Decision No. W031/2007

Law
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IN THE MATTER of the Resource Management Act 1991

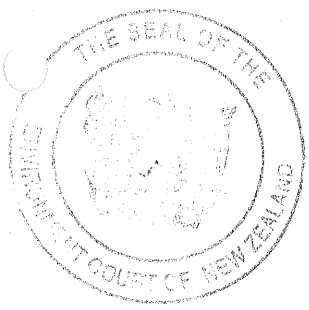
AND

IN THE MATTER of appeals under s120 of the Act

BETWEEN MERIDIAN ENERGY LIMITED
(ENV W 0028/06)
MAKARA GUARDIANS INC
(ENV W 0020/06)
R PAUL and C MOORE
(ENV W 0021/06)
QUARTZ HILL RESERVE
CHARITABLE TRUST
(ENV W 0022/06)
ACTION FOR ENVIRONMENT INC
(ENV W 0030/06)
SOUTHERN ENVIRONMENTAL
ASSOCIATION (WELLINGTON) INC
(ENV W 0031/06)
WEST WELLINGTON
ENVIRONMENTAL PROTECTION
SOCIETY
(ENV W 0029/06)
A J HODGSON-BOOTH-WINDSOR
(ENV W 0019/06)
Appellants

AND THE WELLINGTON CITY COUNCIL

AND THE WELLINGTON REGIONAL
COUNCIL
Respondents



BEFORE THE ENVIRONMENT COURT

Environment Judge S E Kenderdine

Environment Judge C J Thompson

Environment Commissioner W R Howie

Environment Commissioner H A McConachy

Heard at Wellington on 6 – 9, 12, 13, 15,16, 27 - 30 June and 5 - 7 July 2006: Judicial Conference 15 February 2007: Final submissions 24 April 2007

Site visits: Te Apiti (Manawatu) 14 June 2006; Makara 26 June and 14 July 2006

Counsel/Appearances:

H B Rennie QC and A J L Beatson for Meridian Energy Limited

C C M Owen and W M Bangma for Makara Guardians Inc and R Paul and C Moore

T Bennion and D Cassidy for Quartz Hill Reserve Charitable Trust

R Logan for Action for Environment Inc, Southern Environmental Association (Wellington) Inc and West Wellington Environmental Protection Society

A J Hodgson-Booth-Windsor

J G A Winchester for the Energy Efficiency and Conservation Authority – s274 party

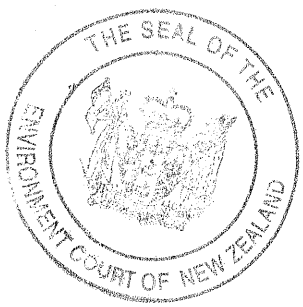
P M R Browne for the New Zealand Wind Energy Association – s274 party

D E J Currie for Greenpeace NZ Inc – s274 party

K E Mosely – s274 party

P M Hughes – s274 party

S F Quinn and J A D Woolley for the Wellington City Council and the Wellington Regional Council



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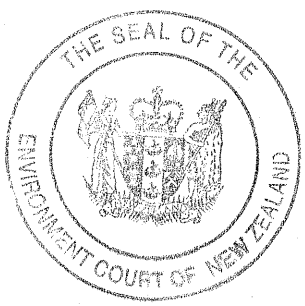


DECISION

- ***Introduction***

[1] In a decision issued on 21 December 2005, Commissioners jointly appointed by the Wellington City Council and the Wellington Regional Council granted Meridian Energy Limited the land use consents and coastal discharge and water permits necessary to enable it to establish and operate a windfarm comprising 70 wind turbine generators at Makara, on the south west coast of Wellington.

- ***The parties and their positions***

[2] Meridian Energy Limited is a State-Owned Enterprise and generates, largely from its hydro resources, about 31% of the country's electricity. Naturally, it supports the Councils' decisions to grant the necessary consents and permits, and appeals only in respect of conditions relating to traffic and to noise. The traffic issues of concern to it have been resolved and, as the hearing evolved, its concern about noise conditions seemed to resolve also.

[3] Makara Guardians Inc is, as the name suggests, a group of Makara residents who have combined to advocate for *...the unique environment and natural resource of Quartz Hill and Makara Riding* ...and specifically to oppose the establishment of a *wind power station* on Quartz Hill or Makara Beach, or in any other location which might be thought to compromise the environment and natural resources of the Riding. The Guardians have modified their initial stance of opposing the windfarm in its entirety, and now oppose 39 of the 70 proposed turbines. These are the turbines they see as generating the highest level of adverse effects on the residents.

[4] Ms Ruth Paul and Mr Chris Moore are residents of Makara. It seems to be common ground that theirs will be the most affected of all the residential properties in and around Makara village. They have lodged their own appeal but are closely aligned, in their opposition to the turbines which will directly affect them, with the Makara Guardians.

[5] The Quartz Hill Reserve Charitable Trust was formed, we understand, at a time when it seemed possible that Quartz Hill might become available for purchase. Among the Trust's objects was the raising of funds to do so. While that opportunity does not currently exist, the

other objects remain, including the protection of flora and fauna, the opposition to commercial power production by wind turbine generators, the promotion of recreational access to the hill, the protection of places of historic interest, and so on. The Trust appeals against the placement of 45 of the proposed 70 turbines, and seeks public access to Opau Bay, and the marking out, for public access, of Snowdon's Road.

[6] Action for Environment Inc, Southern Environmental Association (Wellington) Inc and West Wellington Environmental Protection Society presented a common case and can be conveniently grouped as *the Societies*. They oppose most, but not all, of the turbines largely because of their asserted effects on the ecology and the natural character of the area.

[7] Mrs A J Hodgson-Booth-Windsor opposes consents to at least some of the turbines, on the basis that she believes that they would interfere with sites of value to tangata whenua.

[8] The Energy Efficiency and Conservation Authority (EECA) is a s274 party. It is a body established under the Energy Efficiency and Conservation Act 2000 to promote, as its name suggests, *...energy efficiency, energy conservation, and the use of renewable sources of energy.* It supports the proposal, on the basis that the benefits to be derived are strong and nationally important.

[9] The New Zealand Wind Energy Association (NZWEA) is a s274 party and advocates for the use of the country's wind resource as an energy source. Subject to appropriate conditions, it supports the proposal.

[10] Greenpeace New Zealand Inc is a s274 party to six of the appeals. It supports the grant of consents, with appropriate conditions. Its interests are in climate change and the promotion of the use of renewable sources of energy, and it adopted the evidence of Professor Sims and Ms Heather Staley in those respects.

[11] Mr K E Mosely is a s274 party. His opposition to the proposal was based on his concern that it would not provide certainty of power supply; would not give the necessary quality in terms of voltage, frequency and contents of harmonics, and would impact adversely on the health of people and the environment.

[12] Mr P M Hughes is a s274 party and an advocate for public access, particularly to coastal areas. He opposes any suggestion that the windfarm might intrude on legal roads, marginal strips or the coastal environment, and wishes to see better protection for fauna, birds and bats in particular, in the consent conditions. He has concerns too about the effects of noise and loss of visual amenity as experienced from public places.

[13] The two Councils support the decisions to grant the consents and, in general terms, regard the conditions settled by the Commissioners as adequate and appropriate.

[14] Other persons and bodies had also lodged appeals, or became parties, but withdrew as their concerns were satisfied, or elected to take no part in the hearing. While no single appellant now seeks to have consents for the entire proposal refused, if the turbines they individually seek to have removed are aggregated, there is opposition to the entire proposal.

- ***The proposal***

[15] Meridian acquired the 990ha Makara Farm (sometimes also referred to as Quartz Hill Farm) on the break-up of the former Electricity Corporation of New Zealand in 1999. Terawhiti Station is much larger, and is privately owned. Meridian and the Station's owners have come to terms enabling part of the proposed windfarm to be established on station land. The combined area of the two properties is 5600ha and they have some 26km of rather rugged coastline as their frontage to Cook Strait. From its northern extremity at Ohariu Bay (perhaps better known as Makara Beach) to its southern point at Tongue Point the combined site is about 14km long, and it is nearly 9km wide. The rather distinctive, relatively flat, surfaces of Quartz Hill itself occupy about 220ha, and the balance comprises steep-sided hills and relatively narrow valleys and side gullies. The ridgelines and the Quartz Hill surface lie between approximately 250 and 450m asl.

[16] Meridian calls the proposal *Project West Wind* and has settled upon a windfarm design of 70 turbines. Indicatively only, and as originally presented, they were to be Vestas V90 3MW three-bladed machines having 80m towers, with a rotor diameter of some 90m, giving a maximum height with a rotor blade vertical of about 125m. As one of the results of Meridian's revision of the proposal, to be discussed later, we are now advised that detailed redesign will reduce the overall structure height to 111.2m. The final choice of turbine has been left open to allow advantage to be taken of technology improvements before a firm

commitment must be made, but the smaller dimension parameters are now the maximum sought.

[17] A further result of the revised proposal is a layout comprising of a north-south string of turbines along the easternmost ridgeline of the site (the B, D, E and H roads – 44 turbines) with two strings leading off that ridgeline towards the west (the F and G roads – 10 turbines and the K and N roads – 13 turbines respectively). There are also three lone turbines, J01, M01 and O01. Turbine placement has, Meridian says, been dictated by a number of constraints. As well as topography and the avoidance of conservation areas, the Metservice weather radar on Outlook Hill, the Transpower transmission line, the point to point microwave links across the site, avoiding interference between turbines, and the need to have windspeeds greater than 9m/s have all been factors in turbine placement.

[18] In total, some 36km of access roading will be formed. Within the site it will be formed to a 10m width but after the construction phase will be reduced to 5m. Access into the site will be formed to 5m. The pessimistic assessment for the volume of earthworks required for roading and the turbine platforms combined is 1.7Mm^3, with 1.4Mm^3 being regarded as a more likely figure. Earthworks will be cut to waste, and 66 potential fill disposal sites have been identified, covering a total area of 70.8ha. Not all of these will need to be used. Typical cuts into ridges for roads and turbine platforms are not expected to exceed 6m in height, but there will be cuts of between 6m and 25m for about 15% of the total road length. Cuts greater than 8m to 10m will be benched or formed with batters.

[19] To enable large components such as the turbine towers and blades to be brought onto the site there is to be a 4.6km long access road from the Oteranga Bay berthing site to the *core* site. This will broadly follow the line of an existing farm track, and will require 12 stream crossings by either culverts or fords. The preferred option for the berthing structure at Oteranga Bay is a solid cofferdam structure, 40-45m long and 10-15m wide, with a core filled with beach material and a concrete deck. It will extend to a maximum of 17m seaward of mean low water springs. We pause to note that there is some question about the original and correct spelling and pronunciation of *Oteranga*. Variations exist, but for consistency we shall use Oteranga throughout.

[20] During the construction phase at least one temporary concrete batching plant will be required, located towards the centre of the site. Some 28,000m^3 of concrete will be required for the turbine foundations. Once construction is complete the foundation pads will be re-topsoiled and revegetated.

[21] A substation will be constructed near White Rock Hill. It will not be visible from outside the site. An operations and maintenance building will also be required. Transmission cables, 3km in length, will exit the substation and cross South Makara Road north of the Golf Club, taking the generated electricity to a link with the Wilton-Central Park 110kV transmission line on the eastern side of the Makara Valley. There will be two anemometer masts on the site, each 70-80m high.

- ***Planning status***

[22] It is common ground that the proposed windfarm is a discretionary (unrestricted) activity under the provisions of the operative Wellington City District Plan. It therefore is to be assessed under s104 and Part 2 of the Act, and consents may be granted or refused under s104B.

- ***Section 104***

[23] Section 104 is a key provision in the RMA, requiring a consent authority, and this Court on appeal, to have regard to a number of factors in considering an application for a resource consent. The consideration of them is subject to the provisions of Part 2 of the RMA. Particularly when having regard to the various planning documents, and to issues such as effects on amenity values and the environment, s104 and Part 2 issues tend to overlap and need not always be separately discussed under each head.

- ***Section104(1)(a)***

[24] Section 104(1)(a) requires us to have regard to *...any actual and potential effects on the environment of allowing the activity.* The term *effects* has the extended meaning given to it in s3 of the Act and it includes both positive and adverse effects. Thought is also required as to what is the *environment* for the purposes of the inquiry. It seems to us that there are, effectively, two environments. The first is the locality of and surrounding the site which could be adversely affected, primarily visually or aurally, and perhaps in other ways also. The second is the more abstract concept of the global, or at least regional, environment which might be positively affected by the substitution of renewable energy for fossil fuels in the

generation of electricity. We shall deal first with the feared adverse effects on the immediately surrounding area.

- ***Noise***

[25] Residents nearby the development have expressed concerns about noise from wind turbine operation and from construction activities.

[26] Mr Malcolm Hayes is an expert acoustic consultant from Wales who has advised Meridian Energy on noise levels that would be generated by the turbines. A turbine will begin generating at a wind speed of 2 – 5 m/s and reach maximum generation at a wind speed of 14.5 - 18.0 m/s. When the wind speed reaches 25 m/s the turbine is shut down.

[27] The turbines proposed for this development are to be pitch regulated so that as wind speeds increase the blades can be feathered. The relationship between the blade pitch and the wind speed can be pre-set for each turbine and has been referred to as the mode of operation. There were five modes described (0 – 4), although we understand that a mode could be *tailor-made* for each turbine and its particular location. The different modes of operation generate decreasing operational noise levels so some control of the noise from each turbine can be exercised after it has been commissioned by varying the mode. Noise from pitch regulated turbines is said to be significantly less than that from the earlier stall regulated machines.

[28] Noise emanating from pitch regulated turbine operation arises from the aerodynamic effects of trailing edge turbulence, with a frequency range of 500 – 2000 Hz, and tip turbulence with a frequency exceeding 2000 Hz. Other less important aerodynamic noise sources arise from steady loading (rotational effects), unsteady loading (tower effects causing turbulence) and turbulence in the wind flow. These sources produce low frequency (less than 200 Hz) noise. At frequencies below 20 Hz the noise is termed infrasound and Mr Hayes says that though it is measurable it is well below any recognised perception threshold[1].

