

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
Wharauoroa Plateau near Te Uku

STATEMENT OF EVIDENCE OF MICHAEL UNDERHILL

1. INTRODUCTION

Qualifications and experience

- 1.1 My name is Michael Charles Underhill. I am currently the Chief Executive of the Energy Efficiency and Conservation Authority (“EECA”) a position I have held since June 2007.
- 1.2 Prior to taking up that position in April 2007, I was the Chief Executive of WEL Networks (“WEL”) a position I held for 8 years, from 1999. During my time in the Waikato, I was involved in many other local activities including being Chairman of Katolyst, a board member of Innovation Waikato Ltd (which developed the Innovation Park) and a Council member of the Chamber of Commerce.
- 1.3 EECA is a submitter in support of the WEL application. EECA’s submission is being presented by another EECA officer and I support that submission. However, I am presenting this evidence on behalf of WEL in my capacity as immediate past CEO, because I held that position at the inception of the project was involved in the decision making which resulted in the decision fro WEL to become involved in wind generation and was involved in much of the early engagement with the public and key stakeholders in relation to the Te Uku Wind Park Project.

Purpose and scope of evidence

- 1.4 The purpose of my evidence is to provide some historical context to the Te Uku wind farm proposal including the reasons for developing the project and the process for communicating it to the public. I will also comment on the significance of the proposal from a regional and national perspective.
- 1.5 Specifically, I will address:
- (a) Section 3 - The reasons for WEL pursuing wind generation and deciding to develop the project.
 - (b) Section 4 - The national significance of the Te Uku project.
 - (c) Section 5 - Initial community consultation and public attitudes.
- 1.6 Section 2 contains a summary of my evidence.
- 1.7 My evidence needs to be considered alongside the evidence of:
- (a) Dr Julian Elder – who addresses WEL’s corporate and environmental commitments.
 - (b) Russell Shaw – who explains how the electricity generated at Te Uku will be transmitted/distributed.
 - (c) Roger Burchett – who describes project feasibility.
- 1.8 I will not address the issues covered by those witnesses – my evidence is primarily historical.
- 1.9 I have been requested by the WEL Board and Chief Executive to present this evidence, and am therefore authorised to present it.

2. SUMMARY OF EVIDENCE

- 2.1 The common factor in the decisions which WEL made to investigate and pursue wind generation at Te Uku was WEL’s commitment to promote and support economic growth in the Waikato Region for the benefit of the Waikato community, including the recycling of economic benefits in the area. Although WEL was entitled to look for renewable generation opportunities anywhere in New Zealand, WEL decided to keep these initiatives local in order to maximise local benefits.

- 2.2 The key reasons for deciding to pursue wind generation at Te Uku were:
- (a) Changes to the Electricity Industry Reform Act 1998 meant that lines companies could engage in generation activities in limited circumstances, namely new generation of energy from renewable sources.
 - (b) As the Chairman of Katolyst, I was aware that significant economic growth was forecast for the Waikato Region and this will be reflected through the load growth WEL Networks is presently and expecting in the future. WEL considered that, as a community owned company, it had a responsibility to assist to meet the needs of the Waikato Region in terms of industrial and residential growth.
 - (c) WEL had for some time been reviewing a range of generation options throughout the North Island. As a result, it became clear that to optimise the benefits of wind generation, that WEL had to locate these types of projects within WEL's geographic network area.
 - (d) WEL considered that there would be significant benefits in generating electricity close to the source of existing and predicted future demand, particularly as the electricity could be used by WEL customers. It also carried a number of other benefits, including growing the Waikato work force's skill base, enhancing network capacity and security of supply and the ability to eventually sell renewable energy.
 - (e) WEL was also conscious that the financial benefits that WEL gains from harnessing local generation flows back into the community, including discounts on electricity bills.
 - (f) WEL considered a range of other generation options such as hydro, wood waste, and solar generation, but none provide the same advantages for WEL as wind generation does.
 - (g) Local generation at Te Uku provided opportunities to strengthen supply to Raglan for which WEL had looked at other distributed generation options, including diesel generation.
 - (h) Energy efficiency initiatives, while vital, would not displace the need for new generation. It is desirable that this be from a renewable source.
- 2.3 Aside from local benefits, there are well defined national benefits to be derived from wind generation, such as reducing transmission losses, contribution to

New Zealand's renewable energy target (the 90% Challenge), reduction in dependence on the National Grid, etc. In that regard, any generation north of the North Island constraint at Whakamaru represents a national benefit.

