

IN THE MATTER

of the Resource Management Act
1991

AND

IN THE MATTER

of applications to the **WAIKATO
DISTRICT COUNCIL** and
WAIKATO REGIONAL COUNCIL
by **WEL NETWORKS LTD** for
resource consents to authorise the
establishment, operation and
maintenance of 28 wind turbines for
the generation of electricity and
associated activities on the
Wharauoa Plateau near Te Uku

FURTHER STATEMENT OF EVIDENCE OF DR JULIAN ELDER

1. INTRODUCTION

Qualifications and experience

- 1.1 My name is Dr Julian Elder. I am the Chief Executive of WEL Networks Limited (“WEL”), a position I have held since April 2007. In that capacity I have overall responsibility for WEL’s operations. My qualifications and experience are set out in my statement of evidence presented to the Committee on 19 November 2007.
- 1.2 I am a Chartered Professional Engineer and am on the International register of Professional Engineers. The area of engineering that I am currently chartered in is Business. This is because for most of my career I have been involved in either advising on project viability, project management or managing businesses that build or operate major infra-structure assets. My project involvement has been primarily in the areas of electricity generation and water and wastewater utilities.

Context

- 1.3 During the hearing in December, some submitters (particularly Mr Cox) challenged the Te Uku project in terms of the wind resource on the Wharauoa Plateau and project viability and benefits in general. In that regard, I refer to my first brief of evidence in which I made clear that WEL is a prudent business operator which will only invest in the project if it represents good business and can return acceptable profit and that the project will proceed with the project only if it is technically and

commercially viable. Given that, WEL has followed a commercially prudent and rigorous process in determining and confirming the viability of the project. Indeed, WEL has undertaken detailed investigations into viability of this project, having careful regard to all our commitments, which have spanned over two years and cost over \$2 million.

- 1.4 This analysis was summarised in the evidence presented initially (particularly that of Mr Burchett and Mr Walter). However, in light of the challenge to the viability of the project, it is considered necessary to set out in more detail the process of investigations which WEL has pursued (and which are ongoing) to assess and confirm the robustness of the wind resource and the viability of the project. This process has involved a range of highly qualified independent experts, many of whom have also prepared evidence for presentation to the committee in relation to these issues.

Purpose and scope of evidence

- 1.5 The purpose of my evidence, therefore, is to provide an overview of the methodology employed by WEL to ascertain and confirm the wind resource on the Wharaurua Plateau and to assess the viability of the proposed Te Uku Wind Park project. My evidence is intended to provide a context for the Committee's consideration of the evidence of the independent consultants who have been retained by WEL to advise on the wind resource and project viability and who will be presenting evidence, namely:
- (a) Andrew Wright (Hydro Tasmania Consulting) ("HTC") who describes how HTC calculates the energy yield from the wind resource;
 - (b) Andrew Kerley (PB Power) who outlines the measurement of the wind resource itself;
 - (c) Blair Walter (Connell Wagner) who outlines the due diligence process undertaken by Connell Wagner;
 - (d) Paul Callow (Deloitte) who describes the economic analysis undertaken by Deloitte based upon the yield calculations, etc, and estimates the economic viability of the project;
 - (e) Jim Truesdale (Concept Consulting) who describes the electricity market and revenue aspects including carbon value; and
 - (f) Roger Burchett (Watershed Solutions) who further describes process.

- 1.6 Specifically, I will:
- (a) Outline the project phases undertaken to date and the experts used in the investigation, analysis and review of the project in order to establish the viability of the project (section 3); and
 - (b) Comment on the adequacy of WEL's approach to verification of project viability and project effects (section 4).
- 1.7 On the basis of these investigations, WEL remains confident that the Te Uku project is both technically and commercially viable. If it is not, WEL will not proceed with it.
- 1.8 I am authorised to present the evidence on behalf of WEL.