[29] Then there is the noise produced by the mechanical plant itself. This noise is normally tonal in nature; that is the sound pressure level has a spike at certain frequencies.

[1] Hayes Rebuttal paragraph 4.2.

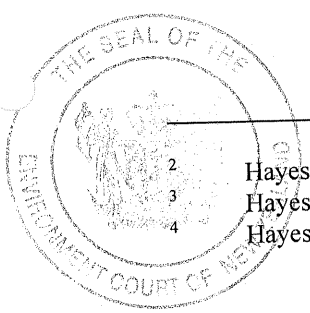
[30] Atmospheric conditions such as wind shear, topographical features and other influences on the generation and passage of sound can introduce modulation to the received sound causing regular variation in the level of sound received. Modulation is said to be present when the peak to trough levels of received sound exceed 6dBA.

[31] Tones and sound modulation are referred to as special audible characteristics and can cause significant annoyance to those subjected to them. When they are present, measured sound levels have 5dBA added to them, as a penalty.

[32] Turbine manufacturers provide guaranteed sound power levels (i.e. noise levels) for their machines. A Vestas V90 3.0 MW has been adopted as the typical choice of turbine. In mode 0 it produces a maximum noise level at hub height of 109.4dB(A). In mode 4 the noise level is 102.8dB(A). Mr Hayes reports that the Vestas V90 turbine has a tonal emission that is 3.87dB above audibility for one 10-sec period, but considers it not sufficient to warrant a penalty restriction on the assessment of the sound[2].

[33] Mr Hayes predicted noise levels from turbine operation at many of the residential locations that would be affected by the development. He adopted the manufacturer's tests on sound levels from 3MW turbines and assumed that there was no tonal noise or amplitude modulation or aerodynamic noise from the turbines. He also assumed that the receptor was downwind, that the ground was acoustically mixed (i.e. moderate absorption of the sound by the ground) and that topographical attenuation was limited to a reduction in received sound of up to 12dbA. If the ground was harder with lower sound absorption then predicted sound levels might be 1 – 2 dB higher[3].

[34] Results from these predictions were given on a map as noise contours emanating from the combined sites of the turbines. Mr Hayes said that *...the predicted noise levels will meet the requirements of NZ6808:1998 at all neighbouring receptors*[4]. He said the predictions were conservative being based on L_{Aeq} and that predicted L_{A95} level, as used in the standard, would be some 2dBA lower.



2 Hayes Rebuttal paragraph3.5.
3 Hayes NOE p 455 lines 43-45.
4 Hayes EIC paragraph 55.

[35] At low wind speeds around the cut-in wind speed, Mr Hayes predicted noise levels at the closest neighbouring receptors to be below 30dB L_{Aeq}. At the rated power wind speed of 15-16m/s he said predicted noise levels of 35-40dB L_{Aeq} may be achieved.

[36] NZS6802:1991 section 4 *Guidelines for protection of communities from noise* provides for an upper limit of acceptability for turbine generated sound outdoors of 40dB L_{A95}. Hence Mr Hayes' conclusion that *"the predicted operational wind turbine noise will meet the requirements of NZS6802:1991 for the protection of health and amenity, irrespective of the existing background noise environment."*[5]

[37] Besides Mr Hayes we received expert evidence on noise effects from Mr Nevil Hegley and Mr Paul Botha for Meridian Energy, Dr Frits van den Berg from the Netherlands and Mr Robert Thorne from Australia for the Makara Guardians and Quartz Hill Reserve Charitable Trust and from Mr Nigel Lloyd for the Wellington City Council.

[38] There was some challenge to the New Zealand standards for acceptable windfarm noise and in particular Dr van den Berg considered that an outdoor limit of 40dBA may be unduly high.

[39] Mr Hayes referred to the WHO guidelines which recommend a limit for the night time sound level within a bedroom of 30dB L_{Aeq} and an external noise limit of 45dB L_{Aeq}. That is 43dB L_{A95} , or 3 higher than the NZ standard. Mr Hegley also provided his opinion that the New Zealand standards were the appropriate ones to apply. The NZS standard was preferred by Mr Hayes.

[40] While Mr Hayes does not expect there to be any special audible characteristics he accepts that a condition imposing a penalty of 5dBA is appropriate. So if special audible characteristics are present, and they would be detected by measurement, then measured noise levels would be increased by the 5dBA penalty. Some debate occurred about the detection of special audible characteristics but the *Objective Method for Assessing the Audibility of Tones in Noise, the Joint Nordic Method Version 2, Delta 1999* was eventually agreed to be the most appropriate assessment method.

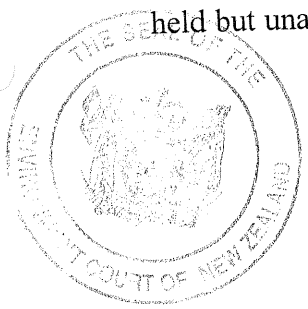
[5] Hayes EIC paragraph 58.

[41] Some residents from Ashurst gave evidence about the effects they experienced from the nearby Te Apiti windfarm on the Ruahine foothills some 2.8km west of the town. Ms Marilyn Craig, an Ashurst resident and a Palmerston North City Councillor, was called by Meridian. She spoke of the added attraction the windfarm provided to the district and, in her view, the absence of significant adverse effects. Other Ashurst residents disagreed with her opinion.

[42] Mr Harvey Jones, a computer programmer with a degree in electrical engineering and a diploma in computer sciences, is a resident of Ashurst. He is a member of the Ashurst Ward Committee and has other community involvement. He gave evidence about his experience of noise and thumping effects from the Te Apiti windfarm when the wind at the farm was from the east and relatively calm conditions prevailed at his residence. He attributed the thumping noise to a special audible characteristic caused by each blade passing the tower. He measured sound levels at his residence in calm conditions of just 20dBA. With an easterly wind at the generators and calm conditions in Ashurst, he measured 26dBA at his residence and, when windy conditions prevailed, 46dBA.

[43] Mr Jones, notwithstanding his complaints about noise, was of the opinion also that the change in landscape was one of the biggest impacts he had noticed. He supported putting adequate conditions on any consents, but remained concerned about the effects of low frequency sound and the difficulty of measuring it.

[44] Mr Hayes, together with Mr Botha, responded to concerns expressed by some residents of Ashurst about noise issues from the Te Apiti and Tararua windfarms. The occasion complained of was caused by the turbines being held in stall mode, a condition not required in this development where the turbines are pitch controlled. Reference was also made to ground borne vibrations being felt by some in Ashurst. Both experts advise that any such vibration is below human detection. We accept these assurances, while recognising some of the residents have beliefs about the operation of those windfarms which are sincerely held but unable to be verified by expert evidence, and not noted by us on our visit to the area.



[45] In respect of construction noise Mr Hayes accepts that methods of construction can be adopted that will result in compliance with NZS 6803:1999 and he considers that would be acceptable. Appropriate conditions are to be included in the consents.

[46] Dr van den Berg, on behalf of the Makara Guardians and the Quartz Hill Reserve Charitable Trust, presented detailed evidence on the effect of wind turbine noise at residences when low background noise levels exist. He offered noise limits that he considered would avoid severe annoyance to the residents and reviewed the proposed consent conditions designed to control noise effects. Dr van den Berg's doctorate arose from his work on the relationship between atmospheric stability and wind turbine noise and performance and on microphone noise. He presently runs Science Shop for Physics at the University of Groningen, a role that acts as a consultancy for non-commercial organisations such as citizens groups and authorities. He has unchallenged expertise in the noise matters before us. In his experience *residents' complaints usually are about hearing the noise in conditions where there is no or little near ground wind*[6].

[47] He noted that at night wind speed in the valley would be only 10% of the hill top wind speed and advised that as no wind or weak wind is the prevalent condition in the valley at night this should be the relevant condition to assess the background sound level. Best-fit regression curves of measured noise levels at night would, he believes, overestimate the actual background sound levels. From a Swedish study he concludes that modulation of the wind turbine sound at night will be perceptible and that a sound limit of 35dBA L_{eq} is needed to avoid severe annoyance. This is an outdoor limit of 33dBA L_{95}.

[48] Dr van den Berg presented detailed criticisms of the proposed consent conditions with suggestions for improvement. His philosophy, to maintain support from society for wind energy, is to be very strict to begin with and relax imposed conditions when there appears to be room for that.

[49] On the question of the presence of special audible characteristics he said there was no accepted method to predict them particularly when considering an entire windfarm. He thought thumping was possible depending on atmospheric conditions and interaction between turbines.

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6 van den Berg Rebuttal paragraph 18.

[50] Mr Thorne is a specialist acoustical consultant based in Brisbane and he presented evidence on behalf of the Makara Guardians principally about the nature and effects of special audible characteristics that can arise from wind turbines. Based on information from the turbine manufacturer he concluded that there was a high probability of tonal audibility from the turbines to be installed and that would cause significant adverse effects for the residents.

[51] This conflicts with Mr Hayes' opinion that tonal effects would not be an issue, but Mr Hayes agreed with a 5dBA penalty, nevertheless.

[52] Mr Thorne described the nature of the noise as audible tones or low-pitched thumping superimposed on the broadband sound of the turbine itself. He produced a set of noise contours around the windfarm that included the 5dB penalty for special audible characteristics and said about 115 out of 164 residences would be affected by audible turbine noise at some stage throughout the year.

[53] Mr Thorne's view was that more attention to the control of special audible characteristics was required. As recommended by him, the final versions of the conditions of consent require, for tonal assessment, the use of the *Objective Method for Assessing the Audibility of Tones in Noise, the Joint Nordic Method Version 2, Delta 1999.*

[54] Mr Lloyd is an experienced acoustic consultant who advised the Wellington City Council on these consent applications and who formulated the set of noise conditions on the consent. He is of the opinion that the New Zealand Standard 6808:1998 Acoustics-*The assessment and measurement of sound from wind turbine generators* is the appropriate standard to use except when there is a poor correlation between the sound that the windfarm makes and the ambient sound levels at the dwellings. As we have seen, night time conditions at nearby dwellings sometimes fall into this exception.

Discussion

[55] The proposed conditions of consent include a noise management plan that is designed to deal with the sensitive night time circumstances. When unacceptable noise levels are experienced derating or stopping of certain turbines would be required to avoid those effects.

[56] Mr Lloyd also included in the proposed conditions the penalty of 5dBA on measured sound levels if special audible characteristics were present so essentially he is in agreement with Mr Hayes on this issue.

[57] During the process from initial drafting of the noise control conditions through to presenting his evidence to this Court Mr Lloyd caucused with his colleagues and accepted various modifications to the conditions. This was a professional and helpful way to proceed and the Court commends him for those efforts. It did not end with the appeal hearing either. Once the overseas experts were in New Zealand for the hearing, caucusing continued with the outcome that a modified set of conditions agreed to by the parties was able to be presented to the Court at the conclusion of the hearing.

[58] Mr Thorne and Dr van den Berg, while agreeing that the conditions will protect residents from severe annoyance and sleep disturbance, retain the reservation that annoyance and loss of amenity will still occur. To avoid these effects would require a limit of 30dBA L_{95} in conditions of low wind speed at the dwellings with modulation restricted to 3dB.

[59] Construction noise is to be controlled by the New Zealand standard and noise from concrete manufacture is specifically controlled. A construction noise management plan to ensure compliance is to be prepared. Limits on non-turbine related operational noise within the notional boundary of a dwelling are also specified. Noise from turbine operation is the subject of an extensive set of requirements. Detailed requirements are specified for the determination of background sound levels and for compliance testing once the turbines are operational. Permanent sound level monitoring is required at 4-5 representative locations.

[60] Noise from turbine operation at the notional boundary of a dwelling is to be limited to 5dB above the background level or a maximum of 40dBA L_{95}, whichever is the higher. If the background noise level is low (i.e.; less than 25dBA L_{95} with a wind speed of less than 1.5m/s) the noise from the windfarm is limited to 35dBA L_{95} or 30dBA L_{95} if special audible characteristics are present.

[61] Testing for special audible characteristics is to use the one third octave band comparisons or the narrow band analysis as for condition 34 but it also provides for the use of the Joint Nordic method when a finer test is required.

[62] Reporting results, preparing a noise management plan to achieve compliance and community liaison programmes are provided for in the conditions. A review process is also included.

[63] In commenting on the agreed conditions Dr van den Berg had this to say:

But you see there is hub height wind speeds of 10-11metres per second. ...These wind speeds will occur frequently and at the same time almost no wind speed, especially in evening and night time, will also occur frequently in the valley near the dwellings. So these predicted levels will occur frequently where the limit of 35dBA should apply.

And as you can see there's a considerable number of dwellings where that level of 35dBA is exceeded and there are some dwellings, especially near Opau Road, South Makara Road and the one of Mrs Paul, where predicted levels are 38dBA or higher. So in my opinion it must be very difficult to reduce these levels to below 35dBA and leaving let's say all the turbines on the ridge, on the first ridge from the Makara Valley in the plan. But may I add, it is not impossible of course, if in conditions where it does not apply, you stop the turbine.[7]

[64] Mr Rennie clarified this by asking: *And I understood you to say that compliance with the 35dB level, in your assessment might at times be difficult, although it could be achieved by stopping a turbine or a number of turbines at that time?* Dr van den Berg agreed with that[8].

Findings

[65] So it seems that under the noise conditions agreed to by the parties, some annoyance and loss of amenity due to turbine noise will be experienced by some in the community. But it will not be severe or disturb sleep. Meridian may though suffer some constraints on generation that will be significant at times.

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7 van den Berg NOE p 1478.

8 Ibid NOE p 1486.

[66] The monitoring, measurement and reporting of the sound conditions created by the windfarm is a demanding and technical undertaking. It behoves Meridian and the Council to be diligent in following the requirements of the consent and to be open, transparent and helpful to the residents of Makara in interpreting, reporting and complying with the consent requirements, even when the consequences might mean curtailing generation or incurring costs. In calm conditions in the valley with sufficient wind at the turbine level to generate, and if there are special audible characteristics present, then the noise level at any dwelling is not to exceed 30dBA L_{95}. That is a very low level of noise and judging from the noise contour levels provided to this Court will result in many of the turbines neighbouring dwellings being temporarily stopped. That is a consequence of condition 17 and has been agreed to by Meridian.

