows through the Tararua III meters is identified.</p>		
<b>Conclusion</b>	<p>Review of the Tararua III Wind Farm and New Zealand Wind Farm metering arrangements confirm that the measurements of energy flows from New Zealand Wind Farm truly represent those flows.</p>		

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<b>Criteria Item 7 verified</b>	If applicable, the record of emissions as a result of the operation of the project is fairly stated.		
<b>Description of requirement</b>	That the record of emissions as a result of operation of the project is fairly stated.		
<b>Verification procedures</b>	Verification item	Information Source/Evidence	Comments
	Confirm that the calculation uses the correct emission factors	Not applicable	Emissions from operation of the project are confined to on-site vehicle use by Vestas and are negligible.  In addition, it is not a requirement for TrustPower to measure and monitor operational emissions as per PRE agreement with the Crown.
	Confirmation that all appropriate operational activities have been included	Not applicable	Not applicable
	Review of the record keeping arrangements to confirm that the measured quantities of operational materials are a fair presentation of actual usage	Not applicable	Not applicable
	The exercise of professional judgement in relation to whether the claimed quantity of operational materials was reasonable	Not applicable	Emissions from operation of the project are confined to on-site vehicle use by Vestas and are negligible.  In addition, it is not a requirement for TrustPower to measure and monitor operational



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			emissions as per PRE agreement with the Crown.
	Alternate calculations and cross checks to confirm that the calculation of operation emissions is fairly presented	Not applicable	Not applicable
<b>Findings</b>	No record of emissions as a result of the operation of the Tararua III Wind Farm has been reported in s2 (p1) of 2012 Annual Report as the emissions are negligible.		
<b>Conclusion</b>	No emission was recorded due to operation of the project, which in the verifier's opinion is reasonable.		

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<b>Criteria Item 8 verified</b>	The participant has justified and documented any significant changes to the PRE project and its baseline scenario that lead to material change in the project's emissions, removals and emission reductions since the previous verification, and which affect the projects ability to conform to the principles, and requirements of the PRE project.		
<b>Description of requirement</b>	Identify any additional requirements related to the PRE Project Agreement which require verification and verify those requirements.		
<b>Verification procedures</b>	Verification item	Information Source/Evidence	Comments
	Physical infrastructures Project activities Technologies Processes	Tararua III Wind Farm 2012 Annual Report (21 January 2013)  Project Agreement (29 March 2005)  Amendment of Project Agreement (18 November 2009)	No changes in the physical infrastructure of Tararua III Wind Farm, its processes and technologies were observed.
<b>Findings</b>	No evidence has been identified in 2012 Annual Report or in the on-site visit of any significant changes to the PRE project and its baseline scenario that could lead to a material change in the project's emissions and emission reductions since the previous verification, or which would affect the project's ability to conform to the principles, and requirements of the PRE project.		
<b>Conclusion</b>	No additional requirement related to the PRE Project Agreement was identified. No additional verification was performed.		

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<b>Criteria Item 9 verified</b>	Within the context of verification, any other requirement relating to the PRE project Agreement.		
<b>Description of requirement</b>	Identify any additional requirements related to the PRE Project Agreement which require verification and verify those requirements.		
<b>Verification procedures</b>	Verification item	Information Source/Evidence	Comments
	PRE requirements	Tararua III Wind Farm 2012 Annual Report (21 January 2013)  Project Agreement (29 March 2005)  Amendment of Project Agreement (18 November 2009)	All PRE project agreement requirements have been met.
<b>Findings</b>	During the review process, there was no finding that any other requirements from the PRE project agreement that had not been met.		
<b>Conclusion</b>	All PRE project agreement requirements have been met.		

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<b>Criteria Item 10 verified</b>	The participant has adequate understanding of the principles and requirements of the PRE programme and is competent to conform to those principles and requirements.		
<b>Description of requirement</b>	Identify any additional requirements related to the PRE Project Agreement which require verification and verify those requirements.		
<b>Verification procedures</b>	Verification item	Information Source/Evidence	Comments
	Understanding of PRE project requirement	Tararua III Wind Farm 2012 Annual Report (21 January 2013)	TrustPower personnel:
	Reporting requirement according to Schedule 4	Project Agreement (29 March 2005)	Craig Schubauer – Wholesale Market Manager
	Understand of measurement of emission reduction	Amendment of Project Agreement (18 November 2009)	Vestas personnel: James McKay, Site Supervisor, Vestas
And understanding of Emission Trading	Site visit: 24 January 2012	Donna Robert – Site Administrator, Vestas Mike Perin – SCADA Data Technician, Vestas  Interviews with monitoring, reporting and quality personnel in 2012 confirmed adequate understanding of the principles and requirements of the PRE programme and that staff are competent to conform to those principles and requirements.	
<b>Findings</b>	No additional requirements related to the PRE Project Agreement which require verification and verify those requirements.		
<b>Conclusion</b>	The participant has adequate understanding of the principles and requirements of the PRE programme and is competent to conform to those principles and requirements.		