2. **PROJECT ANALYSIS AND VERIFICATION**

- 2.1 This section of my evidence will outline the process designed and followed by WEL for evaluating the feasibility and viability of the proposed wind farm. This process is similar to that adopted for other major infrastructure projects that I have been involved in.
- 2.2 This process is outlined in the flow chart attached to my evidence as **Appendix A**. The left hand side of the chart shows the time at which each stage was initiated and consultants engaged. I will only describe here the stages and resources used to determine viability.
- 2.3 When the decision to investigate wind power business opportunity was made by WEL in 2005, an ordered process was designed and implemented which involved a number of defined stages as follows:
- (a) Site identification;
 - (b) Preliminary feasibility (or Pre-feasibility);
 - (c) Resource Consents; and
 - (d) Technical and commercial feasibility.
- 2.4 This process is typical for any company evaluating a potential wind farm.
- 2.5 As each stage of the process is completed, the results are reported to the Board along with any management recommendations, and investment in the next stage is then by decision of the Board.

- 2.6 To assist in this decision making process a “live” business case model is developed in the Pre-feasibility stage and is updated as the process develops and more reliable data becomes available. The business case includes evaluation of business options available to provide the best return on investment to WEL.
- 2.7 After resource consents are issued, the business case will be updated to a “Pre-tender Business Case” and, subject to Board satisfaction with this update, the project will move to detailed design, tender, construction commissioning, operation and at the end of the project life, decommissioning and removal. In this process the critical decision of whether to build or not will be made at the time of tender when, firm values replace estimates in the business case model.
- 2.8 I will focus on the process undertaken by WEL in the stages leading up to the updated business case.

Selection of expert advisors

- 2.9 An evaluation was carried out of the most highly qualified experts available to assist in all phases of the project. Given its community ownership, WEL considered that it was paramount that the viability and effects were as well understood as practicable. WEL carried out a comprehensive review of the available expertise and selected the best mix of local, national and international experts to assist it to achieve this.
- 2.10 To identify key advisors in the areas of wind resource, engineering, project planning and risk management WEL went through a formal selection process. Proposals were invited from consultants who specialise in each of the key disciplines and WEL carefully considered each before making a final selection.
- 2.11 WEL also chose by recommendation other services with experience in establishing and managing a wind generation business. This was done because, as a network operator, WEL had no experience in wind generation and needed to have this ability in house.
- 2.12 The above advisors and contracted management then selected appropriate and suitably qualified experts to undertake all investigations necessary to complete consents, feasibility and the business case.

Site identification

- 2.13 Sites for wind turbines need to:
- (a) Be accessible for construction and maintenance needs;

- (b) Be reasonably close to connection points; and
- (c) Provide the necessary wind resource.

- 2.14 Site identification commenced with desk top studies by recognised experts, Hydro Tasmania Consulting Ltd (HTC), to ascertain potential sites. These desk-top studies were then followed by site visits by HTC to confirm suitability.
- 2.15 Out of this process the Wharaurua Plateau site was identified as the most promising area within the Waikato Region in terms of wind resource, grid connection, consents and construction.

Wind resource

- 2.16 It was then necessary to commence gathering detailed and accurate wind records for this site. WEL engaged PB Power Ltd to provide independent expert supervision for wind monitoring.
- 2.17 This has involved a 50 metre wind monitoring mast progressing to an 80 metre monitoring mast and finally relocation of the 50 metre mast around the site.
- 2.18 WEL engaged PB Power to ensure that it could be confident masts are installed to appropriate standards for reliability, the appropriate calibration of the monitoring instruments, and reviews of the wind speeds. Mr Andrew Kerley of PB Power and Mr Andrew Wright of Hydro Tasmania Consulting will give evidence as to their involvement and the standards used.
- 2.19 This work commenced in March 2005 as it is important to acquire representative data at the proposed site over a reasonable time period and be satisfied with the results before significant cost is invested in the consents process. This monitoring has been continuous since and is ongoing.

Preliminary feasibility studies

- 2.20 The Preliminary Feasibility was reported in October 2005 and involved a preliminary assessment of the wind resource in energy terms. This was carried out by HTC. This and subsequent energy updates (two further undertaken to date as the monitoring continues, and a third underway) will be described by Mr. Wright. Additionally at this stage preliminary environmental, engineering and economic assessments were carried out. The environmental and engineering work was carried out by Connell Wagner and the economic assessment by Watershed Solutions Ltd with input on risk from Hydro Tasmania Consulting and financial parameters by Strategic Finance.