- ***The effects on the geomorphology and geology of Quartz Hill***

Introduction

[67] Quartz Hill was purchased from Telecom in 1995 with the intention of building a windfarm on what had originally been the Quartz Hill Shortwave Receiving Station. The hill derived its name from an unusual cap of quartzite, a distinctive geomorphological feature but not one that is unique in the Wellington region[9]. It consists of an upland surface of low relief clearly separable from the surrounding landscape by steepened valley walls.

[68] Geologically, Quartz Hill consists of bedrock of the Toulesse Composite Terrane which includes greywacke sandstone, argillite, siltstone and mudstone combined with various minor rock types. While much shattered and sheared by tectonic forces, they are relatively hard rocks capable of supporting the surrounding steep slopes. Deposition of the Toulesse suite of rocks ended in the New Zealand region 100 million years ago.

[69] Quartz Hill stands out in the Makara landscape because it appears to bear little relationship to the forces that have shaped the present rugged landscape elsewhere on the site. It belongs to a much flatter group of landforms, comprising gently curved ridge crests and rolling tablelands.

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9 *Geomorphology is the study of landforms at the Earth's surface, the processes that have shaped them and the associations of many landforms together that comprise a landscape* – that is – how mountains, hills and valleys form. Mabin EIC para 13. Crozier EIC NOE 850. Geology is the study of rock, rock forming processes and products and the geological history of events.

The project impact on Quartz Hill

[70] The geomorphological issues before the Court relate to the main Quartz Hill tableland, an area that Meridian proposes to use for 13 of the 70 wind turbines. Dr M C G Mabin, a Senior Environmental Scientist at URS New Zealand Limited with particular expertise in the geomorphology of landscapes, identifies the main Quartz Hill tableland surface covers about 160ha around the trig station and radio masts. It is up to 1.4km across and 1.6km long, and the edge of the surface is marked by a clear break in slope at about 260m asl. There is about 40m of surface relief on the tableland, due to a system of ten shallow stream valleys that drain away from the high point.

[71] For the project, 35 features will be constructed on the tableland as follows:

(i) Access tracks to the turbine sites (13);

(ii) Turbine platform foundations (13)[10];

(iii) Spoil disposal areas (9).

[72] It is anticipated that these features will cover 11% of the tableland. The turbines will permanently cover .2% of the tableland area and the new access tracks 5.3ha. Even within this area the effects on the morphology of this land surface is very small. The turbine foundation pads will be constructed beneath the ground.

[73] Dr Mabin's evidence indicates the largest project effect on Quartz Hill will be from the spoil disposal sites. From information presented in the Site Environmental Management Plan (Supplementary Plan 9) included in Mr Roy O'Callaghan's evidence, as consultant engineer to Meridian in erosion and sediment control, up to 400,000m^3 of spoil may need to be disposed of, to an average depth of 2.9m, which is a small change in surface elevation in comparison to the tens of metres of natural surface relief on K surfaces which is what Quartz Hill is identified as. The spoil is to contoured and revegetated and the original surface profile will be retained as far as is possible. Thus although the land surface will be covered, the original surface form will be retained. While approximately 12 of the proposed turbines are sited on or close to the quartzite body at Quartz Hill, the extent of this is limited to the western third of the hill.

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[10] The number of turbines given by Dr Mabin differs from that given in the AEE because Dr Mabin's figures relate as we understand it to the most sensitive area of Quartz Hill and not its outer ridges.

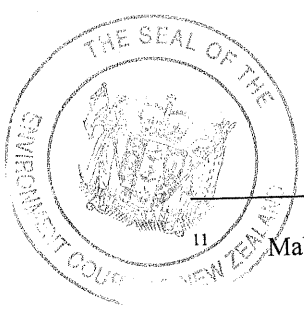
The appellant's case

[74] The Quartz Hill Reserve Charitable Trust has as one of its purposes the protection of Quartz Hill from commercial power production. The Trust provided one witness, Associate Professor J McConchie with the School of Earth Sciences at Victoria University, Wellington, while other appellants subpoenaed Professor M Crozier, Professor of Geomorphology also at Victoria University.

[75] It is the appellant's case that the tableland surface of Quartz Hill was first interpreted as a "peneplain remnant" by the New Zealand geographer Cotton in the early 20th Century, a disciple of a 19th century pioneer geomorphologist W M Davis. It is stated also that Cotton identified that Quartz Hill was part of a group of ancient Wellington landforms that he named the "K-Surface" (either referring to a key surface for interpreting the uplift and deformation of the Wellington landscape or the Mt Kaukau surface of the key surface)[11]. These are relict features not formed under present earth surface process regimes. The significance of these relict features is arguable as it is not known when they were formed, by what processes, how much they have been affected by subsequent erosion, and where in the landscape they have been uplifted from. There are however assertions from the appellants that there is now consensus and agreement that Quartz Hill is a significant geomorphic feature worthy of protection.

[76] Associate Professor McConchie teaches undergraduate courses into various aspects of geomorphology and hydrology. He claims that Quartz Hill:

- is the largest, contiguous, relatively uneroded, peneplain remnant in the Wellington region;
- its distinctive character is enhanced by it being undeveloped, largely unmodified and clearly visible from a distance;
- has been recognised because of its geomorphic significance in the international literature for almost 100 years and long recognised by scientists and students;
- is the subject of extensive study by first year geology students because of its geomorphic significance when interpreting the landscape evolution of Wellington.



[11] Mabin NOE 602, paras 16–32.

[77] Associate Professor McConchie thus considers that the proposal will have a devastating effect on the internationally scientific heritage and education value of Quartz Hill although he does not appear to go quite so far in his oral evidence.

[78] Professor Crozier for his part belonged to a group who undertook an inventory of geological features up to 1990 in which Quartz Hill was regarded as of regional significance and an "excellent example" of scientific and educational value in establishing a cycle of landform developments which represented a number of stages youth, early maturity, maturity and old age. It was essentially an evolutionary idea but regrettably the ones that might have achieved peneplain status have now subsequently been disrupted by uplift and erosion. Professor Crozier considers there is a weight of evidence which suggests Quartz Hill is a *peneplain remnant* – i.e. the remnant of an original mountain range which has worn down completely to a peneplain – to an almost flat surface at base level very close to sea level. To qualify as a peneplain remnant however, there has to be evidence that it did exist at one time at sea level – a surface of low relief. Professor Crozier observes *Unfortunately there is not much of that – probably not any of it to my knowledge, that it was at sea level in Wellington.* But he regards the major discussion around the site in terms of science and education as important because it is an example of geological debate of the 19th century and the history and philosophy of geomorphology. And he does not consider that the absence of scientists actually drilling and dating the feature detracts from its importance in those two aspects. He considers the adverse effects from the project will be low to moderate in terms of the natural character of the landform.

Meridian's case

[79] Dr J G Begg, a practising geologist with GNS Science and Dr Mabin, gave evidence on these issues for Meridian.

[80] Dr Mabin explains the *peneplain concept* had been advanced in the late 1880s by W M Davis, to refer to an almost featureless plain of regional extent showing little sympathy with structure. Davis attributed the formation of peneplains to what he termed 'normal erosion' processes, by which he meant fluvial (or river) erosion processes that had worn a landscape down to a low relief surface close to base level (i.e. close to, but above sea level), over a very long span of geological time.

[81] Dr Mabin notes the idea was controversial from the start, and that Davis (1902) had to defend it against charges that peneplains were "unreal, improbable, and unnecessary". The problem was that while the peneplain concept was a useful abstract idea, it was difficult to apply in the field, not least because no such feature forming under present environmental conditions could be identified. Today the term peneplain is only referred to in the context of the historical development of the science of geomorphology. Dr Mabin cites for example in modern earth science dictionaries (eg Thomas and Goudie 2000) where the historical context of peneplains is discussed, that the term 'erosion surface' is used for these landforms as this does not carry the genetic implications of 'peneplain'. He gives as an illustration of what was originally termed the Otago Peneplain, which is preserved in Central and North Otago, where remnants of it cover many thousands of square kilometres on the tops of the Pisa Range, Old Man Range, Rock and Pillar Range, and many other mountain blocks. It is believed to have been formed between 100 – 20 million years ago (Bishop 1994). The surface is now referred to as the Te Waipounamu Erosion Surface (Le Mesurier and Landis 1996) and the term peneplain has been dropped.

[82] Dr Begg describes the geology of the area. His particular expertise spans geological mapping, stratigraphy seismic hazard assessment, geology and palaeontology. He identifies that some of the features described in the area, the Quartz Hill K-Surface remnant, the Shepherd's Gully Fault, the Tongue Point marine benches and the Quartz Hill quartzite body, have geological value but none are of international significance. Only the Tongue Point marine benches are of geological significance. None are considered vulnerable to development on the scale of the West Wind project.

[83] A geological concern was raised regarding the erodability of rocks in the project area. It appears the reason why the ancient Quartz Hill K-Surface remnant is preserved and why slopes around the hill are steep is because the rocks are strong and stable, even when jointed and sheared. For example, on the western edge of Quartz Hill, natural rock faces are stable at slopes exceeding 45°. From a geotechnical point of view, the qualities of Torlesse "greywacke" area are well known from a great number of sites in the Wellington region. Although commonly jointed and/or sheared, their strength is only compromised when deeply weathered or heavily sheared. But in the roading to Oteranga Bay for example, it may be seen that the steep and high cuts are rarely degraded and the commonest cause of failure in the near-vertical faces is wedge failure and weathered soil slips which are never large.

[84] Dr Begg describes the quartzite body at Quartz Hill as an unusual (although not unique) rock type in the Wellington region. Despite its early recognition, little research has been completed on this particular feature and its origin is poorly understood. Also in the Kenny & Hayward publication 100 geological and landform features are ranked according to vulnerability. The Tongue Point marine benches, "Quartz Hill uplifted peneplain", and Shepherds Gully Fault were all rated "unlikely to be damaged by humans" amongst 67 such Wellington sites.

[85] Overall, it is Meridian's case that the project will not destroy any landforms and Quartz Hill will essentially retain its original surface form over approximately 89% of the tableland area. Thus, the existing geomorphic integrity of Quartz Hill and its potential scientific significance will not be compromised. Dr Begg considers Quartz Hill is not vulnerable to development on the scale of the West Wind project. Dr Mabin also considers that the combined effect of the scattered small features (namely the turbines and access tracks and fill areas) on the geomorphic environment will be less than minor. Although some of the land surface will be covered, the original surface form will be retained and the effect on these sites will be very minor.

[86] Indeed, the construction activities for Project West Wind will provide an opportunity for earth science research on Quartz Hill and other "K-Surface" landforms. Aspects of the longstanding scientific uncertainty regarding the age, origin and history of the "K-Surface" could be addressed from examination of subsurface materials revealed during construction activities for the project. Excavations will provide an opportunity to gather fresh samples for analysis and inspect rock relationships. The project will have no appreciable impact on the elevation of the surface.

Discussion

[87] Drs Kenny and Hayward (1993) published an inventory of geological sites and landforms in the Manawatu and Wellington regions. Each feature listed was ranked as "internationally", "nationally" or "regionally" important. While ranking is subjective, Professor Crozier notes the inventory is so far the only attempt to identify and rank the importance of geological and geomorphic features in these locations. In the inventory, the Tongue Point uplifted marine benches is ranked amongst 25 sites of national importance, and

the Shepherds Gully Fault sites and the Quartz Hill uplifted peneplain ranked "of regional importance" amongst 71 of the 100 identified Wellington sites. The Quartz Hill quartzite body is not listed. Quartz Hill was also rated an A1 category rating for its scientific and educational value but Professor Crozier notes this was lost in the transferral of the site's significance from a national to a regional rating. So we are left with the public ranking of Quartz Hill as a geological site – an uplifted peneplain ranked of regional significance. But the Meridian witnesses have demonstrated that the term peneplain is only referred to now in the historical development of the science of geomorphology.

[88] And as noted, the K surface was a termed coined by Cotton when he was reviewing his understanding of the Wellington landscape – it referred to the rounded ridge crest and rolling tableland surfaces in the Wellington landscape. According to Dr Mabin rolling tablelands are less common but more distinctive than the rounded ridge crests. The Quartz Hill tableland is also claimed to be the most extensive remnant of the K surface in the region by Eyles and McConchie (1992) but as Dr Mabin points out with the assistance of GNS Science geological mapping this is not true – Grenada and Newlands have greater areas of surface relief and so do K surface features north of Upper Hutt. In his opinion therefore the key significance of the K surface is to a large extent a potential significance given the present state of knowledge with no published detailed study of Quartz Hill or any other K surface feature. While there are some descriptions of landforms little is known of material below the surface. The questions therefore to be asked are:

- where in the landscape the K surface was formed – was it above or below the sea level;
- how much of the K surface has been lost;
- which K surface level should be used as the starting point for measuring uplift;
- what is the age of these land surfaces?

[89] The geological characteristics of the K-Surface remnant at Quartz Hill that are of potential scientific value are therefore its elevation and its age. The elevation is not an issue but age is. Dr Begg identifies the features that are conceivably useful in establishing the age of the Quartz Hill surface are:

[a] the sequence of coverbeds (soils) overlying the bedrock;

[b] the weatherboard bedrock; and

[c] minerals within the bedrock itself.

[90] Assessing effects on the geomorphic environment requires two questions to be asked – does an activity significantly alter or destroy a landform and are landforming process regimes significantly changed? On the Meridian evidence the answer to both appears to be "no". According to Dr Begg, the two most significant potential risks identified are to the relationships of the quartzite to surrounding rocks, and damage to the soil sequences that may help establish the age of the K-Surface remnant if soil stripping and filling is unrestricted – which it is not. For all practical purposes, in Dr Begg's view, these risks may be regarded as theoretical, rather than likely to occur. The risk of project work to the quartzite can be mitigated by reserving part of the landscape underlain by the quartzite body from disturbance. The *Construction Effects and Management Report* (Appendix B of AEE report, OPUS International Consultants 2005) demonstrates that such areas are available. And further, the project will not adversely affect future study of bedrock minerals, or the weathered rock below the bedrock surface.