2.4 WEL decided to engage in consultation with both the local community and the broader Waikato community during the investigation and consent preparation stages of this project. WEL announced the project at a very early stage, prior to much of the technical investigations being completed and before the project was fully defined because, as part of the community, we wanted to provide ample time for discussion. I consider that the public engagement in relation to this project has been extensive and robust.

3. **RATIONALE FOR THE TE UKU PROJECT - HISTORICAL CONTEXT AND REGIONAL BENEFITS**

3.1 In this section of my evidence, I will outline the rationale for WEL's decision to investigate the potential for wind farms in the region and ultimately to seek to authorise a wind farm at Te Uku.

3.2 There were a number of reasons for WEL's decision to pursue the Te Uku Wind Park, which I will discuss presently. An important factor was WEL's commitment to promote and support economic growth in the Waikato Region for the benefit of the Waikato community, including the recycling of economic benefits in the area. A key factor in that regard was a responsibility which we felt for WEL to look for opportunities to generate renewable energy within the Waikato Region. While WEL was entitled to look for renewable generation opportunities anywhere in New Zealand, the Board made a conscious decision to keep these initiatives local in order to maximise local benefits.

Regulatory changes

3.3 WEL is an electricity lines company whose primary function is to distribute electricity around the Waikato Region. Until recently, lines companies were not able to undertake electricity generation functions. The Electricity Industry Reform Act 1998 ("the Act") prohibited lines companies from generating electricity in New Zealand.

3.4 Recent changes to that Act enabled lines companies to engage in generation activities in limited circumstances, namely new generation of energy from renewable sources.

- 3.5 These legislative changes opened the door for WEL to undertake generation activities. While entering the generation market would provide clear financial benefits to the company, WEL believed that there were also a range of other benefits to the region which are detailed later in this evidence.

Support growth in the Region

- 3.6 At the time that WEL was considering undertaking generation activities in the Region, I was the Chairman of Katolyst, which is an organisation that promotes economic development in the Waikato Region. Katolyst brought together the regions economic development agencies including the Business Development Centre, Tourism Waikato (which has since been disestablished) and the creation of Innovation Waikato, the Region's innovation centre. Katolyst has grown to include the development of cluster business support groups including the newly added and government supported Aviation cluster.
- 3.7 As the Chairman of Katolyst, I was aware that significant economic growth was forecast for the Waikato Region and that this will be reflected through into the load growth WEL Networks is presently and expecting in the future.
- 3.8 We considered that, being a community owned company, WEL had some responsibility to assist to meet the needs of the Waikato Region in terms of residential and industrial growth. This was another factor that contributed to the ultimate decision to pursue the opportunity to generate electricity for the region via a wind farm at Te Uku.

Development within WEL Network area – benefits of local generation

- 3.9 It was also felt that the development of additional renewable generation in the Waikato would assist the significant agricultural exports from the Waikato “clean green” branding and help overcome overseas markets’ food mile perceptions.
- 3.10 In that regard, WEL saw that there would be significant benefits in generating electricity close to the source of demand and, in WEL's case, there is a particular advantage as the electricity can be used by WEL customers. Thus, while WEL could have pursued wind generation anywhere in New Zealand the decision was taken to look for opportunities in the Waikato Region, to maximise the opportunity to “recycle” benefits. (Mr Shaw and Mr Burchett's evidence will cover the actual distribution of the electricity generated in more detail.)

- 3.11 The major benefits to WEL of renewable generation include:
- (a) It allows the company to invest in new opportunities to grow the business and create new skill bases. WEL would invest only if the generating opportunity was commercially viable
 - (b) Offsets peak demand charges at its point of connection to the national grid.
 - (c) Provides a smarter way of using clean green renewable generation to provide future network capacity closer to the point of use, which would reduce the need for more costly network upgrade solutions.
 - (d) Provide network support and enhancement including demand management.
 - (e) In the long term, it could provide the opportunity to sell renewable energy, subject to Government policy.
 - (f) Contribute to global climate change mitigation
- 3.12 Having regard to these type of benefits, it is more feasible for a lines company with local commitments and business goals to viably undertake smaller generation projects. This is because the threshold to entry is lower than for national generation companies (the massive size of the proposed Contact West Coast wind farm seems to underpin this). In addition, distributed generation aligns with lines companies' core business objective of achieving security of electricity supply. Both are consistent with the promotion of renewable energy projects by lines companies which is being promoted by Government in accordance with the changes to the Electricity Industry Reform Act.

