

**BOARD OF INQUIRY
HAUAURU MA RAKI WIND FARM PROPOSAL**

In the matter of the Resource Management Act 1991
And
In the matter of resource consent applications by Contact Wind Limited in
respect of the Hauāuru mā raki Wind Farm Proposal
And
In the matter of notices of requirement and resource consent application by
Contact Energy Limited for transmission infrastructure related to
the Hauāuru mā raki Wind Farm Proposal

BRIEF OF EVIDENCE OF PHILIP JAMES McDERMOTT

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INTRODUCTION

1. My name is Philip James McDermott. I am an independent consultant in development planning. I have been asked to provide a statement outlining the issues and principles raised by the prospect of a transmission line easement across the property owned and farmed by Mr and Mrs Walter at 241 Nolan Rd, Tuakau.
2. I am a member of the New Zealand Planning Institute and a Fellow of the Chartered Institute of Transport and Logistics in New Zealand. I have been a consultant on and off since I established a practice in the late 1970s (which became McDermott Miller Group in 1986 and McDermott Fairgray Group in 1991, disestablished in 2000). I was Professor of Resource and Environmental Planning at Massey University from 1994 to 1999 and General Manager of the Centre for Asia Pacific Aviation in Sydney from 2000 to 2004. I have advised a range of clients throughout New Zealand, Australia, Asia and the Pacific on transport and other infrastructure matters over my career. I have also consulted to the primary sector (processors and producers) and to government with reference to rural land use. I was a director of a private primary product exporter (mainly slipe, greasy and scoured wool), Raymond Dale Wool Marketing, recently acquired by listed company Wool Services Ltd.
3. I have prepared this statement following a visit to the Walter property and discussion with Mr David Walter about the property, current farm operations and possible impacts of the transmission line. My role has been to place his concerns in the wider context of project planning, economic principles, and resource management practice.

SUMMARY

4. In this statement I outline the project insofar as it is relevant to the position Mr and Mrs Walter find themselves in, including some of its economic parameters. These are relevant to the project's capacity to compensate for the externalities it creates: these are costs to third parties which are not otherwise reflected in the project. I outline the background to the farm, Mr and Mrs Walters' commitment to it, and the farm operation. I then consider the impacts of an easement for transmission across the farm (and, indeed, the impact of the *possibility* of such an easement) and suggest three broad means by which some of the costs imposed on the Walter family can be internalised to the project. These include Contact rerouting the transmission line, paying compensation, or purchasing the farm. The grounds on which these options can be considered be met are discussed. Finally, the possible economic implications for the project are outlined.

THE PROJECT

5. Contact Energy Ltd is a generator and retailer of electricity. It is listed on the New Zealand stock exchange and is 51% owned by Origin Energy Ltd, in turn listed on the Australian exchange. Through its wholly owned subsidiary, Contact Wind Ltd, Contact proposes constructing of a wind generating power plant, Hauāuru mā raki ("HMR"), close to the coast between Port Waikato and Raglan.
6. In a statement of evidence to the Board of Enquiry by Mr Geoghegan, Contact's Project Manager – Generation explained that:

The HMR wind farm is a key element in Contact's plan to have wind electricity generation projects available and capable of delivering new generation at the cheapest cost after viable geothermal options are implemented. Contact proposes to invest in excess of a billion dollars in the HMR wind farm. (paragraph 64).

7. Mr Geoghegan does not anticipate the first stage being commissioned before 2012-2013 (paragraph 68). Timing depends on when the cost per unit at which electricity can be generated by HMR is lower than alternative sources of new capacity. An early consent is required despite uncertainty around timing and a potentially long "lapse time" to enable Contact to advance the project as and when market conditions favour it.
8. HMR is based on 180 turbines. Any fewer would reduce economies of scale, increase unit costs for the electricity generated, and thereby push back the time at which HMR would be commercially viable (Geoghegan paragraph 75). The project is also sensitive to transmission costs. For example, the cost of undergrounding transmission would be such as to render HRM non-viable (Geoghegan, paragraph 76).