[91] Nevertheless, according to Dr Begg, there is no sound geological rationale for considering special exclusive reservation of Quartz Hill ahead of other sites in the region of equal or greater significance or vulnerability.

[92] And while Professor Crozier remains concerned that the development would cause Quartz Hill to lose its natural character, he is very pleased that the significance of the landform is being recognised through Meridian's suggestion of reserves in order to retain areas for further study. Meanwhile consultation with geologists should continue through the construction phase, ensuring that unexpected discoveries and short-lived research opportunities can both be dealt with effectively.

[93] It seems too that a large number of remnant K-Surface areas have been located in the west Wellington area, and although the Quartz Hill surface is one of the larger of these, and has some significance in being cited as a reference example in its original definition, it is by no means unique. The other K-Surface remnants in the Wellington region are thus likely to afford similar opportunities for research as Quartz Hill. At Maymorn, beyond Upper Hutt, there is a larger surface, contiguous and relatively uneroded – which has not been investigated in any detail. In fact the K-Surface extends towards the Tararuas and resumes again on the Palmerston North end of the Tararuas. Even the Te Apiti windfarm is located on the

equivalent of K-Surface. Dr Begg maintains the largest contiguous remnant site is at Horokiwi. Mana Island is another remnant, as is Kapiti Island. Dr Begg was recalled to be cross-examined on a paper he gave in June 1998 (Exhibit 24) setting out the significance of Quartz Hill and which at that time largely coincided with Professor McConchie's views. Dr Begg identified the document reflected his knowledge and opinion at the time but since then he has expanded his knowledge and consequently changed his views.

[94] Drs Mabin and Begg were very critical of a number of Associate Professor McConchie's assertions, many of which were unsubstantiated but were relied on by the Quartz Hill proponents. Among a number of other issues, Dr Mabin established to our satisfaction that Quartz Hill is not awarded international merit status in a number of classic geomorphic texts. We understand Cotton did refer to Quartz Hill in several scientific papers in New Zealand that he authored but they were not solely about Quartz Hill. He also published several geomorphology textbooks which were internationally very well known. Both of these books included chapters on peneplains but neither made reference to Quartz Hill. Thus, Quartz Hill cannot be seen to have any international scientific profile as it is not well known, nor was its significance widely promoted by the scientist who first described it. In any event, Dr Mabin is clear that any geomorphological values will not be compromised by the activity as the windfarm will not destroy any landforms, nor will it obscure the surfaces in a significant manner.

[95] Further Professor McConchie himself accepted that Quartz Hill is not the largest peneplain remnant in the Wellington region. Finally, the question may legitimately be asked, if Quartz Hill is so important to the scientific and educational community, why has it not been researched when it has been known for around 100 years? Dr Mabin's answer is that no one has considered the landform significant enough to carry out research.

[96] There is another argument which indicates that Quartz Hill may not fit the criteria for identification as a peneplain. Dr Begg maintains the available data shows there is more than one landscape level at Quartz Hill and these features are likely to have been formed by marine erosion processes. His view contrasts with that of Professor Crozier and if correct Quartz Hill would not fit the fluvial erosion criteria for a peneplain. Dr Begg points out that the latest work on the Waipounamu Erosion Surface has demonstrated in many places it has *a marine origin.*

[97] It has been noted that while it is significant for interpreting the present tectonic regime, it should be used with caution as a reference level for determining the amount of uplift that has occurred[12].

Findings

[98] We conclude therefore that in terms of educational and scientific value:

- in modern geomorphological usage, the Quartz Hill tableland is better described as an erosion surface, as the term *peneplain* is now only used in an historical context when describing the development of the science of geomorphology;
- first year university students will still be able to access and view Quartz Hill as because Meridian has agreed to continued access for that purpose;
- reserve areas for research will be made available by Meridian for scientists to determine the site's scientific origins, a move which is identified by Professor Crozier as a direction which recognises the significance of the landform; this should be a condition of consent;
- the K surface remnant is by no means unique – other K Surface remnants in the Wellington region (and elsewhere) are likely to afford similar opportunities for research as Quartz Hill;
- there is no geological rationale for considering special exclusive reservation of this site ahead of others of equal or greater significance or vulnerability;
- other permitted activities for the site such as a pine forest would have similar implications for the natural character of Quartz Hill.

[99] In terms of construction, we conclude:

- there will be a medium – low natural character impact on Quartz Hill;
- the features cited of interest will be retained – areas of scientific interest are to be set aside from the project footprint;
- the scale of the impact is small in terms of area – the visibility of geomorphology is not comprised;

[12] *Resource Consent Application for West Wind Volume* 2 Tab 7. URS Report. Project West Wind. Assessment of Effects on the Geomorphic Environment, URS, p 5-1.

- the landform will be affected by the spoil disposal sites but they will be sited well away from the ravines;
- reserving selected areas on the tableland at Quartz Hill against soil disturbance, particularly cut and fill, will mitigate against any risk that the project will have on soil sequence research; these areas should be selected by the experts involved in this hearing;
- an opportunity for geological inspections of excavations while open will maximise research benefits for Victoria University's School of Earth Sciences;
- in the deconstruction phase we are satisfied the site will be restored as far as possible.

- ***Visual Amenity and Rural Character***

[100] Residential dwellings impacted on by the windfarm lie in South Makara, the Makara Valley and Takarau Gorge, beyond which the two large farmed land holdings described as a hinterland stretch through a continuum of rural, natural and wild landscape. The Makara Valley carved by the Makara River follows the dominant flow of the fault land in a NE-SW orientation with riparian side valley systems etched into the landscape adding a secondary NW-SE cross-pattern. This easternmost ridgeline and plateau rises in general elevation between 200m - 430 m above the residences and carries the H, D and B stringlines and the E cluster so we confine this discussion to these turbine series.

The Makara Community

[101] According to the evidence the community has some 400 permanent residents with a relative number of houses. There is also a school, a playcentre, two golf courses, a community hall, two churches, and a variety of recreational facilities. The housing and community amenities are most clearly notated on Attachment 19 to the evidence of Ms Diane Lucas, the landscape consultant to the Makara Guardians and the Quartz Hill Trust, which shows these, and turbine distance zones.

Rural character

[102] Turbines have a lifetime of twenty years. Maintained and replaced the development can continue indefinitely as long as the economics permit. Even allowing for changes of ownership the rural character of an area reflects a long-term physical and cultural investment by its occupants. By living in the country owners have made lifestyle choices which clearly have a different amenity base from that of an urban environment. The environs themselves

are regarded as supplying the most significant amenity. Although land holdings may vary in size there is a merging of rural views across landscapes and therefore the residents have a community and common interest in retaining those shared vistas.

[103] Ms Lucas drew our attention to the research into people's attachment to places and the phenomenological approach to evaluating the human experience of landscape. She stated that:

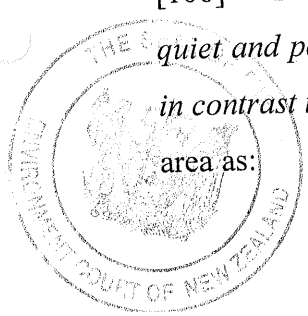
> *The positive emotions that tie people to a physical environment, topophilia, are fostered by attachment, familiarity and aesthetic appreciation. People feeling closely attached and 'at home' are important for community well being.*

Research showed that *negativity most commonly arises when places are changed in some way*. In assessing the change bought about by the presence of turbines she believed it was important to establish what were the shared community values and the potential risk posed to them.

[104] Local experiential values were before the Court in a number of documents as well as in residents' personal statements of evidence. Mr Peter Rough, Meridian's landscape consultant, also drew our attention to the relevant local character analysis in the appendix of the Wellington District Plan's Rural Guidelines where these values were listed.

[105] We have also examined the Proposed Plan Changes 32 and 33 and the Makara Community Plan, documents of recent origin, but all with limited legal status. They summarise community aspirations and the rural environment. They reflect and support the amenity evidence of those residents who came before us, which reassures us that the consistent themes that are stated to be valued are those that have a widespread community regard and acceptance. While there are individual differences, common themes of rural character and amenity emerged from the evidence and council documents. These documents also discuss the importance of using the renewable wind energy resource recognising that such developments will have visual and amenity effects on the rural character.

[106] Those existing qualities of the area most commonly quoted were summarised as: *quiet and peaceful atmosphere, open space, lack of people and structures, sense of isolation in contrast to the city, unspoilt hills and ridgelines.* Ms Lucas describes the rural nature of the area as:



The mix of regenerating native cover, plantation and fire lots, orchards and some pastures ensure the character is of a real rural area ...where many of the rural properties demonstrate the rural dream of owning a home in the country, of growing and cutting firewood, of growing food, of nurturing native bush of having and riding horses .....of living in a community but having privacy as well as space and a rural outlook...

Visual and Aesthetic effects

[107] We agree with counsel for the Guardians that it may be difficult or even impossible for residents and submitters to accurately gauge the full level of visual effects of the turbines. Static viewpoints can never represent the full picture and we are aware of the flattening which may occur on smaller scale imagery. Nevertheless the wide ranging visual evidence, including video presentations, despite their limitations, have been helpful. Taken together with the oral and written evidence a multi-layered picture can be built of the amenities valued by the community and their perception of what may be the outcome for them should the windfarm farm go ahead in its entirety.

[108] In their analysis of the turbine effects on amenity the experts took cognisance of the following factors. While nomenclature differed experts ranked their assessments in terms of severity:

The number of turbines visible

[109] Because the (now) twenty-six H series turbines sit on top of the eastern ridgeline residents with sweeping rural views will see turbines visible as a singular row. However the elevated plateau of Quartz Hill provides an opportunity to place a pocket of turbines. Seventeen turbines of the D and E series form this cluster. Mr Rough was of the view that the greatest visual impact of turbines was when they were overlapping.

How much of each turbine is visible

[110] Mr John Hudson, the Councils' landscape consultant, said that while normally exposure to the full turbine was considered most adverse there were occasions where adverse effects were considered greater if only part of the turbine was visible. It became really a personal preference of the viewer. Ms Paul, a resident, described that for her it was disturbing to see a rotor blade without the structural support.

The distances to the turbines

[111] While Mr Anstey did not assess local dwellings, he provided a table developed by Mr Boyden Evans of Boffa Miskell for another windfarm hearing, designed to show residential visual impacts relating to viewing distance. Like any measurement which has a degree of subjectivity, quantifying elements carry an element of risk. However as this factor does not stand alone, but is only one of a number of components, we accept for this case that they provide some guidance. In summary the table developed by Mr Boyden Evans is:

Distance	Visual impact
< 1km	Tend to Dominate – potential for visual effects substantial
1-3km	Highly prominent – potential for visual effects substantial
3-6km	Still prominent – potential for visual effects is moderate
Dominant: The feature has a defining influence on the view and is a focus of the view Prominent: The feature is clearly visible in the view and forms an important but not defining element. Note: this form of analysis was applied to a different height turbine in a different place.	

This accords with a visual and visibility effects assessment done by Mr A Rackham, a landscape architect also from Boffa Miskell, for the Meridian Te Apiti wind farm site.

[112] A further Scottish study known as the Sinclair-Thomas matrix on turbines up to 100m tall (to blade tips) (sponsored by EECA, WCC, Meridian Energy, Trust Power, Wind Flow Technology, and New Zealand Wind Energy Association[13] and others) cited in the publication 'Winds up- Planning the Future Now' suggests turbines are dominant up to 4 km and the magnitude of visual impact is high. Mr Ralph Jorgensen, a surveyor and resident, notes that the Meridian turbines will be 25% times larger than a 100m turbine and accordingly will impose even greater visual dominance.

[113] Ms Lucas provided a map, Attachment 19 – *Zones of Influence*, which defined turbine distances in <1km, 1-2 km and 2-3km concentric zones. Eight residences were closer than one kilometre with the majority within the 1-2 kilometre range. When discussing the

[13] None of Meridian's supporters cited the Sinclair-Thomas matrix despite having sponsored it.

final layout Mr Rough stated: *The typical closest distance from visible turbines to dwellings in Makara Valley is 1.1 km and in the southern end of Takarau Gorge the closest distance from a visible turbine is 1.61 km.*

[114] Overseas examples were provided to the court showing windfarms in close proximity to houses. More relevantly was the New Zealand example were Ashhurst where distances from residents were 2.4 and 6km respectively.

Whether there is a landscape backdrop or a skyline behind the turbines

[115] Because the visual impact on rural character and residential amenity typically relate to visibility from a house or property we had a range of visual material showing these views. It is apparent, at least in these visuals, that many turbines were seen above the skyline. Mr Hudson was of the opinion that effects of turbines against a sky were more adverse because of the contrast. Visual prominence was said to vary with light and atmospheric conditions for example when directly lit by sunlight, back lit or when the contrast with the sky is greatest. Ms Lucas stated that ridgelines in silhouette, and the turbines backlit would be the situation for many Makara Valley households.

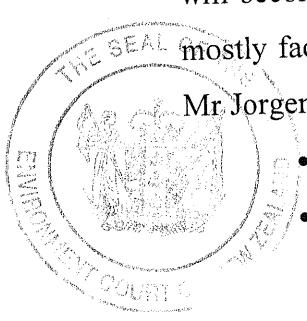
The complexity of the landform and vegetation within the view

[116] Elevations show the landform varies between the gentle slopes of the valley floor with gentle to steep rolling hills which are dissected by folds and slopes at other angles. The vegetation was described and confirmed on a site visit as dominated by rural characteristics including grazed pastures, shelter belts, regenerating bush and forestry. Occasional houses and rural buildings were not dominant. Sometimes one or more of these elements made up the view but they were cohesive in terms of a rural landscape. Mr Hudson believed that a complex landscape provided absorption capacity and the turbines became just another element; therefore generating less adverse visual effects.

Whether the turbine is elevated above the viewer

[117] Mr Rough observed that where the height contrasts with the surrounding features it will become prominent on the horizon particularly when viewed on a skyline. Rotors will be mostly facing the prevailing northwest wind and are more prominent when viewed head on. Mr Jorgensen, provided examples of these possible elevations.

