

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 RODGER GALLAGHER
(Assessment of claimed benefits)**

1. INTRODUCTION

Qualifications and Experience

- 1.1 My name is Rodger Wayne Gallagher. I am the Managing Director of Customer Value Management New Zealand Ltd and Customer Value Management Australia Pty Ltd. I have more than 37 years experience in professional engineering and business management. For the last eighteen years I have specialised in strategic business consulting, cost benefits studies and marketing research and modelling. I am an expert at establishing causal relationships between research data and market behaviour. I have a Bachelor of Engineering degree from the University of Auckland. I am a Member of the Market Research Society of New Zealand, the Institution of Engineering & Technology UK, and a Senior Member of the American Society for Quality.
- 1.2 In 2007 my companies undertook strategic market research, econometric modelling, and business consulting for multi-national clients in Japan, Australia, Thailand, The United States of America and the United Kingdom. Work is undertaken across a number of sectors including tourism.
- 1.3 I am the author of the book, Customer Value Management: The CVA 2000 Collection, and of the corporate implementation guide, Focusing on Customer Value Added. My published papers include, 'Modelling Customer Satisfaction at Telecom New Zealand', (European Journal of Marketing) and 'The Role of Innovation in Establishing a

Customer Service Operation for Maximum Customer and Business Benefit', (Proceedings of the Decision Sciences Institute Fourth International Meeting). My work at Telecom New Zealand is documented in Bradley T. Gale's book, 'Managing Customer Value', in the section: 'Testing the Customer Value Philosophy at Telecom of New Zealand.' My work for Vodafone NZ Ltd and Roche Diagnostics Ltd is documented in the book, 'Mastering Customer Value' by Raymond Kordupleski.

Involvement in Project

- 1.4 I provided evidence to the initial hearing session.
- 1.5 I am a resident, business proprietor and property owner in Raglan, involved in local organisations.

Purpose and scope of evidence

- 1.6 This evidence considers the subsequent evidence presented by Paul Callow, Andrew Kirkland, Jim Truesdale and Roger Burchett
- 1.7 Against that background my evidence will address the following:
 - (a) The methodology, findings and recommendations made by Paul Callow of Deloitte, Wellington;
 - (b) The wind energy evidence by Andrew Kirkland of Hydro Tasmania;
 - (c) The electricity market and carbon emissions evidence by Jim Truesdale;
 - (d) The wind penetration information provided by Roger Burchett.

2. VALUATION BEST PRACTICE

- 2.1 Paul Callow states that net present value (NPV) is the best practice method for assessing investments. From its first use in the 1930s for planning railroads in the United States it has become an important business tool. It is certainly not the only approach used to value investments and there are other approaches that I would regard as best practice. For example Royal Dutch Shell uses scenario planning developed by Pierre Wack, "Scenarios: Uncharted Waters Ahead." Wack, (Pierre Harvard Business Review 63, no. 5 (1985)) as the basis for decision making as its energy investments. Given the success of Shell financially I would suggest that this approach is more regarded as best practice rather than the simple NPV approach favoured by WEL Networks Ltd and Deloitte's Wellington office.

2.2 NPV is a tool. As is the case with any tool, it is the way that it is used that determines the quality of the finished job.

3. **DELOITTE NPV ANALYSIS**

3.1 Paul Callow's study has determined that WEL's proposed wind turbine generator development at Te Uku is marginally economic over a 40 year operating period using a hurdle rate of 10.1%. On this basis, Paul Callow and Deloitte's have recommended that WEL should proceed with the project. It seems strange that Deloitte's are recommending a marginal 40 year investment of \$200 million. WEL could achieve a much more solid investment with an interest rate only slightly lower than the project's hurdle rate of 10.1% with a term deposit at Kiwi Bank.

3.2 Paul Callow has identified that deleting just one turbine, "would leave the project with questionable economics". Given the marginal nature of the project and the finding that one turbine had such a dramatic effect on project economics it is disappointing that Paul Callow did not investigate the impact on the project of different prices for electricity and different power output scenarios. In paragraph 7.6 Paul Callow discusses electricity prices and points out the electricity price may be just above zero at times. Given this statement, it appears that the NPV study is deficient.