THE ECONOMICS

9. In his statement to the Board of Enquiry Mr David Hunt of Concept Consulting Group Ltd outlined the benefits of HMR as:
 - *making a significant contribution to New Zealand's future electricity supply;*
 - *avoiding the need to develop an alternative supply option that is likely to be more expensive;*
 - *providing greater diversity of electricity supply sources, including renewable energy; and*
 - *providing greater geographic diversity of wind energy supply;*

- *the economies of scale inherent in a sizeable wind farm, such as the Wind Farm project; and*
- *the potential for lower transmission losses, relative to some other potential new sources of supply.*

10. No quantification of economic benefit by way of a cost benefit analysis is provided. Such analysis would incorporate assumptions about the price of electricity at commissioning and test project sensitivity to variations in these assumptions and to variations in detailed costs (including the impact of foreign exchange movements). Nevertheless, it can be inferred from Mr Geoghegan's evidence (and as a matter of sound commercial practice) that the project will not proceed unless it shows a sufficient return on investors' funds. When that might happen depends on reaching a point in the path of national expansion of generating capacity at which the cost of generation at the next best alternative is higher than the cost of generation at HMR. At that point, the project will also offer significant benefits to the national economy by way of expanded capacity to support increasing demand and avoided costs, as outlined by Mr Hunt.
11. While figures on benefits are not provided by Contact, they are relevant to any consideration of the size and distribution of any external costs of the project, and its capacity to internalise them.
12. In his evidence on the economic impact of construction and operation of HMR Geoffrey Butcher identifies construction costs of \$1,048m, including \$2.4m for land acquisition. Only a partial estimate of direct value added from operations is provided (\$6.4m/year). This includes anticipated operating wages and salaries of \$2.6m/year. However, in the interests of commercial confidentiality and in light of the uncertainty associated with future electricity prices, Contact has not provided an estimate of return on capital which is a major component of value added (Butcher Exhibit GVB 1, p18).
13. Given the capital intensive nature of the project, its substantial cost, and the capacity of the company to commence the project when favourable market conditions prevail, it can be assumed that the return on capital will be substantial, even at a relatively low rate of return. At 10%, for example, the gross return would be in excess of \$100m/yr, out of which royalties and lease payments would be required to be made, together with interest, tax, and provision for depreciation. ¹

¹ This compares with an average return on assets in 2007 of 9.8% in the Electricity, Gas and Water Annual Enterprise Survey, Statistics NZ; an average return on total assets by Origin over the 5 years to 2008 of 11.2% (based on earnings before interest, tax, depreciation, amortisation and financial instruments) or 8.2% (based on earnings before tax and interest), or an underlying rate of return on equity of 11.5% according to the 2008 Annual Report. These ratios are lower for Contact Energy although EBIT has been 8.2% of total assets in the past two financial (June) years.

14. In considering what share of value added by the project might be directed to meeting external costs, it is useful to consider compensation made to landowners where turbines will be constructed. In his evidence, Mr Yates, Manager of Wind Farms Ltd, notes that:

There are 24 wind farm landowners (individual, trust or company) within the HMR wind farm footprint. The arrangements with the landowners who have signed final agreements are that each landowner will receive a share of the gross income generated by the turbines on their land, subject to a minimum payment per megawatt installed. In practice, I expect that would equate to a financial entitlement of between \$12,000 and \$20,000 per turbine per annum for the landowners, depending on the wind turbine model selected for the project and also variations in the wholesale power price.

15. This equates to annual rentals of between \$2.2m and \$3.6m to compensate for use of the land, including, presumably visual, noise and nuisance impacts.