- *210m opposite northern most residents in Makara Road plus turbine 335m*
- *250m opposite the former 'Tunnel of Trees' plus turbine 375m*



- *180m-330m opposite the Makara Model School plus turbine 305-455m*
- *260m-330m opposite the Karori Golf Club plus turbine 385m-455m, and*
- *230m opposite the southern most residence in the South Makara Road plus turbine 355m*[14].

Mr Hudson agreed that there is a greater visual effect if the turbines are higher than the viewer, but that there is a point at which further elevation reduces the effect because the turbine moves out of the main angle of view.

The expanse of the vista

[118] Mr Hudson believed that a wide angle of view allows adverse visual effects to be reduced as more features can be seen in the view. Conversely a narrow angle of view can focus attention. With dwellings located on the valley floor or side slopes, ridgelines were seen as dominant features which defined the viewing vista. The majority of owners had wide angles of views unless constrained by a land fold or vegetation.

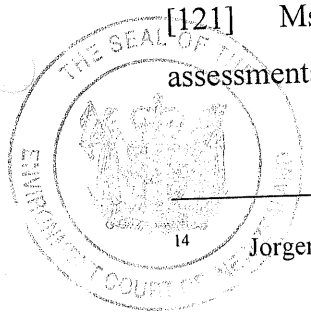
Screening

[119] Mr Rough notes that some turbines at a distance which would normally be regarded as having a significant visual effect were blocked from view by trees, although he acknowledged that concerns were raised by residents in the event of the vegetation being removed. The subsequent exposure would be in sharp contrast to the mitigation presently supplied. Mr Hudson believed local screening by way of trees or landscape feature could be of significant benefit in providing immediate separation of turbines from activities near the house.

House design

[120] The orientation of the house and whether the main views were towards or away from the turbines featured in individual household assessments. The layout of windows, outdoor areas, extent of eaves were also factors considered in the mitigation of views which might otherwise be significant.

[121] Ms Lucas also took into account the kinetic effect of the turbines in making her assessments. Both Ms Lucas and Mr Rough acknowledged the sensory connection of



14 Jorgensen EIC paras 17 and 30.5.

observation – that viewers will more likely see what they hear and hear what they see – thus the acoustic environment can diminish or elevate the visual effects and vice versa.

Shadow flicker and blade glint

[122] Shadow flicker was acknowledged by the experts as a possible adverse effect to be taken into account. Mr Paul Botha, wind consultant to Meridian, described the shadow flicker that he modelled and calculated as shadows cast from the rotating turbine blades:

> *This can create a disturbance within houses when the shadow falls across the window.*

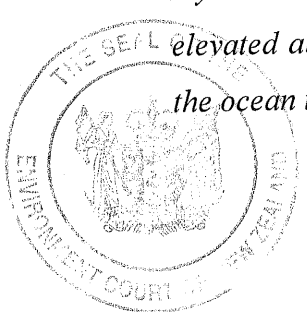
He told us that the effect is calculated at 10 times the diameter of the blade so for V90s the maximum distance would be 900m with the effect diffusing before this maximum is reached. Other factors need to be present for the shadow to occur such as the angle of sun and the orientation of the blade. Mr Botha concluded that that there was some small probability that this may be experienced by four houses in Opau Road. The annual theoretical maximum he calculated was between 1-3 hours. Blade glint was a different phenomenon. This occurs when a blade passes in front of the sun and there is in his words *a twinkling effect, a slight reflection of the blade as light reflection off the structure rather than a shadowing - -one has to stare directly at the rotor.* In this regard, a condition is to be imposed which requires non-reflective paint.

Effects

[123] Mr Hudson placed the households into four general groups which he considered to be closest and most affected. We view that division to be reasonable but have expanded numbers to include those assessed by other witnesses.

Takarau Gorge

[124] Takarau Gorge is described as a complex narrow valley, formed by a tributary of the Makara stream. Takarau Valley Road provides a coastal link from Wellington through Ohariu on to Makara Road. Ms Lucas describes the locality thus: *The landscape is very rural displaying a mix of pastoral forestry and regeneration lands on the enclosing slopes. The skyline is the broad summit of Quartz Hill.* She describes the houses as being *generally elevated above the valley floor with views to Quartz Hill, Makara Valley and for some also the ocean to the north.*



[125] Landscape witnesses agreed with Mr Rough's assessment that there would be substantial visual effects for those residents who see large numbers of turbines or because those they see are highly prominent. But witnesses diverged in their evaluations. Mr Rough described some views as being at a distance across complex landscapes with a consequent reduction in effects. As well mitigation was achieved through screening and, for some, house orientation provided alternate views.

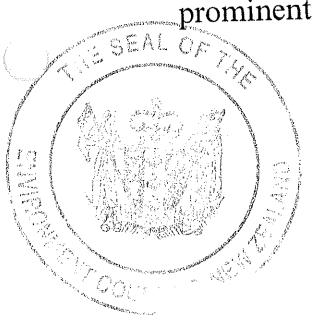
[126] For Ms Lucas the large numbers of turbines on the skyline summit will attract the eye through movement, and they will be a direct horizon view for many Takarau Gorge residents with turbines both frontlit and backlit. Turbines of the B, D and E series can be seen within the range of 1.7 – 3km. The B turbines BO2, BO3 and BO5, were regarded as the most dominant for residents in southern Takarau Gorge with others from the D and E series also adding to effects in the skyline view which were described as collectively substantial

Makara Valley

[127] Ms Lucas believes the rural character has remained intact and the landscape is undomesticated. As well as the more closely spaced residential housing around the village, Makara Valley contains lifestyle properties and larger farming units, some of which are tucked into elevated slopes absorbed by landform and vegetation patterning. There was agreement that, for some properties, the turbines would pose a significant change to the present environment.

[128] Mr Hudson believed outdoor design could reduce adverse effects - as was being accomplished on some properties already. Ms Lucas cites Quartz Hill as a viewing focus for some properties. Although foreground views were complex turbines were seen in silhouette on the skyline.

[129] For a group of houses in a side valley turbines with views facing northwest H01-04, and the D series, in particular D10-11 were variously considered to have significant effects due to aspect, proximity and elevation. Elsewhere along Makara Road the E series were prominent individually or collectively.



Opau Road

[130] This road leads to the Post Office village built in the 1940s. There are four privately owned homes. Ms Lucas found that for some properties the turbines were in such proximity, 650 m, that they were very prominent. Mr Hudson did not make an assessment of this area. BO3 and B05 were close at 800-900 metres but screened in part by trees so that only the rotor and tips were visible.

South Makara

[131] The upper slopes of the South Makara valley were described as *developing increased naturalness* because they are largely regenerating. Views were described as normally expansive taking in the Makara -Terawhiti ridgeline, the Karori Golf Club in the foreground, and the regenerating and mixed used vegetation cover. Mr Hudson observed that South Makara carries the high voltage transmission line accentuating its modified character.

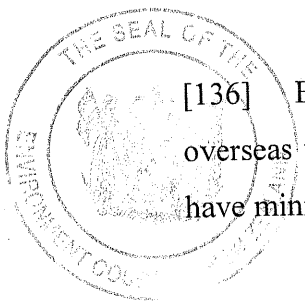
[132] Ms Lucas assesses that landscape views will be significantly impinged upon by a string of visible turbines of the H series. Mr Hudson stated that here there is limited opportunity for screening because in many cases the full turbines can be seen, particularly H17-19.

[133] Turbines of the H series are located on the skyline at distances of 1100m-3km with those closest described by the experts as prominent and when seen collectively as causing a substantial effect on amenity.

Avoids remedies or mitigates?

[134] Mr Rough discussed the changes made at the design stage to maintain visual and rural amenity. As a general guide turbines closer than 1km were deleted. To avoid an unacceptable impact 15 turbines above the Makara Valley were removed.

[135] As mitigation of the visual impact Mr Rough considered the colour chosen: - light grey paint with low reflectivity, would be most suitable in the widest range of conditions. Turbines will be the same size, which imparts an aesthetic unity.



[136] Because it was accepted that grouping can be highly visible, and lead, as Mr Rough's overseas windfarm examples showed, to an industrial display, this project is designed to be have minimum turbine separation distances of 225m on the east - west ridges or 450m on the

north – south line. Clustering only occurs on the Meridian owned site. We do note that rather than being an aesthetic consideration Mr Botha describes the separation distances as an efficiency requirement necessitated by turbines generated turbulence.

Discussion

[137] On a site of over 5600ha there is an imperative to site turbines where they cause the least significant change to the rural amenity for local residents who are generally located in or close to one discrete valley catchment.

[138] It has been a difficult task to assess the acceptability of the adverse effects of the project on this community whose rural amenity and landscape would be affected by significant aesthetic, kinetic and acoustic change.

[139] Understandably residents have a desire to maintain their current rural amenity. Most residents do not oppose a wind farm in the principle but want greater separation distances between turbines and residences than those which are before us. The experts agree that there will be houses where effects, particularly visual, will be substantial and adverse.

[140] Two factors contribute to the significance of the effect for the Makara community. They are distances from turbines and the turbine elevation above the eastern ridgeline which is a key panoramic view.

[141] Firstly some turbines that are seen against the sky may extend up to (now) 111m above the ridgeline. We accept that when close and in full view, or when seen collectively across a prime panoramic view, that these will significantly change and dominate the landscape. The kinetic movement will draw attention to the turbines with back and front lighting further exacerbating effects. We consider that for residents these turbines will be on display. Houses are frequently configured to enjoy the north and west aspects which are those that look to the turbine ridgeline. While some people may enjoy the languid movement and aesthetics of a wind turbine this community has clearly stated that it does not want them in their front yard.

[142] Next we have examined the distance factor. Discounting mitigating factors which we turn to subsequently, the separation distance between wind farms and residents is a

measurement which has received widespread examination with some emerging consensus both here and overseas. We have had most regard for the New Zealand surveys, the Sinclair-Thomas matrix, and the experts before us Mr Rough, Ms Lucas and Mr Hudson who all agreed that effects (unmitigated) for some properties were significant and adverse at the distances presented. It is a pity that there is not an agreement on a common nomenclature to enable comparative analysis to be assessed more easily. In this case the residential distances from turbines fall roughly between one kilometre and two with some residents marginally closer or further away. Surveys analyses before us were an assessment on smaller turbines so there is an in built conservatism. We accept that for distances of less than 2km there is the potential for turbines to be visibly prominent with the potential for adverse visual effects to be significant. Where multiple turbines are the viewing focus, effects may be significant and adverse up to three kilometres.

[143] Given that the proposal was significantly revised to avoid or mitigate at least some of these effects, we shall return to consider specific groups of turbines, and of residences in discussing the revised proposal, later in this decision.

- ***Traffic***

[144] Initially, there was considerable concern about increased levels of traffic, particularly during the construction phase, on Makara's narrow and winding roads. After discussion, the traffic engineers for all parties have agreed that the situation is manageable, particularly if the large components are taken to the site by barge, berthing at Oteranga Bay.

[145] Traffic volumes associated with the project are said to be low in the context of existing traffic in the area and also as to what might be expected from rural/residential development in the future. Mr Peter McCombs, traffic consultant to Meridian, and Mr Robert Spence, the WCC's Chief Transportation Engineer, are substantially in agreement as to how the project's impact on all of the three plan requirements may be managed and ameliorated.

[146] Our site visit confirmed many of the residents' concerns due to the narrow carriageways, alignments and blind corners of the collector and local roads within Makara itself. To a large extent Meridian's proposal to barge the overweight and over-dimension turbine components will avoid transporting the largest of the proposed structures on the public

roads. That is a major mitigation outcome in terms of lessening effects on the Makara community.

[147] Otherwise, 40 truck movements and 150 light vehicle movements a day are expected to take place during construction hours 6am – 7pm, seven days a week. At locations where full road widening to the City Council's standards is not achievable, it has been agreed with Meridian that other engineering measures are to be put in place within the available road reserve to create greater effective road width. A Construction Traffic Management Plan is intended and a community liaison group to liase with Meridian over traffic issues is intended. Mr Spence also agreed with amendments to the conditions suggested in order to bring greater certainty to Meridian's traffic and construction operations.

[148] We conclude the construction traffic will create two years of disruption, controlled through temporary traffic lights, etc. but we were left with the certainty that the roading improvements proposed will leave the roads considerably better than they are now. Meanwhile Mr Graham Tuohy, traffic consultant to the Guardians, acknowledges, as do all other consultants, there are no issues with regards to safety and efficiency of the road traffic.

[149] There remains the question of amenity. Currently, Meridian proposes for construction traffic to operate from 6am – 7pm seven days a week. As counsel for the Guardians points out, this ignores the level of amenity this small community enjoys currently. Its members ride and walk these roads, while 60% of the construction traffic which accesses the entry/exist point to Terawhiti Station will create movement amenity issues for several residents who live close by.

[150] Meridian have agreed as a condition of consent to create pedestrian access in Makara Village. The consents also contain specific conditions in respect of the hours of operation to take account school traffic. On our site visit we considered it should be possible for Meridian also to seal the road between the Patterson dwelling and the foot of the hill accessing the site. This will have the effect of suppressing dust and mitigating noise effects in this area. We consider this too should be a condition of consent.

[151] The Court also suggested that Meridian should accept some restraint on its Sunday traffic. We are advised that construction traffic will be at a substantially lower level on

Sundays in any event, but *some* onsite activity will need to take place; eg, work associated with barging activities (which will be weather related), or to ensure construction activity can continue on the following weekdays. That was not what the evidence-in-chief indicates, but Meridian's suggested Condition 76 meets some of our concerns. That states:

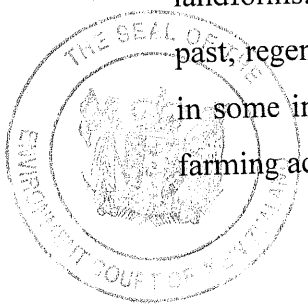
> *Bulk goods such as aggregates and water shall be transported to the site in suitable vehicles not greater than single-unit trucks of HCV – 1 rating, and shall not be transported to the site via public roads on Sundays or public holidays.*

[152] We discern that there is still a level of disquiet about the issue of traffic on the part of some residents, but in the absence of definite evidence about particular issues, we cannot take the point further. We return to traffic issues again under Part 2 matters.