3.3 In paragraph 5.6, Paul Callow says, "We have not included any terminal value assumption in our analysis of the project's viability." Paragraph 12.0 of WEL's application says that if the wind farm ceases operation for a continuous period of 18 months, the wind farm shall be decommissioned. The turbine structures would be removed, and the site rehabilitated and revegetated. Given this statement in the application, omission of these values from the Paul Callow's NPV is a serious issue. Internationally, many wind power companies have a poor record in regard to removing used turbine structures and rehabilitation. This omission from the NPV study indicates that WEL has made no financial provision to allow it to honour Paragraph 12.0 of its application.

4. **DELOITTE NPV ANALYSIS- DECOMMISSIONING**

4.1 One of the worst examples of a wind farm that has not been dismantled is the South Point wind farm on the island of Hawaii. This wind farm was constructed in 1986. It ceased operating in 2006 and was abandoned. The towers and dilapidated turbines were still standing in September 2007. A brand new wind farm has been built next to the old site. So now at South Point there is the original old dilapidated wind farm and the new one right next to it. In the text book on establishing wind turbine generators, "Wind Energy Comes Of Age", Paul Gipe- published by John Wiley, Gipe points out the problems caused by poorly managed wind companies who do not remove non-

operational turbine towers and gives guidance to planners and regulators on how to manage this problem;

(a) **Visual Design- Use Them or Lose Them**

(From page 302) "There are few more convincing demonstrations of how well wind energy works than to see Zond's "wind wall" in Tehachapi on a blustery day. If watching 400 turbines dancing on the hillside is unconvincing, a drive over the pass to SeaWest's Mojave site can be instructive. There on the gently sloping flank of Cameron Ridge stand another 1060 turbines nearly every one of them in operation. **Unfortunately, there are hundreds, if not thousands, of wind turbines in California that are less reliable, less well maintained, and less well sited than these. Some simply do not work.** These inoperative turbines stir controversy far out of proportion to their numbers. "Abandoned or derelict turbines, consultants to Riverside County advised, "have become one of the unexpected major sources of visual impact in the San Corgonio Pass"¹⁵² The public's concern about usefulness and the importance they placed on whether the turbines operate properly also surprised the U.C.-Davis researchers in their study of Altamont pass, They concluded from this that the single most significant action that California wind companies could take to boost public acceptance of wind energy was to keep their wind turbines operating as much as possible by quickly fixing broken turbines and removing those that were unrepeatabe. Yet by 1991 there were still enough derelict turbines near Palm Springs alone for the Edison Electric Institutes Charles Linderman to plead with attendees of AWEA'S annual conference: "Please get those inoperative machines down to avoid the misinterpretation that wind still doesn't work." **Few listened.**"

(From page 303) "The problem is not unique to California. Dutch planners worry that inoperative turbines will make acceptance of new installations more difficult. Support wanes quickly when people see rotors at a standstill, says Gerrit de Long, a planner for Het Bildt a small Dutch village. Long explains that "people say that if the wind turbines are not working they are just polluting the horizon." **To avoid this, the village conditions the turbines environmental permit on removal of all turbines that have stood idle for one year.**¹⁵⁴ Because removal may incur modest costs or trigger legal obligations to restore the site most firms with inoperative turbines choose to sit and wait. Riverside County was forced to remove several hundred abandoned wind turbines on the Maeva site near Palm Spring at its expense. Near Tehachapi a half dozen twisted hulks were removed only after the local Sierra Club filed a nuisance complaint because the turbines stood near the Pacific Crest Trail. One major Tehachapi operator has turbines on its site that have stood inoperative since 1985. At a small project nearby another firm operates only half its 80 turbines and towers for the other half stand in mute testimony to a flawed design. These

100 or so turbines account for only a fraction of the 5100 in the Tehachapi Pass. Nevertheless to draw the public's ire only a few inoperative turbines are needed.”

“In Tehachapi and the nearby desert crossroads town of Mojave, critics demanded that the county require removal of inoperative turbines and that each turbine be bonded to pay for removal if the operator failed to do so.”