THE TRANSMISSION LINES

16. The routing of the transmission lines is also an important part of project design, especially given the rate at which electricity loss increases over distance. It is therefore important to project economics to minimise the transmission route. In her statement to the Board of Enquiry Helen Yorke indicated that the review of transmission options:

took into account the length of transmission line and a preliminary review of other factors, such as number of properties and ecology (environmental) areas along the proposed transmission corridors. The preferred corridor was the one with the shortest length, the minimum number of properties affected, and best addressed areas identified as being of high ecological value by either avoidance or specific structure placement. (Paragraph 21)

17. Further:

The corridor was selected to be the most direct route between the substations, taking into account the other studies that have been carried out as part of the investigation process (Paragraph 83)

18. The review recognised the negative public perception of transmission lines. However, undergrounding in this terrain was considered prohibitively expensive. On this basis, the purpose of route selection was to:

select a corridor with the least impact on properties from both a physical and visual nature where possible. Due to the linear nature of the lines over 25 km, it

is acknowledged that in some cases the alignment can not be mitigated over every property and in order to fairly assess the impacts a rigorous evaluation process was carried out to ensure that the corridor with minimum impact was selected. (paragraph 84)

19. In summary, the evidence highlights the critical role of the transmission route to the success of the project. At the same time, the negative external impact of the transmission lines is acknowledged, along with the difficulty of minimising that impact across all properties. It can be argued, however, that if the success of the project hangs on the directness of the route, it is important that those parties most adversely affected by it should be adequately compensated. In terms of economic efficiency, it is inappropriate to externalise some of the costs of achieving the desired project outcome.

IMPACT ON THE WALTERS PROPERTY

20. Mr David and Mrs Pam Walter have farmed at 420 Nolan Road since 1964. The farm was originally established by Mr Walter's grandfather's brother in 1897, his grandfather subsequently working on the property. Although subsequently sold (in 1911), it was repurchased by the family in 1964. Mr Walter worked on the farm from that time and he and Mrs Walter purchased it outright from the family in 1975. They have farmed it since and intended to continue to farm it until Mr Walter no longer had the physical capacity to do so. Their ideal at that time would be to move into a retirement dwelling on the property and lease the main home and property out, such is their commitment to what is, in effect, a family heritage property.

21. The farm comprises some 374 ha of hill country. Two areas have been covenanted as QEII Trust bush blocks (totaling some 8.2ha). Other areas have low scrub and some regenerating bush (around 41ha). This non-covenanted area of scrub and bush is used for pig and deer hunting by family members. There is around 325ha of pasture. Much of this can be described as hard country, with around 10% (around 35ha) considered easier, suitable in theory for cropping. In practice this is used for summer feed, fattening, lambing and calving.

22. Around 1,200 ewes and 500 hoggets, 170 cattle and 40 yearlings are wintered, although it is acknowledged that with a greater input of capital and labour stocking rates and returns could be lifted. At present the farm can be managed by one person and a conservative stocking level is seen as appropriate in the light of recent drought and to enable an environmentally sensitive approach to land management.

23. The requirement for an easement for Contact Energy's transmission line through the Walter farm is under discussion. Preliminary plans indicate the presence of 6 pylons occupying a corridor of 2.7km by 200m in the development phase, reducing to 2.7km by 40m when completed. This implies a disruption of between 54ha initially, reducing to around 10ha in perpetuity. Between one third and one half of this 10ha comprises some of the easier county on the farm, reducing the share of the highest quality pasture by at least 10%. In reality, there may be some variation around the extent of disruption depending on how farm management is modified in response to the presence of the transmission lines.

24. The likely impacts on the Walter family can be divided into three:

- (1) **Loss of Enjoyment:** This is a family property to which the current occupants have a strong emotional bond. Mr Walter has occupied it for 43 years. He and Mrs Walter continue to enjoy the remoteness, peace and quiet, and raw nature of the property. These are characteristics which, given its location and character, they could reasonably expect to persist for the remainder of their occupancy. This character is now clearly compromised and their expectations undermined by the prospect of pylons traversing the southern valley and boundary and by the more distant views of generators on the western ridge through which they glimpse the Tasman Sea.