- ***Natural Character of the Coastal Environment***

[153] At the outset we note there is a distinction to be made under Part 2 RMA between the preservation or protection of natural character (s6(a) matters), the protection of outstanding natural landscapes and natural features (s6(b)) (both from inappropriate use and development) and visual amenity issues (s7(c)). They are thus to be considered separate and distinct (depending on the scale of the project and the site). Here we wish to discuss the effects of the project on the natural character of the coastal environment only, because natural character is a baseline from which other issues such as outstanding natural landscapes and features and visual amenity flow. And the intrinsic as well as the experiential dimensions of the natural character of the environment must both be addressed in assessing landscape and visual effects.

[154] The project area has 26km of coastline which extends south from Makara Beach past Cape Terawhiti and around to the east of Tongue Point. As Mr Hudson fairly describes it, several bays with gravel beaches are features on a coastline which otherwise has a predominantly rocky and cliffed shoreline. Above much of the shoreline is a steep escarpment and coastal benches are cut into south facing ridges adjacent to Cook Strait. Coastal terraces are particularly well-formed south of Cape Terawhiti and at Tongue Point but they are only a small part of the site of marine terraces recognised as significant uplifted marine terrace landforms. While the coastal escarpment has been modified by fire and vegetation loss in the past, regeneration of coastal species is slowly occurring in some areas but to a greater extent in some inland valleys that are less exposed to the extreme coastal winds and to continuing farming activities.



[155] For the appellants, one of the issues to be determined is the extent to which the proposal will impact on the natural character of the coastal environment, including cliffs and coastal escarpments. Elements of Project West Wind that have potential impacts on natural character/landscape are:

- the turbines;
- permanent modifications to the landscape as a result of developing and operating a windfarm – resulting from access roads, turbine platforms and fill disposal sites;
- ancillary structures and activities – such as substation and power transmission lines and anemometer masts;
- temporary facilities – such as a berthing structure, lay down areas and a concrete batching plant.

[156] The turbines are to be located on the ridgelines of two farms, some of which stretch inland, and then to the coast, and others are grouped more loosely within the coastal landscape and its hinterland.

The Parties' Evidence

[157] *Natural character* is generally understood to occur on a continuum from pristine to totally modified. The criteria for assessing naturalness include:

- the physical landform and relief;
- the landscape being uncluttered by structures and/or "obvious" human influences;
- wildness, exposure and the natural sculpturing of landforms and vegetation;
- the presence of water – in this case coastal seas and streams and wetlands;
- the vegetation (especially native) and other ecological patterns;
- the wider natural landscape context and the site's relationship to this context[15].

[158] What constitutes the *coastal environment* was, however, subject to differing opinions in this case despite Mr Rough telling us that there had been general agreement at the experts'

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15 Using the criteria agreed upon by the Ministry for the Environment in its 'natural character' workshop (2002).

[159] caucusing that "the coastal environment" is as delineated on Rough Sheet 4 *Coastal Landscape Units* although he acknowledges there will be coastal influences such as salt spray and winds over the whole Project West Wind site. Mr Rough himself draws a distinction between a coastal dominance zone, which contains obvious coastal landforms such as dunes and escarpments, which allows views of the sea and the coastline, contains maritime vegetation and wildlife, and which is readily visible from the shore and near shore – and what he describes as a coastal influence zone which may support coastal fauna and vegetation which is wind shorn but chiefly has been farmed and is in rough pasture or plantation forest. He identifies that all the turbines (with the exception of one at Tongue Point, which is on the boundary between the two zones) are located in the coastal influence zone.

[160] Mr Rough stresses the natural character of this zone has been diminished over the years by fire and grazing, fencing, farm tracks and various hilltop structures such as communication masts and buildings. He identifies nine landscape units, each he claims having a consistency of character. His summary of his assessment of natural character for each of the nine landscape units is:

Unit 1	Ohariu Bay	moderate – low
Unit 2	Pa Site/Gun emplacements	moderate – high
Unit 3	Opau Bay	moderate – high
Unit 4	Te Ikaamaru Bay	moderate – high
Unit 5	Ohau Bay	moderate – high
Unit 6	Terawhiti Hill	high
Unit 7	Oteranga Bay	moderate – low
Unit 8	Outlook Hill	high
Unit 9	Tongue Point	moderate – high

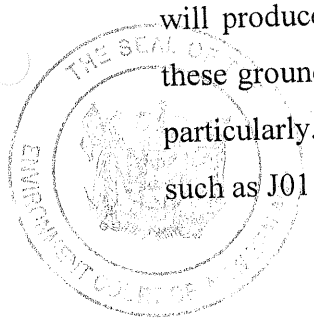
[161] Mr Rough did not take the first major inland ridge as the delineation of the coastal environment in this case because in the southern part of the Cook Strait region of the coastline there are a multiplicity of ridges incised by deep valleys which present openly to the viewer and display a multiplicity of coastal species.

[162] Mr Rough concludes from his evaluation that there will be potential and substantial effects from Project West Wind on some areas of the natural character of the coastline but that overall the project should proceed and the number of turbines should remain as applied for.

[163] Mr Stephen Brown, landscape consultant to the New Zealand Wind Energy Association, examines Mr Rough's nine landscape units, Ms Lucas's concerns about them and adopts a method of rating the nine coastal units in terms of their contribution to natural character also. He concludes that in terms of landform, vegetation type, vegetation cover, land uses, seascapes, natural processes and experiential values, he would allocate a slightly higher rating than Mr Rough from Opau Bay to Ohau Bay when their intrinsic values are accounted for. He concludes that the impacts of the windfarm would be significant or perhaps high/moderate reflecting the predominantly undeveloped nature of the coastline and the very significant change that will accrue with the emergence of the windfarm in the immediate coastal hinterland. But he too approves of the project proceeding.

[164] Mr Hudson adopts Mr Rough's zoned method of analysis as a valid framework, and comes to most of the same conclusions as he does, with the exception of accepting two turbines (H28 and H29) in the H series along the ridgeline at Tongue Point. This may be the point to mention that in the ensuing discussion we deal with the evidence as it was actually given by the witnesses. At a later point, we will deal with issues such as extrapolating what the witnesses did say in considering the revised layout, and the new, removed or repositioned turbines; eg H30.

[165] Mr Anstey sees 'the coastal environment' as one in which the coast is a significant part or element. He notes where there are hills behind it, the coastal environment has been generally accepted as extending up to the dominant ridge behind the coast. There are however circumstances, he suggests in this case, where coastal influences may be seen as extending inland beyond a nominal dominant ridge. This witness is unconvinced about the division of the coastal environment into two "zones" with the practical implication that natural character is less in the coastal influence zone and therefore it is better able to accommodate cultural impositions (such as turbines and their platforms, roads, etc). In his opinion the values attaching to the natural character of the coastal environment must be managed in a coherent and integrated way and Mr Rough's delineation of the hinterland into zones is arbitrary. Mr Anstey considers that in areas, particularly the southern part of the coastline, the project will produce major and significant impacts on natural character and should not proceed on these grounds with respect to the G series turbines, the N series and the H22 – H29 turbines particularly. In addition, there were other turbine sites about which he had serious concerns, such as J01.



[166] Ms Lucas' analysis (broader still) was carried out on a catchment by catchment basis, and divided into Makara Lands and Terawhiti Lands (Lucas attachment 2 *aerial photograph*). Her analysis included substantial inland areas. The catchment key identifies the individual catchments as follows:

Makara Lands

1. Smiths
2. Hawkins
3. Takarau
4. Upper Makara
5. Makara
6. South Makara/Karori
7. Long – Silver
8. Te Kopahou
9. Tongue Point

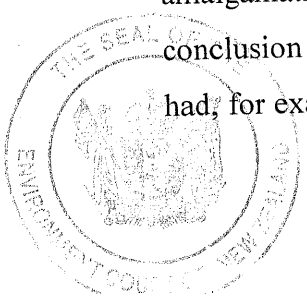
Terawhiti Lands

10. Waiariki
11. West Outlook
12. O te Rongo
13. Ohau
14. Te Ika a Maru
15. Opau Stream
16. Far Point
17. West Terawhiti

[167] This evidence was supported by a landform components key (Lucas attachment 4 *Landform components*) which identified the valley floor, hills, ridges, cliffs, marine terraces, raised beaches and seabed and the turbine locations. As a result Ms Lucas considers that much of the site contributes to an outstanding natural landscape and she considers natural character will be greatly diminished, to the extent the project should not proceed at all.

[168] Ms Lucas does not agree with Mr Rough's assessment that each of his landscape units has a *consistency of character*. Rather, she considers, they are spatial divisions, largely visual catchments. All of the units include some scarp landforms; several include inlet heads. They are thus landform-defined places rather than areas consistent in character. With landscape character in this coastal landscape very much a response to landform type, to delineate consistent character would be to delineate separate landform types. This has not been undertaken by Mr Rough.

[169] We consider it is useful to assess the landscape/natural character areas by amalgamating the various methods formulated by the witnesses in order to form an overall conclusion about the natural character of this coastal environment (one of the difficulties we had, for example, was equating 9 landscape units with 17 landscape catchments). The results



of the cross-examination of some of the landscape witnesses helped round out what we perceived to be some gaps or omissions.

Makara Beach/Ohariu Bay/Warehou Bay

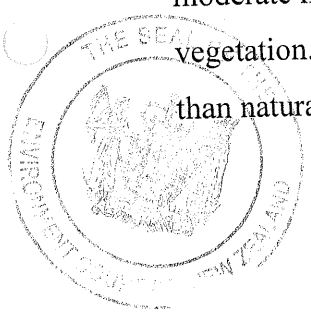
[170] Ohariu Bay is the northern extremity of the Project West Wind site. It is the outlet and estuary of Makara Stream, adjacent to the Makara Beach settlement and is where Makara Road terminates.

[171] The cliffs on the eastern side of Ohariu Bay, a narrow promontory on the western side, the gravel beaches and the outlet of Makara Stream are all described as features with high natural character. Mr Rough considers, however, that this character is somewhat diluted by the presence of clusters of dwellings, the road end and carparking areas adjacent to the beach, derelict boat haul-out facilities, a walking track which leads around the western shore (to a small valley where access is afforded to a pa site on the promontory) and gun emplacements to the southwest.

[172] The only other settlement in the vicinity of the project is Smith's Bay about 1km north of Makara Beach. Smith's Bay is accessed by a farm road. Four turbines were deleted from the plateau above Makara Beach in Meridian's AEE scoping exercise in order to avoid turbines overlooking the beach and settlements.

[173] The hills, rising to 146m above the east side cliffs, are seen by Mr Rough as an obvious component of Ohariu Bay's coastal influence zone. On the western side, that influence comprises low descending spurs which are at the northern end of a major ridge which extends south-westwards over Quartz Hill, White Rock Hill and Mt Misery. The hills are farmed, generally devoid of native vegetation and, in Mr Rough's opinion, of moderate natural character. But within this area the Makara Stream Estuary is a high natural character feature with a very high diversity factor.

[174] Overall, the landscape unit of Ohariu Bay is considered by this witness to be of low moderate natural character due to the presence of the settlement and a dearth of native coastal vegetation. Mr Brown appears to echo this conclusion although more in landscape, rather than natural character, terms:



In my opinion, the existing proliferation of structures, development, infrastructure, productive forestry and weakly differentiated transition from pasture into scrub and native shrubland would all mitigate against an 'outstanding' rating across most of the remaining Project West Wind site, more so around Makara Beach and Valley, Smiths Bay, ... and the southern end of the Takarau Gorge.

[175] Mr Anstey takes a more liberal view of Ohariu Bay. He describes the sea and the estuary as the most dominant features in terms of its character and experience. Its cultural dimension is contained, with the built structures hugging the more sheltered areas of the coastal edge. For this witness the character and location of these structures reflect and endorse the strength of coastal influences while roads, tracks and the geometric patterns of fences and trees across the more sheltered generally inland areas demonstrate the remainder of a rural culture. Mr Anstey sees the area as of moderate natural character commenting, however, that the Meridian approach to the area overstates the significance of the cultural dimension, particularly, with respect to the lack of native vegetation over the site.

The Beach Settlements

[176] The bach-like settlements hug the beachfronts, are small scale, not particularly picturesque, with little softening vegetation. The stony-beaches provide a rugged interface with the dominant coastal forces. The buildings reflect the harsh environment to which they cling. At Smith's Bay, Ms Lucas identifies the baches as remote and secluded, with the scarps to the bay having a high natural character. Mr Rough considers that because the B series turbines are not visible from Makara Beach, they will not dominate the landscape and will only have a moderate effect on natural character from that location.

[177] Ms Lucas concludes otherwise. She considers that while the Makara Beach settlement itself will remain free of intrusive turbines, B02, B03 and B05 will be prominent features from Smith's Bay some 1½km distant, in the context of a coastal environment that currently lacks manmade features. In her opinion it is appropriate therefore that the turbines do not overlook the beach and settlements there.

The Makara Walkway/Pa Site/Gun Emplacement Escarpment

[178] The Makara Walkway overall entails a 3 hour trip from Makara Beach via Warehou Bay, Opau Bay and the WWII observation post and gun emplacement up on top of the coastal

escarpment near Makara Beach. Altogether fifty three turbines will be visible from this area of coastline but there are two in particular we address here because they are at the beginning of the walkway and are the same turbines that are noticeable from Smith's Bay.

[179] Mr Rough describes this area as a 1.25km long section of northwest facing coastal escarpment which lies between a distinctive narrow promontory on which a Ngati Ira pa once existed, and a more minor promontory on which are the remains of a World War II observation post and two gun emplacements. The coastal escarpment, which attains a height of 180m above sea level is very obviously the feature of coastal dominance. But as a result of fires and grazing the escarpment's vegetation cover is significantly different from its original indigenous cover and reduces its natural character. On the promontories, natural character is somewhat reduced too by subtle earthworks and the observation post/gun emplacement structures. Minor features such as a walking track and farm fence also diminish the area's natural character.