“Regulators found a significant obstacle to quick removal; inoperative wind turbines are not necessarily abandoned in the legal sense. Some wind machines encounter design defects that are difficult and time consuming to correct. This occurred frequently during California's early days when many of the first-generation turbines were inoperative much of the time. Well meaning regulators gave operators ample time to make repairs. Technical problems plagued the Fayette design, for example, and Alameda regulators allowed more than enough time for Fayette to correct the problems.”

(From page 304) “Even when turbines are operable, repairable, or slated for removal, legal disputes can delay resolution for years. Still wind companies and their regulators have an obligation to ensure that wind turbines are either operable or are removed if they are not. Wind turbines are a modular technology. They can be quickly installed and just as easily dismantled. With the exception of the concrete foundation and any deep road cuts, the site can be restored quickly once the turbines have been removed.”

- 4.2 Decommission bonding of wind turbines to cover removal costs, has moved from being a good idea to being best practice. Internationally, many local authorities now include a decommissioning bond in their planning laws. For example in New York State, the Town of Allegany adopted the following Wind Energy Regulations on 28 August 2007 as part of its Land Zoning Ordinance;

“(D) Decommissioning and Site Restoration Plan and Bond

- (1) The applicant shall submit a Decommissioning and Site Restoration Plan, including cost estimate, to the Town Planning Board for its review and approval, prior to the approval of any Special Use Permit. The restoration plan shall identify the specific properties it applies to and shall indicate removal of all buildings, structures, wind turbines, access roads and/or driveways and foundations to 3.5 feet below finish grade; road repair costs, if any; and all regrading and revegetation necessary to return the subject property to the condition existing prior to establishment of the commercial WECS. The restoration shall reflect the site-specific character, including topography, vegetation, drainage, and any unique environmental features. The plan shall include a certified estimate of the total cost (by element) of implementing the

removal and site restoration plan. The Decommissioning Plan shall include information regarding the anticipated life of the project.

- (2) As a condition of Special Use Permit approval, the Planning Board shall require the project sponsor to execute and file with the Town Clerk a bond or other form of security acceptable to the Town Board and Town Attorney as to the form, content and manner of execution, in an amount sufficient to ensure the faithful performance of the removal of the tower, wind turbine, and other components of the WECS and the restoration of the site subsequent to such removal, in accordance with the approved Decommissioning and Site Restoration Plan.
- (3) The sufficiency of such bond shall be confirmed at least every five years by an analysis and report of the cost of removal and site restoration, such report to be prepared by a NYS licensed engineer. The project sponsor/operator shall pay the cost of such report. If said analysis and report determines that the amount of the bond in force is insufficient to cover the removal, disposal and site restoration costs, the bond shall be increased to the amount necessary to cover such costs within 10 days of the applicant's receipt of such report. The report and increased amount of the bond shall be filed with the Town Clerk.
- (4) All bond requirements shall be fully funded before a Building Permit is issued.
- (5) The Decommissioning and Site Restoration Bond shall be in effect for the entire duration of the Special Use Permit.
- (6) The applicant and his/her successors or assigns in interest, shall maintain the required bond funds for the duration of the Special Use Permit.

(E) Road Bond

- (1) Construction of WECSs poses potential risks because of the large size of construction and transport (delivery) vehicles and their impact on traffic safety and their physical impact on local roads. Construction and delivery vehicles shall use traffic routes established as part of the application review process. Factors in establishing such corridors shall include: (1) minimizing traffic impacts from construction and delivery vehicles; (2) minimizing WECS-related traffic during times of school bus activity; (3) minimizing wear and tear on local roads; and (4) minimizing impacts on local business operations. Permit conditions may limit WECS-related traffic to specified routes and include a plan for disseminating traffic route information to the public.
- (2) The applicant is responsible for remediation of damage to public roads caused by WECS-related traffic, after completion of the installation of the WECS. To ensure that this remediation occurs, prior to the issuance of a Building Permit, the project sponsor shall post a public improvement bond in an amount, as determined by the Town Board and Highway Superintendent, sufficient to repair any damage that occurs to Town roads during the construction phase of the project. The Town Attorney shall approve the form of the bond.

(3) In the event that any post construction maintenance or replacement of components, which could affect Town roads, is necessary, the project owner/operator shall notify the Town and a new bond for any potential damage to Town roads shall be posted.”