Feasibility and consenting phase

- 2.21 The feasibility and consenting phases commenced in March 2006. This phase involved carrying out the environmental studies and preparation of the assessment of environmental effects (by Connell Wagner) along with further engineering and economic studies, and with specific environmental studies for a comprehensive consent application
- 2.22 During this stage, on-site geotechnical investigations and preliminary engineering design was carried out to ensure the works proposed in the consent application are technically and commercially feasible.
- 2.23 A wind speed review by PB Power and an energy update by HTC was also carried out in July 2006 to determine and evaluate the layout (now seen in the consent application) as the best for this site.

Independent peer reviews

- 2.24 As part of the verification and assurance process, the assessment of the energy by HTC was peer reviewed (Connell Wagner) and one manufacturer (Suzlon) carried out their own energy assessment of the site. Three manufacturers (Suzlon, Vestas and Siemens) provided budget prices and a major local contractor priced civil works as part of the continuing engineering and economic studies. These numbers were used in the preliminary business plan to demonstrate the economic viability of the project.
- 2.25 The 80 metre monitoring mast was installed in December 2006 and March 2007 Hydro Tasmania Consulting carried out a further update of the energy report. The 80m mast was installed adjacent to the 50m mast then after sufficient data was captured to calibrate the two masts the 50 metre mast was relocated to another position on the site as part of the continuing incremental process of verifying the wind resource.
- 2.26 At that stage, WEL invited expressions of interest from parties that might be interested in partnering on this project. Significant interest was shown by operators of other wind farms in New Zealand and elsewhere, and two parties undertook their own due diligence on our project, the data collected to date and analysis undertaken by WEL. They both came to the same conclusions as WEL in regards to wind resource and project viability, i.e., that the project data indicated viability and warranted further investment.

- 2.27 WEL undertook this exercise as part of a process to identify a business model that would ensure the best business solution. WEL was and is mindful that whilst it has expertise in electrical infrastructure, a business partner with market end (generation and retailing) capability could add value to this project.

Ongoing review

- 2.28 WEL routinely reviews project information and as any information material to project economics becomes available this is used in updating the Business Plan (and therefore economic viability). A process review was done by a firm of consultant financial advisors, Strategic Finance Ltd, and a subsequent review of the financial model and valuation by the global accountancy firm, Deloitte. Mr Burchett's evidence explains the development of the business plan model, Mr Walter will cover the resource and energy estimates review undertaken by Connell Wagner and Mr Callow will explain the work done by Deloitte to audit and confirm WEL's economic modelling.
- 2.29 Whilst this process is ongoing WEL is always mindful that project economics include a number of volatile inputs such as plant cost, foreign exchange rates, and electricity price, and as such the output of the economic model is more reliable when all of these inputs are contemporaneous. To this end, a periodic update of all key inputs is carried out at key decision points. This is described in the further evidence of Mr Burchett.

3. APPROPRIATENESS OF WEL'S METHODOLOGY

- 3.1 I am satisfied that the investigations, analysis and reviews undertaken to determine the viability of the Te Uku Wind Park (both in terms of wind resource and financial/market considerations) have been appropriate and rigorous. The project has been subjected to extensive and thorough review and checked by independent experts. This process is ongoing.
- 3.2 WEL has taken its responsibilities (community, environmental, owner) very seriously in developing this project. Over the last two years there have been considerable changes to the economic drivers for the project, for example, further wind data has given better understanding of the resource, the cost of turbines has risen due to large global demand (although signs are appearing that capacity is starting to catch up with demand), the cost of oil has risen dramatically; the New Zealand Government has decided its direction in terms of a cap and trade market for carbon and its intention to have a lot more renewable energy generation brought on line.

- 3.3 Most of these factors have been positive for the project. However, as has always been stated the project will not proceed if, at the time tendered prices are received, the economics are not positive. It is possible that tenders will be called more than once over time to achieve a positive result. The possibility of change to market conditions for both plant supply and electricity output, and the importance of timing is a key factor underpinning WEL's request for a ten (rather than five) year lapsing date for the project.
- 3.4 As for any project further detailed economic analysis will be undertaken pre and post tender so that a decision to proceed is correct and that all modelling assumptions remain appropriate. If the project proceeds, it will not be closed down prematurely – it is a long term proposition and those time frames factor in the economics.