In addition, there will be a loss of utility from the reduced ability of the family to undertake recreational hunting on the property.

There is already significant personal stress both from the potential and eventual actuality of this loss of enjoyment, amenity and heritage, and from the impact on farming operations.

- (2) **Farming:** Farm operations will be disrupted by:
- *The uncertainty now facing farm management.* The contingent nature of the project, its timing and progress depend on movements in electricity prices and relative generating costs that Contact indicates it cannot predict. This raises questions over what levels of investment and stocking to undertake in the short-term and is likely to lead to even more conservative (and less remunerative) farming practices whether or not the project goes ahead.
 - *The disruption to farming from construction.* This will involve a period of intrusion onto the farm by third parties to build the pylons and hang the transmission lines. It will, in turn, require modification to farm operations

(and recreational activities) and additional inputs to maintain safety and security (for stock as well as contractors). It will also place important areas of grazing either “out of reach” or under pressure from construction.

- *The long-term impact of transmission lines.* While there is debate over the impact of transmission lines on stock in the corridor (which may or may not be confined to the 40m easement), a precautionary approach and conservative farming practice suggest a reasonable degree of separation should be observed for calving and lambing purposes. The land that will be affected has a significant role to play in these important activities which will be compromised as a result.

- (3) **Possible Sale:** While it was not intended to sell the farm in the foreseeable future, the change in character and compromise to the farming operation and family use of the property raise this as a prospect. One problem is that the possibility of a sale is raised at a point in the market cycle that is not particularly favourable. Under these circumstances, placing a farm that is encumbered with the probability or even the possibility of an easement for transmission lines at some unspecified date on the open market will further reduce the price and prolong the sale process. At a time when the stress arising from Contact’s plans have led the owners to consider selling, those plans also reduce their capacity to do so in an expeditious manner.

The solution may be for Contact to purchase the farm. If a sale and purchase price could be agreed between the Walters family and Contact Energy, the costs would be effectively internalised and the uncertainty reduced for both parties.

25. It is difficult to put precise figures on the impacts described. However, collectively they comprise a significant external project cost to be carried by a single family. The question raised on planning and natural justice grounds is how far this cost might be internalised?

THE OPTIONS

26. There are several options whereby some of the value added by the project may be used to address these externalities. In economic terms, the cost of any form of compensation (as discussed below) represents a transfer and does not reduce the net benefit of the project. If the project were not to proceed, then these costs would simply contribute to the substantial risk capital already committed to project design, planning and consenting.

27. Three options are advanced below.

- (1) **Adjustment to the Route:** Removing the easement from the property would go a long way to reducing the impact on the Walter family, especially with respect to degrading the farming, recreational, and heritage value of the property. Even then, the presence of the generating towers on the western ridge and the visible transmission lines from there will diminish their enjoyment and possibly still impact on any future farm sale (although to a lesser extent), so that grounds for monetary compensation remain.

At the same time, the evidence by Yorke suggests that the current easement is part of a preferred route, so that any substantial realignment may be impose relatively high costs on the project.

One compromise may be to reroute the eastern portion of the easement currently shown on the Walter property through the gully on the recently Harford property to the east. Contact has already purchased this property, subject to the approval of the Overseas Investment Office. This would leave the western-most portion of the easement on the Walter property (involving one if not two pylons). It would have a much reduced impact on the farming and enjoyment of the property. Mr and Mrs Walter might accept this compromise, subject still to compensation for the remaining impact.

- (2) **Substantial Compensation:** Any compensation package needs to recognise the three sources of loss identified above. While it is not possible to put a precise number on these, a process of negotiation could reach the point at which the amount offered offsets the loss to the Walter family: i.e., the external cost is equal to the value at which compensation is agreed.