4.3 Is WEL Networks hoping that another power company or the Waikato District Council will pick up the cost of dismantling the proposed wind farm? It is important that this is avoided by bonding each individual turbine and including these costs in the NPV study with a requirement that any wind turbine generator that is not operating for 12 months is removed. Would the inclusion of these costs move the project from being a marginal investment to being a rejected investment proposal?

5. DELOITTE NPV ANALYSIS- REVENUE

5.1 Paragraph 5.8 of the Paul Callow’s evidence lists a number of factors that influence revenue for a wind turbine generation project. No indication is given of the wholesale electricity price used in his NPV analysis. In paragraph 7.6 Paul Callow discusses electricity prices and points out the electricity price may be just above zero at times. We are told that the “price path” was supplied to WEL by Energy Link. The generation output profile was supplied by Hydro Tasmania. It is normal practice in forecasting work to give a range of possible outcomes and to specify confidence levels. This information is absent from Andrew Kirkland’s evidence. We know from Paul Callow’s work on removing individual turbines from the NPV analysis that removing just one turbine out of 28 moves the project from being marginal to being a rejected investment. i.e. With Turbine 29 removed (Output of 10.7 GWh/yr, 10.7/ 261GWh/y), equivalent to 4.1% of the wind energy the project is not viable. (Energy data from Andrew Kirkland’s evidence paragraph 5.14.) **This means that if the actual overall wind energy is just 4.1% less than Hydro Tasmania’s prediction, then the whole project is not viable even with 28 turbines.** Given the finding that this project is marginal economically, a more robust approach would have been to undertake the NPV for a range of electricity prices and generation output profiles.

5.2 In Paul Callow’s evidence, paragraph 5.8 covers revenue and paragraph 5.17 covers cost of sales. It appears that Paul Callow has not given any consideration to the fact that electric energy generated by wind turbines has a lower revenue value than electricity generated from other sources due to the erratic nature of wind generation. A study out carried in 2007 for the State of California (Stage 1 California Public Utilities Commission, GHG Modeling – October 31, 2007) showed that the cost of integrating wind energy increases as the wind share of generation capacity increases in a given generation control area. The modelling study is a “study of studies” based on the findings from work looking at the integration costs for 32 electric power control areas in North America. Many of these power control areas are mainly hydro based. The study

normalised all generation areas by penalising non-hydro areas with a 30% cost loading area. See graph below.

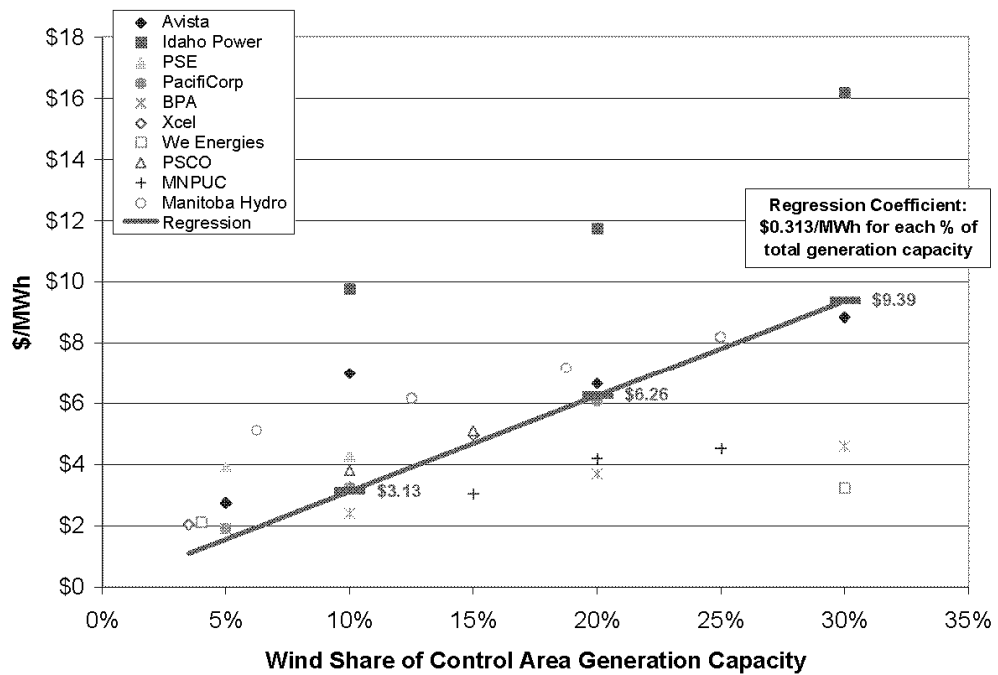


Figure 1. Cost of Integrating Wind Energy as a Function of Wind's Share of Total Generating Capacity