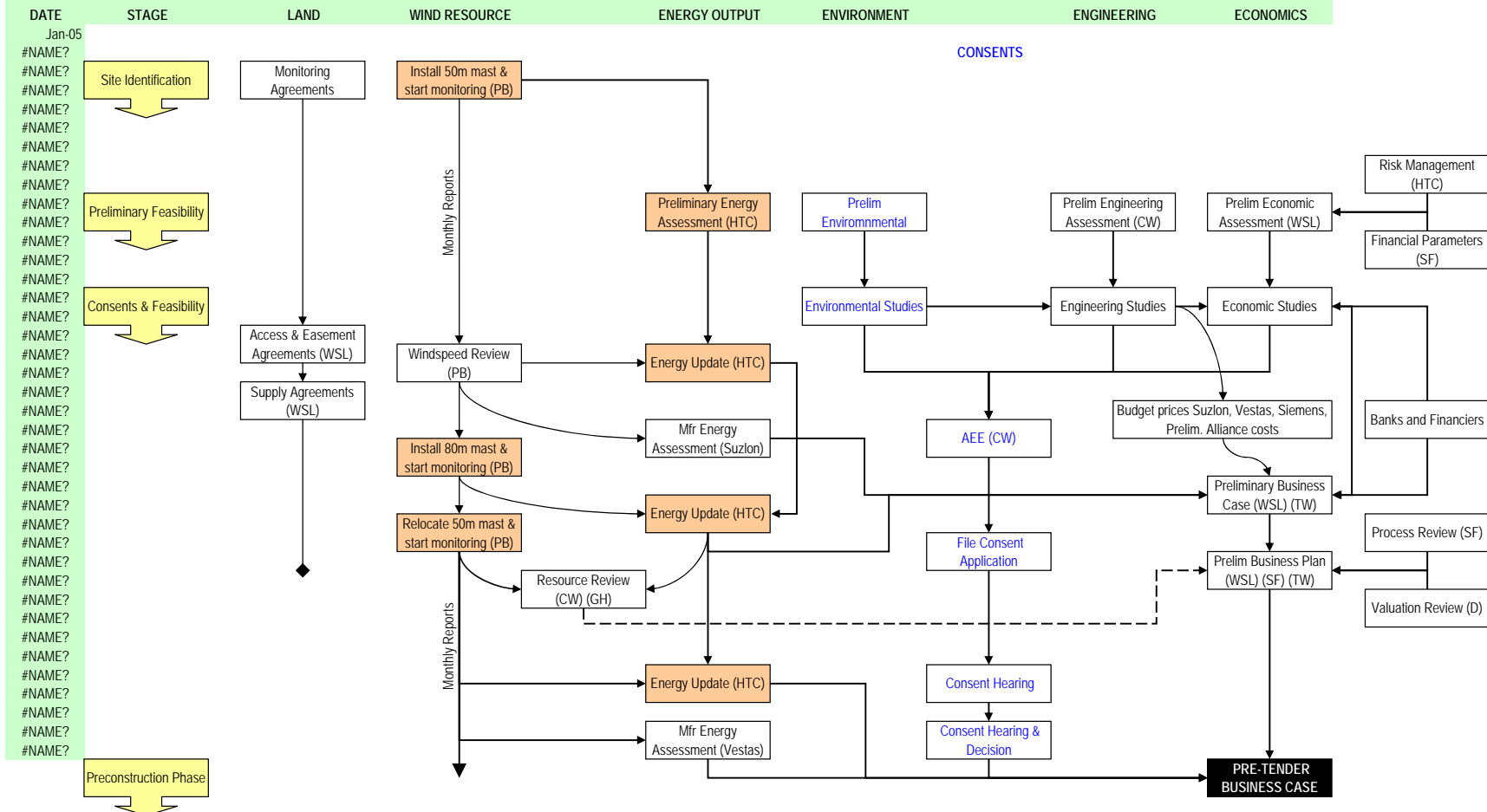
Julian Elder
January 2008

APPENDIX A

WELwind Park

Te Hauhiko o Wharaurora

COMMERCIAL FEASIBILITY PROCESS AND TIMELINE



PRINCIPLE ADVISORS

CW	Connell Wagner	Multidiscipline Engineering, Planning and Environmental
D	Deloitte	Financial and Economic
HTC	Hydro Tasmania Consulting	Wind Farm Engineering, Energy Estimates, Risk management
PB	PB Power	Wind Resource Engineering
SF	Strategic Finance	Financial
TW	Tompkins Wake	Legal - commercial and compliance
WSL	Watershed Solutions Ltd	Power Engineering and Project Economics