In considering the principle and form of such compensation, consideration needs to be given to:

- The willingness of Contact to lease the sites of generating towers: the same principle can be applied to pylons and transmission lines;
- The alternative possibility of paying an annual rental for use of and access to the easement. This is a practice which would be new to New Zealand but recognises the commercial context within which the decision to develop HMR is being made; compared with the previous regime of publicly owned utilities (New Zealand Electricity, Ministry of Works and Development) pioneering transmission lines;

- The desirability of an up-front payment to compensate for loss of enjoyment and utility, in addition to any ongoing payment for access to the transmission route.

In making the suggestion of an ongoing payment, it can be argued that there is an anomaly in the costing of electricity distribution through which affected landowners effectively subsidise consumers. Rectifying this anomaly will not disadvantage the current project if that the same principle is applied to all generation projects. Under these circumstances, electricity prices would reflect the benefits of locating generation close to centres of consumption and favour more economically efficient investment.

- (3) **Purchase of the Property:** The costs of the easement to the Walter family are significant and multi-layered. Ultimately, the family is faced with a significant disruption to their lifestyle and their expectations which, if they cannot be fully compensated, suggest that sale of the farm is their best option. Unfortunately, in the current market there are unlikely to be many buyers and they will be discouraged by the threat of the easement. Under these circumstances it will take some time to sell the farm and even then it may be at a substantial discount to what could otherwise have been expected.

28. The most appropriate method of internalising these costs would be for Contact to purchase the farm at a price which recognises them and avoids compounding them with a monetary loss to the Walter family. Contact would be purchasing a farm which the owners had no prior desire to sell as it involves a premature change of lifestyle, a loss of heritage, and a reduction of income opportunities, so the price should incorporate a premium over and above a base market value. This value should, in turn, be estimated on the basis of an unencumbered property at the mid-point (at least) of the market cycle.

IMPACT ON PROJECT ECONOMICS

29. The preceding section suggests some approaches to compensation that would compensate the Walter family more or less to the level of their monetary and emotional loss and offset the stress involved in responding to the ongoing threat and eventual actuality of an easement.

30. The cost to Contact should not be unreasonably high. In commercial terms, the evidence presented by Contact indicated that the impact of significant additional costs may be to delay the project until offset by the price of electricity and the cost of alternative sources. In other words, the sorts of accommodation suggested here contribute to but are unlikely

to alter the project uncertainty already acknowledged by Contact. Indeed, given the limited sum required relative to total project costs and future value added, it should make no material difference. The decision to proceed with the project will, in any case, factor in uncertainties over detailed costs and electricity price movements far exceeding any marginal increase in cost required to compensate the Walter family.

31. If it is decided that Contact should purchase the farm outright the cost to the project will be somewhat less than the price agreed. Any savings in legal costs and access arrangements associated with construction on a property not held by the company should be credited against the purchase price, together with the likely realisation of the subsequent sale of the residual property (or the entire property with adequate arrangements for future access to the transmission line) and the net proceeds of farming or leasing the land in the meantime. The *economic* cost of this arrangement is the difference between purchase and sale price plus holding costs, less revenue from farming operations. The *commercial* cost will be modified by Contact's financial and tax arrangements.
32. A future sale could exceed the purchase price, depending on the state of the market at the time, realising a positive return for Contact shareholders. Equally, it could be significantly lower. This downside risk can be reduced by an appropriate management regime in the meantime. This may, for example, involve investing in the capacity of the farm, aligning the property with adjoining properties held by Contact (for example, rationalising titles, boundaries, and the balance of land of different qualities to enhance the resulting farm unit or units), and managing in a measured way their subsequent release to the market.
33. Reducing the risk associated with purchasing the farm in this manner implies an active approach to the management which may, in turn, entail additional overheads. Ideally, these will be spread over several properties that might be purchased in this manner and offset by enhanced farm income. The decision whether or not to take an active or passive management approach, the latter involving little more than leasing the land for farming by another party, and the risk associated with that decision lie with Contact. However, how Contact might go about addressing the risks and opportunities associated with treatment of the property after purchase should not prejudice, the price that the company is prepared to offer for the Walter farm if it chooses to do so.