5.3 A regression model without an intercept achieves an R-square value of 0.79 across the 32 sets of data. The regression coefficient indicates that for each percentage point of wind energy penetration, (expressed as wind's share of total nameplate capacity in the control area), wind integration will cost \$0.3128. (USD). Given the extremely high regression coefficient, the fact that hydro areas were included in the studies and thermal generation methods had a weighting penalty, this study is directly applicable to New Zealand.

5.4 The GHG study points out that the hourly cost applies to all wind energy generated, meaning that as the amount of wind generated doubles, the total integration cost quadruples. Figure 2 shows how the total cost of wind integration varies with wind's share of total system capacity. The figure assumes a control area size of 50,000 MW, and assumes that all wind energy facilities operate at a 34% capacity factor. The figure shows that for low levels of wind generation, the cost of integration is very low: only \$30 million for nearly 10,000 GWh of wind generation. However, as wind generation approaches 20,000 GWh, the total cost of integration is over \$120 million. At 30,000 GWh, the cost is approximately \$275 million. Although the amount of wind power in New Zealand is obviously much lower than that shown in this graph, the same principle applies, **“As the amount of wind generated doubles, the total integration cost quadruples”**.

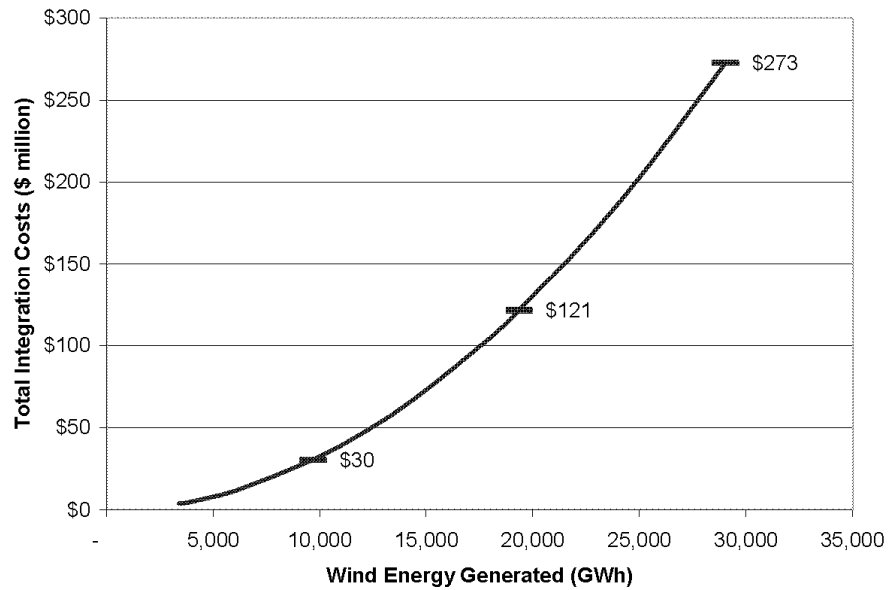


Figure 2. Cost of Integrating Wind Energy in a 50,000 MW Control Area, as a Function of Total Wind Energy Generated

5.5 Looking at Manitoba, a smaller control area with mainly hydro power, the table below shows that the same finding applies. As wind capacity increases from 6% to 23% penetration, the integration cost rapidly escalates. “Wind/Hydro Integration for Manitoba Hydro’s System” UWIG March 22nd, 2007 by Bill Girling, Manitoba Hydro Power Supply.