[180] Therefore the landscape associated with the escarpment between the pa and the gun emplacement is seen by Mr Rough as having a moderate – high natural character.

[181] Mr Anstey gives only a brief description of this unit noting the coastal character of the site is dominated by the coastal escarpment and its strong relationship with the marine environment. Attempts have been made to exclude grazing animals from this area and he also considers it can be summarised as having moderate to high character. Mr Anstey's Photograph 1 *Walkway to the Gun Emplacement – at this northern end there is a stronger cultural presence in the coastal environment* discloses subtle modification in vegetative terms to this environment.

[182] Another coastal assessment was made in this location by Dr Hugh Barr for the Societies. He is a scientist and researcher with a strong commitment to recreational interests. Dr Barr's photographs depict a scenic rugged coastline, wild and scenic coastal escarpments and bays south of Makara Beach. In our view, they illustrate a highly natural coastline, modified in part only by some minor structures and pasture growth. Emerging revegetation of the coastal escarpments is clear in most of the photographs.

[183] The reality of these turbines in such an environment is that each one is the equivalent of 125m high and while they have a distinct functional elegance when viewed stretching across the landscape, they are a formidable intrusion on natural character values at close quarters. Mr Fuller notes that the shrublands that may be persistent are those on the active coastal escarpment. The area near parts of the escarpment is now fenced off from sheep. If protected from fire and grazing the area will regenerate to purely indigenous vegetation cover.

[184] Mr Rough acknowledges that the B02 and B03 turbines are substantial in landscape terms and [their absence] would obviously lessen the project's effect on natural character values.

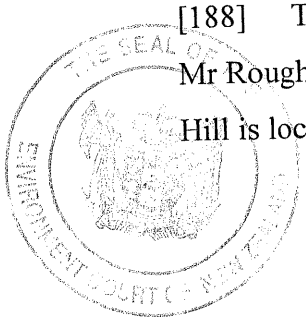
[185] Because of the area's strong coastal relationship, we concluded that two very intrusive structures such as these two particular wind turbines would cause further diminution of natural character at the site in this area. But they may nonetheless be an *appropriate* use or development, a point we discuss later.

Opau Bay

[186] Opau Bay is described as a 2.5km long, gently-curving, indentation in the coastline with a general orientation to the northwest. Almost in the centre of the bay is the Opau Stream outlet.

[187] In Mr Rough's opinion, the prominent and highly legible coastal escarpment is the obvious feature of Opau Bay's coastal dominance zone; although he considers fires and grazing have adversely affected the original vegetation which is no longer dominant. This diminishes the area's otherwise high natural character. A vehicle track on the escarpment ridge links the stream outlet area with the gun emplacements over Opau Bay's defining northern promontory. Farm fences also occur on the escarpment's crest and collectively a small pump shed, which is set back approximately 250m from the beach, vehicle track and fences also have the effect of slightly diminishing the escarpment's natural character.

[188] Turbines are to be placed within the coastal influence zone in this location. It is Mr Rough's opinion this zone of Opau Bay extends inland to the ridgeline on which Quartz Hill is located.



[189] While there are elements of high natural character in the Opau Bay landscape unit, Mr Rough again considers, because of its highly modified land cover and a concentration of manmade structures in its coastal influence zone (particularly Quartz Hill), the area has a moderate – high natural character overall.

[190] Nevertheless, the windfarm will, according to Mr Rough, have a substantial effect on the natural environment of Opau Bay itself. Although positioned at their closest some 400m back from the coastline and 200m back from the top of the escarpment, the turbines will appear in a few instances to be on top of this prominent and highly legible escarpment. Thus the turbines will adversely affect the natural character of the coastal environment because they will represent the introduction of manmade structures in a situation where few, apart from fences, the shed, the vehicle track and the gun emplacements, are presently apparent.

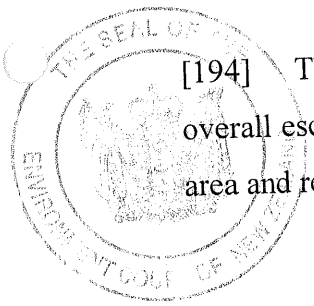
[191] Mr Anstey concurs with Mr Rough's opinion of moderate – high natural character for this area overall, despite describing the coastal escarpment as reverting to native species and of a very high natural character – a character which extends inland with indigenous regrowth occurring across steeper sheltered faces and along streams. He notes the vegetative patterns follow natural boundaries and add emphasis to strong coastal influences.

[192] Mr Hudson for WCC considers that within Opau Bay, the four seaward turbines (G02, G03, G05 and G07) atop the coastal escarpment seen in Mr Rough's Photopoint 11 *Opau Bay Walkway Before and After* from a viewpoint 500m south of the bay's northern headland are dominant in the coastal environment and adversely affect its natural character.

[193] Mr Rough says:

> *Although the illusion* (of some turbines being close to the escarpment) *somewhat adversely affects the integrity of an approximately 500m long section of Opau Bay's coastal escarpment, any such adverse effect needs to be put in the context of the fact that the coastal escarpment is a feature which extends for a very considerable distance around the Wellington District's coastline.*

[194] This statement appears designed to diminish the recognised integrity of the area's overall escarpment which extends the extensive length of the coastline to Cook Strait in this area and requires close consideration and appreciation.



[195] Ms Lucas says this about the scarp landscape of the west coast which encompasses Opau Bay:

> *The scarp landscape of the west coast, from Ohariu to Terawhiti, is of very high significance due to natural science values from the geomorphology and the grey scrub ecology, and their contribution to the Cook Strait Ecosystem.*
>
> *The scarp landscape of this west coast is of very high legibility value, demonstrating its fronting of the North Island into Cook Strait. At their* [its] *base, the rock stacks and intertidal shores provide the transition area from land to sea. It is a rugged and stark landscape in total, clearly demonstrating the interface of the Wellington peninsula with Cook Strait.*
>
> *Within however are bays and niches providing retreats and a contrasting aesthetic. The combination of the scarps and the containing bays is highly memorable.*

[196] Ms Lucas' photographs in her rebuttal evidence (photographs of Opau Bay and the Opau Bay catchment, pages 7, 8, 12, 13 and 14) show the area's high natural character. So do Dr Barr's series of Walkway photographs.

[197] Mr Anstey's moderate-high values of this area emanate from his assessment of the ridges and Quartz Hill behind the escarpment with its geometric patterns of fences and trees enclosing pasture and therefore assuming dominance along the inland edge of the Opau Bay area. But even then he qualifies this assessment by stating *Difficult topography has constrained development for the majority of the unit however and the strong relationship with the sea has sustained a high natural character.*

[198] Cross-examination of Mr Rough established much of the ridgeline line above the Opau coastal unit has high natural character. The ridge above that and around turbines G02, G05 and G07 is covenanted regenerating forest and there is a covenanted area down that whole coastline. And Mr Rough acknowledged in cross-examination that the sweeping scarp of Opau Bay is an example of the significant escarpments identified in the Wellington Regional Policy Statement.

[199] We conclude that the location of the turbines F04, G03, G05 and G07, even though located in the coastal environment, affect the high natural character of the escarpment. Turbines would be within 750m of the coastal edge (and some within 500m) which makes them very dominant and therefore intrusive on natural character values. G02 from Mr Hudson's evidence, Figure 1 *Opau Bay from point 1500m from G7* indicates that only the tips of that turbine would be seen.

[200] It is clear from Mr Rough's Photopoints 11 and 12 *Opau Bay Walkway and Gun Emplacements* that the turbines F04, G03, G05 and G07 will have a substantial effect on the natural character of the coastal environment in Opau Bay. The size of the development changes the natural character of this coastal environment.

[201] For we consider these two simulations Photopoints 11 and 12 present the overview for the whole proposal. And this is not a relatively short section of an affected coastal escarpment. Opau Bay is 2km long and 1¼km of the spaced wind farms will take up the viewshaft of this bay. Ms Lucas in attachment 11 *Catchment Locations* demonstrates how close to the coastal fringe with high natural character turbines as G03 and F04 will be.

Te Ikaamaru Bay (Te Ika-a-Maru) and Ohau Bay

[202] The beach area and associated terraces, escarpments on both sides of Te Ikaamaru Bay and the slopes above the escarpment on the western side of the bay, are seen as features of coastal dominance. But Mr Rough considers the loss of most of the original cover of native vegetation has reduced an aspect of these features' high natural character. Nevertheless this factor is qualified by the fact that a significant, albeit small, stand of coastal forest (Te Ikaamaru Bush) occurs on slopes behind the beach. The presence of subtle earthworks associated with pa sites, two baches set in trees near the beach, a vehicle track and farm fences are also seen by this witness to diminish the otherwise high natural character of Te Ikaamaru Bay's coastal environment.

[203] Meanwhile the bay's coastal influence zone consists of broken hill country behind the beach area, the west side promontory and the east side escarpment. Although farm roads and fences are present and the natural land cover has been destroyed by fires and grazing, much of the zone is regenerating to young shrublands with a significant native species

component. Thus the area is trending back towards having high natural character. Presently Mr Rough assesses its natural character is moderate to high.

[204] Mr Rough describes Ohau Bay as a small bay and the southern-most on the North Island's west coast before Cook Strait is entered. Like Te Ikaamaru Bay, Ohau Bay has a northeastern aspect and is thus sheltered from strong southerly fronts.

[205] The beachfront area and the strong topographic forms of flanking headlands are the obvious features of coastal dominance. Some fences and a section of the farm road on the eastern promontory and a navigation light beacon high on the western promontory (Ohau Point) are the only obvious manmade facilities. Shrubland regeneration is occurring on the promontories. Natural elements, patterns and processes dominate giving the coastal environment of Ohau Bay a relatively high natural character.

[206] The coastal influence zone of Ohau Bay includes a narrow valley floor area which extends for approximately 750m back from the beach. A stream traverses the valley floor and drains into the bay. The zone also includes broken hill country below the 243m high Ohau Hill (southwest of Ohau Point) and similar country which extends inland from the promontory separating Ohau Bay from Te Ikaamaru Bay. Although there is considerable regeneration of shrublands on the hillsides, Mr Rough considers the high natural character in the coastal influence zone is reduced to moderate by exotic pasture which covers the valley floor, fences, a whare in the valley (approximately 300m back from the beach) and a vehicle track which gives access from the southwest to the building via a spur.

[207] This witness considers that like Te Ikaamaru Bay, the high natural character of bold landforms and regenerating shrubland is tempered by the presence of manmade elements and patterns associated with farming. And, in the case of Ohau Bay, the navigation beacon provides an additional feature which has a minor, but cumulative effect, on natural character. Overall the Ohau Bay landscape unit has moderate – high natural character.

[208] Ms Lucas however considers that Ohau Bay has much lesser disruption to its natural character and a greater experience of that coast with its intimate association with the wildness, remoteness and naturalness – than for example Oteranga Bay and Tongue Point which

supported for their high natural character by Mr Anstey. Various photographs attached to her rebuttal evidence confirm this, as does Dr Barr's evidence.

[209] Ms Lucas perceives little clutter in this landscape with the bay a haven from the wilds of Cook Strait behind Terawhiti Hill. She assesses the area as having a relatively high natural character with very high landscape value. But she assesses the K series as being very dominant on the ridgeline above the coastal lands and waters of Te Ikaamaru and Ohau Bays. She is critical that the natural character and landscape values of these bays has been downplayed because it is alleged by Meridian that very few people see them. For these special southern bays, Te Ikaamaru and Ohau Bay, not only the turbines proposed to 'tower' between them – N03, N02 and N01, but also those behind, the K series, will have very significant adverse effects on the visual, landscape and amenity values of these bays.

[210] Ms Lucas considers the great natural coastline from where a proposed Coastal Trail/walkway emerges in Opau Bay and along the coast into Te Ikaamaru Bay will also suffer from the dominance of the front row of turbines immediately above the ridge – G07, G05, G03 and F04. The turbine scale is such that those behind still within around 1km of the coast will also be seriously dominant and greatly reduce the natural character of this coastline – G02, G01, F03, F01, and F02. Ms Lucas thus considers removal of these coastal turbines is necessary to adequately protect the high natural character of this coastal environment. Otherwise important landscape values will be disrupted.

[211] Mr Anstey considers these landscape units as the most complex and diverse he has assessed. Both have a northern orientation with ridges and promontories having a northerly alignment. The steep sided valleys open out to the sea with contained beaches enclosed by escarpments and distinctive headlands and the area provides no buffering escarpment to exclude strong coastal influences, so that the few distinctive cultural enclaves are tightly contained within sheltering rock outcrops and trees. He considers this restricted cultural dimension tends to emphasise the drama of the wider and overwhelming natural character. Within these units there is a strong sense of remoteness and isolation with farming activities having worked only the softer edges of what is generally a difficult place for settlement. Ridges and promontories are regarded as having a high natural character with their definitive landforms, their immediate relationship with the sea and their naturally patterned vegetation.

Any detraction from this environment through the growth of gorse and the existence of exotic pasture is regarded as transient. The coastal edge and sea appear as one integrated landscape.

[212] Mr Anstey also identifies the G series turbines would demonstrate visual clusters in this environment, and F03 and F04, which are above and beyond the escarpments between Opau and Te Ikaamaru Bays, would be dominant and intrusive from these locations. Mr Anstey also notes the N series which would be high on a spur separating Te Ikaamaru and Ohau Bays itself and would dominate the natural character within Ohau Bay and the southern headland. Ms Lucas' attachment 12 *Catchment Locations* demonstrate how close the turbine NO3 will be to the coast in this location.

[213] The beaches of these bays disclose great solid landforms covered in pasture with the scarps and headlands experienced as of a large scale. With the rigour of the west coast seas, the swell, the tidal pulse, the weathered rocks and eroded faces, seaweed and driftwood, we consider the natural character of the coast and farming activity of this region dominates. Indigenous reversion is occurring on steeper areas with advanced growth in the more sheltered areas.