Benefits flow back to community

- 3.13 As noted in Dr Elder's evidence, WEL is owned by the WEL Energy Trust on behalf of the wider Waikato community. Hamilton City Council, Waikato District Council and Waipa District Council are the capital beneficiaries. In that regard, the financial benefits that WEL gains from harnessing local generation flow back into the community via a number of mechanisms – one of those being discounts on electricity bills.
- 3.14 WEL also considered that it would be better for a community owned organisation like WEL to be making money from generation activities in the Waikato Region than any other companies owned by the central government or private interests as the benefits would flow back to the Waikato community.

Generation options

- 3.15 Regional or distributed renewable generation is more likely to be developed by local line companies because they can be embedded in local distribution networks and because the major generators are not so likely to be interested in smaller plants. WEL considered the whole range of generation options before coming to a decision to pursue wind generation.
- 3.16 WEL considered micro hydro-electricity generation. We felt that it would be difficult to get consents for hydro development in the Waikato Region. In particular, the opportunities for hydro-generation inside WEL's area are scarce.
- 3.17 The Maui field, which has been the main source of gas supply in New Zealand for the last 30 years, is nearly depleted, so gas was not a viable option for future supplies. The Government has also made it clear that its focus was on renewable generation and the regulatory framework discouraged network companies from investing in non renewable generation.
- 3.18 While there is a plentiful supply of coal, fossil fuel generation is being discouraged.
- 3.19 The Government has recently released its Energy Strategy which aims for 90% of electricity to be generated by renewable resources by 2025, which essentially means that (aside from hydro-generation) generation is limited to wind, geothermal, co-generation, bio fuels, solar and marine generation. The Government has also announced that it is looking to place a moratorium on thermal generation for the next 10 years.
- 3.20 WEL has also investigated landfill gas and has installed a generating plant at the Horotiu landfill and has been investigating other opportunities in the region. In addition, WEL has examined the use of wood waste, biogas from dairy farm waste digestion and solar hot water heating. We have examined photovoltaic solar and have installed a small plant at Vardon School.
- 3.21 The Waikato coastline has good potential for marine generation, but technology is still in the development phase. Geothermal is obviously a resource that is reasonably abundant in the Waikato Region, but WEL's network area is a long way from the resource and the benefits to be derived from local generation would not be realised. For various reasons these technologies are either uneconomic or to difficult to pursue by comparison with wind energy.

Strengthening supply

- 3.22 Over the recent years, the Waikato Region has experienced significant growth in terms of both population and industry. In particular, the growth in the western part of WEL's supply area, including Raglan, required WEL to consider measures to strengthen supply to those parts of the region.
- 3.23 To date, WEL has implemented remedies to address quality of supply issues in the Raglan area, such as line upgrades and load segregation, but growth in demand means that the only long term fix is to provide additional capacity into the Raglan area.
- 3.24 WEL looked at a number of options for strengthening supply to the Raglan area. They initially included a line build solution and a diesel-generation option. The line upgrade proposal continues as an interim solution. The Wind Park project completes the overall western supply enhancement solution.

Energy efficiency

- 3.25 When considering options for further generation, it is important to note that WEL has always actively promoted energy efficiency solutions to its customers. The Trusts energy efficiency projects are not insignificant, as they spend about \$400K to \$500K per annum.
- 3.26 I am passionate about the value of energy efficiency solutions and while these are essential to reduce and improve the best utilisation of energy used, the future energy security of NZ requires management of both energy supply and energy demand. Energy efficiency is the key contributor to managing energy demands. However, energy efficiency by itself will not solve the supply to the Western Waikato. (Mr Shaw's evidence will cover the various aspects and reasons for this requirement.)
- 3.27 Wind energy was seen as the most viable source of renewable energy in WEL's supply area. Although Waikato is not seen as the best wind area in New Zealand, it is recognised as having good potential along the coastal hills. Detailed assessment of the regional potential identified the Te Uku site as the most promising.