MH Wind Integration Costs Levelized Cost in ¢/kWh (2006 Cdn\$)		
Wind Penetration Level	WIND Capacity MW	Integration Cost (¢/kWh)
6%	250	0.5 ¢/kWh
12%	500	0.55 ¢/kWh
17%	750	0.6 ¢/kWh
23%	1000	0.65 ¢/kWh

5.6 As WEL will be a late arrival as a North Island wind generator it will be well up the cost curve. The electric power it will have for sale will either be subject to an integration penalty or it will be sold at a lower price on the spot market as it is a lower value commodity. As more and more wind power is added, the electricity generation system

soon reaches a point where fast-ramping gas turbines are needed to match every MW of wind power installed.

- 5.7 If these additional costs and/or lower prices had been accounted for by Paul Callow, would the project move from being a marginal investment to being a rejected investment proposal?

6. **DELOITTE NPV ANALYSIS- COSTS**

- 6.1 Paul Callow acknowledges that cost of sales includes plant maintenance and warranty agreement costs and that operating costs covers insurance, without specifying the actual costs. We are told that the Vestas V90 has a warranty period of 9 years. We are not told whether the warranty covers loss of revenue caused by faults occurring after commissioning.
- 6.2 Wind Turbine Generators continue to suffer technical faults and failures. For example reports indicate that turbines at the Te Rere Hau and Te Apiti wind farms have continuing oil leaks. Internationally the year started with a catastrophic failure of a 19-year old Vestas tower in Cumbria, one year before the 20-year “design life” of the wind turbine generator. This was followed soon after by a failure of a two-year old tower in Mie Prefecture, Japan. A report in the Asahi Herald commented, “Malfunctions and accidents involving wind turbines have occurred repeatedly across the country, leading to suspended services and even the scrapping of one facility.”
- 6.3 Internationally in the 2007 year until November, there were 14 catastrophic failures of turbine blades, 9 instances of fires and 9 structural failures of towers. Ref: Caithness Wind Farm Information Forum, Summary of Wind Turbine Accident data to November 30th 2007 (See appendix 1). While insurance is available to cover these types of costs and loss of income, it is costly and often there are significant exceptions for cyclones and similar events.
- 6.4 The costly failures and catastrophes add significantly to the operating costs and cost of sales for wind power companies. Eize de Vries in a December 2007 article in Renewable Energy News points out that, “Potential future costs to correct failures as a result of these technical imperfections can be substantial. Sourcing components: The challenge of sourcing quality wind turbine components, and reliability issues an example, a faulty gearbox bearing in a 2 MW turbine costing just €100 can, in a worst-case scenario, result in a €200,000–€250,000 bill for a replacement unit, including additional equipment like a crane and manpower costs.” There is no statement in the Paul Callow evidence to indicate that WEL have budgeted adequately for these types of costs or for a fire safety plan or any allowance for loss of sales revenue while non-operational turbines wait to be repaired. Once again there appear to be significant omissions from the costs allowed for in the Paul Callow’s NPV analysis.

7. **ELECTRICITY MARKET ARRANGEMENTS and CARBON EMISSIONS**

- 7.1 A large part of Jim Truesdale's subsequent evidence is taken pointing out that New Zealand generates most of its electricity from hydro resources and then comparing that to countries who generate electricity by other means. It seems strange that he did not explore electricity markets with substantial hydro resources and the issues they have encountered integrating wind generation into their networks.
- 7.2 Jim Truesdale points out that hydro can be started up quickly and vary production quickly. He then points out that in practice storage capacity is limited and during hydro droughts, thermal stations are vital.
- 7.3 This was proved during February 2008 when a situation of a hydro drought and no wind caused grid emergencies that saw the need for the fast-ramp Whirinaki station to be brought into service. This is a good practical demonstration of the need for wind turbine generators to be backed up by fast-ramp thermal stations. On 13.02.08, Transpower and an industry working group announced that it is looking at the possibility of importing 100 large diesel generators to avoid blackouts in the 2008 winter.
- 7.4 After a lengthy discussion Jim Truesdale concludes that, "Te Uku would make an initial contribution towards reducing carbon dioxide emissions of 168,000 tonnes per annum, but that figure may be smaller depending how the mix of generation development alters over time." Given the fact that WEL will be a late entrant to the wind generation business, we know the reason why Jim Truesdale has added the rider, "may be smaller", to his prediction. The early entrants to wind generation will have already used all of the flexibility from New Zealand's hydro resource.
- 7.5 By the time WEL gets round to building a wind power plant, there will be little carbon benefit as explained in the Stage 1 California Public Utilities Commission, GHG Modeling report– October 31, 2007.
- 7.6 In paragraph 5.5 points he how difficult it is to estimate the carbon footprint of a 3MW wind turbine. He then goes on to attempt the calculation.
- 7.7 Fortunately the University of Auckland has recently completed a study into the carbon footprint of alternative energy projects Ref: A comparison of life cycle embodied energy and CO2 emissions from renewable energy technologies. Z Worth and Dr Carol Worth, DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING, University of Auckland. Their calculations for the Te Apiti wind farm gave 93,800 tonnes of carbon dioxide in total for 55 turbines rated at 1.65MW. This works out at 1705 tonnes of carbon dioxide for each 1.65MW turbine. This is almost double the 865 tonnes calculated by Jim Truesdale and even greater than Mr Cox's conservative estimate of 1,400 tonnes per turbine. As the turbines planned for Te Uku are 3MW, compared to