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<b>Criteria Item 11 verified</b>	Compliance with the regulatory requirements of local and central government agencies.		
<b>Description of requirement</b>	That nothing came to the notice of the verifier to indicate that the project was not compliant with the regulatory requirements of local and central government agencies.		
<b>Verification procedures</b>	Verification item	Information Source/Evidence	Comments
	Review compliance conditions made within the Resource Consent or other regulatory approvals	Communication from TrustPower.	TrustPower confirmed that all consent compliance monitoring ended during 2009. No consent compliance monitoring was required to be carried out in 2012.
	Review correspondence between the local authorities and the project operator to evaluate compliance with requirements	Communication from TrustPower.	TrustPower confirmed that all consent compliance monitoring ended during 2009. No consent compliance monitoring was required to be carried out in 2012.
	Review the activities at the site to confirm that the project arrangements are generally compliant with regulatory requirements	Site visit: 22 January 2012	A review of the activities at the site suggests that the project arrangements are generally compliant with regulatory requirements.
	Confirm that project monitoring includes relevant regulatory and compliance conditions.	Communication from TrustPower.	TrustPower confirmed that all consent compliance monitoring ended during 2009. No consent compliance monitoring was required to be carried out in 2012.

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<b>Findings</b>	No discernible issue of non-compliance with regulatory requirements was noted during the first and initial verification carried out by DNV Australia in 2009 noting the inherent limitations discussed in s1.10 of this report. No issues have been identified in 2012 Annual Report or during the on-site visit that would lead to a material change in consent compliance requirements as specified in Consent Conditions issued by the Palmerston North City Council.
<b>Conclusion</b>	No discernible issue of non-compliance with regulatory requirements was noted during the first and initial verification carried out by DNV Australia in 2009 noting the inherent limitations discussed in s1.10 of this report. No issues have been identified in 2012 Annual Report or during the on-site visit that would lead to a material change in consent compliance requirements as specified in Consent Conditions issued by the Palmerston North City Council.

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<b>3 Documents Reviewed</b>	<b>4 Please include author, date prepared and date reviewed by Verifier</b>
2012 Annual Report Tararua III	TrustPower, January 2013, reviewed in January 2013
Spreadsheet <i>TWF_StageIIIGen2012_Kyoto.xlsx</i>	TrustPower, 11 January 2013, reviewed in January 2013
Spreadsheet <i>DA Confirmation volumes Tararua II &amp; III.xlsx</i>	TrustPower, 08 January 2013, reviewed in January 2013
Project Agreement	The Crown/Ministry for the Environment, 29 March 2005, reviewed in January 2013
Amendment of Project Agreement	The Crown/Ministry for the Environment, 18 November 2008, reviewed in January 2013
Letter verifying Annual Generation from Tararua Wind Farm Stage III In Total, from the Electricity Commission Approved Half Hour Data Administrator TrustPower Limited, 11 January 2013	TrustPower Limited (Electricity Commission Approved Half Hour Data Administrator), 11 January 2013, reviewed in January 2013
Letter to New Zealand Wind Farms verifying electricity generated and purchased at New Zealand Windfarms Limited Te Rere Hau generation station	Energy Market Services (EMS), 11 January 2013, reviewed in January 2013
Calibration certificate: TWF III – 33kV Incomer 1 – CB3062 Revenue Meter AccuCal CAL-2009-317 (valid till 17 November 2012)	AccuCal, 17 November 2009, reviewed in January 2013
Calibration certificate: TWF III – 33kV Incomer 1 – CB3062 Revenue Meter AccuCal CAL-2012-511 (valid till 14 November 2015)	AccuCal, 14 November 2012, reviewed in January 2013
Calibration certificate: TWF III – 33kV Incomer 2 – CB3122 Revenue Meter AccuCal CAL-2009-318 (valid till 17 November 2012)	AccuCal, 17 November 2009, reviewed in January 2013
Calibration certificate: TWF III – 33kV Incomer 2 – CB3122 Revenue Meter AccuCal CAL-2012-512 (valid till 14 November 2015)	AccuCal, 17 November 2012, reviewed in January 2013

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Independent Confirmation of Recorded Volumes by Energy Market Services (New Zealand Wind Farm)	Energy Market Services, January 2012, reviewed in January 2012
Site Visit location	Address, date of visit, personnel interviewed
Tararua, New Zealand	Tararua Ranges, 22 January 2012 Craig Schubauer, Wholesale Market Manager, TrustPower Michael Hewett, Site Planner, Vestas