4. NATIONAL SIGNIFICANCE OF WIND GENERATION AND TE UKU PROJECT

- 4.1 I have outlined the regional benefits of wind generation at Te Uku in the previous section. But the Te Uku project represents an opportunity to provide generation benefits not only locally (Raglan area) and regionally (Waikato), but also nationally

and even globally. In that regard, it is not to be overlooked that there is a well accepted range of broader national benefits of wind generation. These are generally well known but worth briefly reciting here.

- 4.2 New Zealand needs a more diverse generation base to reduce dependence on hydro and to reduce the need for thermal generation which has adverse effects, including contributing to climate change and depleting fossil fuels. On an annual basis, wind energy is a reliable resource and will be dispatched in preference to thermal sources.
- 4.3 Use of renewable energy and its location close to sources of electricity demand, like Te Uku, enhances security of supply through diversification of New Zealand's generation base and reduces dependence on the National Grid, thus delaying transmission upgrades and reducing transmission losses.
- 4.4 Generation at Te Uku will provide some assistance to Auckland's security of supply problems.
- 4.5 For these reasons, the New Zealand government is, as a matter of national energy policy, actively encouraging and pursuing options for renewable energy which reduces greenhouse gas emissions and contributes to New Zealand's renewable energy target. In that regard, the Government's recent announcement of the "90% Challenge" is a significant indicator of the benefits of renewable generation sources.
- 4.6 The Te Uku project contributes to these benefits and enables the Waikato Region and WEL to make a positive contribution in that regard.

5. **EARLY PUBLIC CONSULTATION AND OUTCOMES**

- 5.1 Mr Dawson will address consultation undertaken and outcomes in detail in his evidence. As an adjunct to that, I would like to describe the consultation and communication philosophy that WEL has adopted throughout this project.
- 5.2 WEL undertook full communication and consultation with both the local community and the broader Waikato community during the investigation and consent preparation stages of this project. The Board and WEL management made a conscious decision to announce the project at a very early stage, prior to much of the technical investigations being completed and before the project was fully defined because, as part of the community, we wanted to provide ample time for discussion.

- 5.3 At the time of the public announcement on 11 March 2006 we had completed initial investigations, including preliminary feasibility studies into the wind resource, land availability and a preliminary turbine layout. We tried very hard to understand the concerns of the local community during the development phase of the project so as to be able to take account of those concerns, where possible, in the final design.
- 5.4 As part of the initial communication phase we announced the project via a press release in the local papers, and prepared direct mailers with personalised letters, and a tabloid brochure. The distribution spread of the information was as follows:
- (a) Approximately 2000 WEL customers west of the Waipa River, out to Raglan and north to Te Akau received a personalised letter, a four page tabloid and a Question and Answer booklet;
 - (b) Approximately 66,000 remaining WEL customers (i.e., those with Genesis Energy, incumbent retailer) throughout the rest of the WEL distribution network received a personalised letter and a fold out brochure;
 - (c) The top 100 businesses and business leaders around the Waikato received a personalised letter, a four page tabloid and a copy of the Question and Answer booklet.
 - (d) I spoke to numerous community groups.
- 5.5 I **produce** copies of these documents, including sample letters.
- 5.6 It was my decision to be the WEL spokesperson at the five public meetings that were held shortly after the public announcement of the wind park project in Te Uku, Te Mata, Raglan, Kawhia and Te Akau. Feedback received from those meetings resulted in additional work being undertaken by WEL in the investigation stage of the project, such as finding a new route for access to the site, batching concrete on the site rather than transporting it over local roads, etc. In addition, WEL undertook to look further at the feasibility of micro hydro, wood waste electricity generation options, passive solar water heating, potential effects on land values and community benefits from the wind park project.
- 5.7 I am aware that some submitters have criticised WEL's consultation effort but I find it difficult to understand this criticism. I remain confident that it was the correct decision to engage with the community at the formative stages of the project so there would an opportunity to take their views into account and to disseminate quality information throughout the process. The literature produced and information

available on WEL's website demonstrates the commitment to community engagement that we embraced at the outset.

5.8 I remain a strong supporter of the Te Uku project for all of the reasons outlined above.

Michael Underhill
November 2007