1.65MW at Te Apiti, the carbon footprint for each Te Uku turbine will be considerably greater than 1705 tonnes.

- 7.8 Jim Truesdale's calculations on carbon emissions appear to be inconsistent with published independent research and should be set aside.

8. **WIND PENETRATION**

- 8.1 Roger Burchett in paragraph 3.30 and subsequent paragraphs challenges my evidence on the wind penetration possible in New Zealand. He claims that my evidence was based on German results. It was based on a public statement made by John Blakey, Director at the Center for Advanced Engineering at the University of Canterbury as reported in the NZ Herald, *"1,000-1,500MW of wind turbine generators is the maximum that can be accommodated in the New Zealand system."*

- 8.2 Roger Burchett advises the preliminary results of a Ministry of Economic development that suggests the correct level for wind is less than 35% and market share less than 20%. In paragraph 3.33 he suggest the level is 1000MW before additional reserve is required. The series of grid emergencies that occurred in January and February 2008 are likely to mean that the "less than" proviso of the Ministry becomes "much less than". In regard to the Te Uku proposal, a New Zealand national figure of irrelevant. What is the maximum amount of wind that that can be used in the North Island? With electricity supplies to businesses having to be cut back it appears that for the North Island we have already exceeded the maximum amount of wind energy that can be incorporated into the system at 309MW unless additional fast-ramp thermal stations are built to back them up.

- 8.3 The new multi control area study conducted by the State of California across 32 control areas with an r^2 of 0.79 (Stage 1 California Public Utilities Commission, GHG Modeling – October 31, 2007) proves definitely that the more wind power is used, even in hydro control areas like New Zealand, the more that it costs.

- 8.4 In paragraph 3.35 says that probability of wind speeds being identical from Northland to Southland is extremely low. While the probability may be low it did happen in February 2008 and the identical wind speed was nil.

9. **ENERGY ALTERNATIVES**

- 9.1 Roger Burchett examines a number of alternative generation methods and says that they are all too expensive. But will they be so expensive by the time WEL Networks gets around to building the Te Uku Wind Farm? Already companies like Google are generating 30% of their electric power needs from solar electricity. With the release in December 2007 by Google-backed Nanosolar of its new thin film panels based on the

economics of printing, the price has dropped by half to less than \$NZ1.32 per watt. Already Roger Burchetts' calculations are out of date.

- 9.2 While Roger Burchett has worked out on-grid prices for solar electricity, the most cost effective applications would be off-grid on commercial roof tops in cities.
- 9.3 A more effective near term investment for WEL networks would be in heat pumps. \$200 million would cover the installation of 70,000 heat pumps in Waikato homes. This would lower electricity consumption and carbon emissions. With a small rental charge on power bills, less than the cost of the power saving, this would be a profitable investment for WEL that would not be marginal.

10. **CONCLUSIONS**

- 10.1 The proposed Te Uku wind farm has been confirmed as a marginal investment by Deloitte. An evaluation of WEL's further evidence indicates that if Deloitte had undertake a thorough investigation it is highly likely that the project would be rejected as an investment proposition.

Rodger Gallagher
February 2008

WIND TURBINE FAILURES