[214] We agree with Ms Lucas that Ohau Bay and Te Ikaamaru Bay, given their relatively unspoilt credentials, rate as having high natural character. The cultural modifications are only slight in this area and include green pasture. It meets most of the case law tests for natural character except for a few structures and from the predominant pastoral vegetation.

[215] Mr Anstey in cross-examination made the point that coastal natural character is a resource and a scarce one. This statement, together with Mr Rough's comment in his evidence-in-chief that his desktop study indicated that this coastline held Wellington's greatest coastal natural character, indicates that it is the scarce resource in terms of the district.

[216] As for the bleakness and physical degradation Mr Brown assumes of the coastal landscape, both Ms Lucas and Mr Anstey point out, much of the 'bleakness' depends on the wildness of this place and the so-called 'degradation' is natural erosion on steep faces and escarpments. We find also that Mr Brown underestimates the natural character values he also sees as high and very significant in the area. Many of the positive attributes he relates to Terawhiti Hill can also be applied to the other units. He is (nevertheless) clear that as a result

of the imposition of a layer of turbines across the coastal hinterland and skyline – even around Cape Terawhiti, the layer will have a significant adverse effect on the perceptions (or experience) of wildness and remoteness issues which arise from natural character.

[217] We turned to Mr Rough's Photopoint 11 *Opau Bay Walkway Before and After* in order to pinpoint the locations of the identified turbines which Mr Anstey and Ms Lucas were most concerned about. The three N series turbines, F03 and F04, and some of the G series appear to have the greatest impact on natural character in these locations. Whether they should be considered *inappropriate* in this location is an issue we assess later in this decision.

Terawhiti Hill – Te Raawhiti

[218] Between Ohau Bay and Oterangi Bay is the great Terawhiti Hill landform. Ms Lucas considers it emphasises the northeast-southwest "grain" of this landscape – with the distinct western ridge of Terawhiti Hill.

[219] Mr Rough identifies Terawhiti Hill's ridgeline trends northeast-southwest and extends for 7km between Ohau Point on the western side of Ohau Bay to Oterangi Bay in the south. The ridge attains its highest elevation of 458m on Terawhiti Hill. Below Terawhiti Hill is Cape Terawhiti which marks an entrance to Cook Strait.

[220] This landscape character unit's northern half has a coastal escarpment which extends to the ridgeline in the vicinity of Ohau Hill near Ohau Point. Below Terawhiti Hill and around Cape Terawhiti, to where the ridge descends to form a promontory with terraces which defines Oteranga Bay, the escarpment gives way to more of a cliff-like feature. The Terawhiti Ridge's coastal escarpment and cliffs rising above wave cut platforms are the obvious features of its coastal environment. It is considered by Mr Rough as a zone high in natural character with the strong landforms support regenerating shrubland and coastal bush in gullies. The coastline at the base of the zone has significance as a seal haul-out.

[221] The coastal influence zone includes all the slopes and gullies which extend from an elevation of approximately 120m, above the escarpments and cliffs, up to the ridgeline spanning between Ohau Point and Oteranga Bay. Although the land cover of the zone has been modified by fires and grazing, it is trending back towards shrubland with a significant native component, and the summit area around Terawhiti Hill has been identified as an

ecological site of significance for the native grasses, shrubs and vines that are present in pasture. Farm fences and a vehicle track, which ascends from Black Gully and traverses approximately one-third of ridgeline, and a trig station and wind test mast on Terawhiti Hill detract from the zone's natural character, but in the scale of the whole of the Terawhiti Ridge landscape unit these are minor features.

[222] Mr Rough considers that the block of land on which Terawhiti Hill is located, i.e. the area between Ohau Bay and Oteranga Bay and between Black Gully and Cape Terawhiti, including the cape itself, is *perhaps* a candidate to warrant recognition as an outstanding natural feature – at least as a district level.

[223] Mr Rough therefore sees its as entirely appropriate that in the scoping process 13 turbines and platforms (the T series turbines) were taken off this site and a proposal to upgrade an existing access road was withdrawn[16].

[224] Mr Brown in his landscape overview of the project endorses the Meridian approach suggesting the significance of Terawhiti hill is its *very strongly articulated terrain and strategic location allied to its overtly rugged wild and untravelled character.*

[225] Mr Anstey also describes the whole of this landscape unit as having extremely high natural character reflecting the dominance of the landform and its distinctive sculpturing as reflecting the pattern of the indigenous vegetation cover. In addition, there is a strong relationship between the hill and coastal edge with access constrained by the exposed ridge of the hill.

[226] No one witness considered there were any adverse aspects of the proposal which impacted on Terawhiti Hill and which detracted from its high natural character. The coastal edges and the sea, the escarpment spurs and headlands all demonstrate a landscape high in natural character.

[227] In our view the Terawhiti area not only contributes to an overall landscape of high natural character along this coastline but Terawhiti Hill is itself an outstanding natural feature. The hill is to remain turbine free but we note that to some extent it cannot escape its natural

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16 The AEE discloses Wellington faultline issues also.

character being compromised by the obvious extent of the windfarm turbines stretched along the adjacent ridgeline.

Outlook Hill

[228] Mr Rough describes that, at 537m, Outlook Hill is the highest natural feature on the site. It is located at the southern end of the main ridgeline which traverses the site and on which Mt Misery, White Rock Hill and Quartz Hill are located. For him the most obvious coastal dominance feature of its character unit is a steep escarpment rising above a wave cut rock platform and terminating at a cliff top 60 to 80m above the shoreline. The escarpment carries pockets of coastal bush in gullies and has high natural character.

[229] Mr Rough considers Outlook Hill's coastal influence zone includes all the slopes and gullies which extend from an elevation of approximately 120m above the escarpment and its cliff up to the summit ridge of the hill. Although modified by farming, the hill is now revegetating and, in his opinion, is an area of high natural character which is hardly diminished by the presence of some farm fences, a vehicle track leading along a ridge to the summit of Outlook Hill and trig and weather radar stations on the summit. In an overall context, the area has high natural character.

[230] The other landscape witnesses both recognise Outlook Hill has greater natural character values per se. This has also been recognised by Meridian which has left this area turbine free. A radar dome dominates and covers a 1.5km radius exclusion zone in this area.

Oteranga Bay

[231] Oteranga Bay is reached by a long, winding road from the top of Mt Misery or from the beach. It is southwest facing and has importance as a terminal for an undersea cable which links the North and South Islands. Black Gully with which it is associated is noted for its mining heritage – the mining of gold quartz in the 1880s. In Cable Bay there is a continuation of the sequence of marine terraces which stretch from Tongue Point.

[232] In this catchment, stretching from the main Terawhiti ridgeline at White Rock Hill and down to Mt Misery in the east and across the summit of Terawhiti Hill in the west, the H line of turbines stretch along the eastern ridge. To the north on the main east-west ridge, the

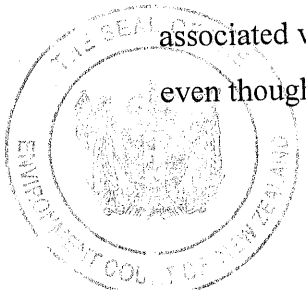
K series are proposed, while M01 is proposed on the ridge above Shepherds Gully, a sub-catchment of Oteranga.

[233] Features of Oteranga Bay's coastal environment include cliffs and terraces on the bay's northwestern side, an unstable gravel beach and cliffs and escarpments on the bay's southeastern side. These features are intact and support pockets of regenerating coastal shrubland. They have, in Mr Rough's opinion, moderate to high natural character. Features near the foreshore which detract from the natural character of the area are seen to be buildings, tanks, roads and power transmission pylons and overhead cables associated with the power cable terminal. These features reduce the overall natural character of the zone in his opinion to moderate to low.

[234] Oteranga Bay's coastal influence zone includes the lower reaches of Black Gully, southeast facing slopes at the southern end of Terawhiti Hill and generally broken hill country east of the power cable terminal. Although this land has been burnt and grazed it is now substantially regenerating towards a shrubland dominated by native species. Its high-trending natural character is tempered by the presence of farm vehicle tracks, a metalled road giving access to the power cable terminal and two overhead power transmission lines.

[235] Ms Lucas notes, as with other inlet heads, the lands of the bay with the valley behind exhibit a lesser degree of naturalness but that Oteranga Head and slopes from Outlook Hill are exposed, steep and rugged, with Outlook Hill contributing high natural character to this part of the south coast. Whilst the facilities of the coast reduce the natural character inland the natural character and landscape value is considerable.

[236] Mr Anstey considers both the landform and its vegetation in this area reflects its harsh coastal influences. He considers the combination of a coastal edge with dramatic rocky outcroppings, terraces and steep faces rising rapidly to high and exposed ridges confers a very high natural character on all but minor parts of this unit. He also considers that the ridges and valleys north of the Rough boundary between coastal dominance and coastal influence zones are directly impacted upon by these harsh coastal influences. These areas relate to those associated with the Cook Strait Cable. Otherwise he rates this area's natural character as high even though he recognises Cable Bay has been substantially modified.



[237] Mr Rough considers the very significant power transmission facilities and the remains of the old wharf constitute existing sporadic use and development on this coastline – with which we agree. As such, it is an appropriate location to site the temporary landing facilities for the turbine components. The roading modifications necessary to transport these components on the narrow access road are to be mitigated. Any adverse effect has to be weighed against the alternative of trying to bring the turbine components in by road, an option which we consider has been very appropriately rejected by Meridian in this case.

[238] We see Oteranga Bay as a working bay – the only seriously modified area in the whole coastal landscape from the Makara Beach Ohariu Bay Far Point to the Karori edge of Tongue Point. Such modification is offset by the substantial regeneration in the general catchment and, to some extent, by the fact that no turbines or works other than the roading modifications are proposed directly on this unit.

Tongue Point

[239] The termination of the Terawhiti-Makara ridge in the south is above a series of raised marine terraces at Tongue Point. These are part of a series of uplifted marine terraces of recognised importance between Oteranga Bay and Tongue Point. A number of H turbines are to be located on the ridge above this area, H28 and H29 particularly. They are, according to Mr Hudson, the only turbines of the entire farm that are fully visible from the coast if one ventures to the end of the rocky outcrop of Tongue Point.

[240] While H29 lies 200 metres inland of the coastal environment boundary, in Mr Hudson's opinion both H28 and H29 turbines have a dominating effect on the natural character of the coastal environment. H28 is identified as located however within an area of the coastal environment as having only moderate to high natural character by Mr Rough because of its cultural modification (homestead/farming).

[241] Mr Rough then examines Tongue Point itself, as turbines H28 and H29 will be dominant in their setting and will have an adverse effect on the natural character of the area. The closest turbine (H29) will be 1.5km away from Tongue Point and at an elevation of 290 masl. While these turbines will be a strong visual focus and have a substantial effect on the natural character of the coastal environment at Tongue Point, Mr Rough considers it will be a very localised effect (see Rough Simulation 24, *4.36km off Tongue Point*). And to the west of

the Point, but not beyond the southern end of Outlook Hill, these turbines will be seen in the context of a quite modified landscape with pasture, shelterbelts, a woodlot, dwellings and farm buildings and vehicle tracks apparent. The turbines' effect on the natural character of the coastal environment, in the context of a landscape whose surface has been quite modified, will be substantially less than the situation at Tongue Point itself. Consequently, Mr Rough is not of the opinion that a very localised adverse effect of these turbines warrants them being deemed as inappropriate in terms of effects on the natural character of the coastal environment.

[242] Mr Brown from his assessment is concerned that both the earthworks and turbines of the H24 – H29 series would have significant effects on this part of the coastal environment. It is his view contrary to that of Mr Rough's that the cultural dimension is minimal in its immediate context on Tongue Point.

[243] Mr Anstey also identifies Tongue Point as having a very high natural character and he considers H24 – H29 would have significant adverse effects on what he considers part of an outstanding natural coastal environment. Mr Anstey considers the rocky coastal edge and terraces with the steep broken and dramatic backdrop of coastal hills confer a very high natural character on this southern area. He argues (as with Oteranga Bay) that the coastal environment extends further inland than the Rough zone boundaries define. Because the two main valleys are oriented to the south, strong coastal influences extend well inland, as with the Waiariki Catchment.

[244] Ms Lucas also considers Tongue Point as a significant contributor to an outstanding coastal landscape, but on a comparative basis with the other delineated landscape areas identified earlier, she considers the modification and buildings on Tongue Point are considerably greater and more visible than those for the coast from Ohariu Bay to Terawhiti Hill. She considers also the intactness of the vegetative cover is least at Tongue Point. Nevertheless, because of the scale of the turbines, because they are in the skyline silhouette and because of their kinetic character Ms Lucas considers the natural character of the site would be significantly reduced as they would distract and detract from the legibility of the important geomorphic values of the site (the extensive marine terraces).

[245] Mr Rough points out that of the turbines H24 – H29 only H29 is in or on the boundary of the coastal environment. He understands Mr Anstey to be saying that the earthworks of H24 – H29 have effects on the coastal environment because they will be visible within it. Mr Rough notes however that no earthworks from the H series would be seen from the coastal environment except perhaps from its upper boundary on private property.

[246] We considered the issue of Tongue Point at some length, partly because of the conflicting evidence which emerged.

[247] We agree there has been some modification to the natural character of the site. Whether this modification already overwhelms the natural character of the site is an issue, and whether the two identified turbines, would further detract from the legibility of the extensive marine terraces and the obvious natural character quality of this environment are the issues. But we note the project will have no significant geological effect on Tongue Point.

[248] From the coast (Rough, Simulation 24 *4.36km off Tongue Point*) the Tongue Point landforms demonstrate a particular natural character due to the smooth horizontal plains of the marine terraces in the content of a background of hill slopes and downward folding ridgelines covered largely in rough pasture. The terraces, covered in smooth pasture and some (minor) structures, contrast with the background of hills and knobs behind. The area is also the site of a seal colony which has its own natural character values.

[249] In Mr Rough's photographic evidence (Sheet 9 *Tongue Point* Photograph 1 *Looking southeastwards around the coastline northwest of Tongue Point*) the homestead/ farming modifications of the Old Terawhiti Station fade into insignificance when the scale of that unit is taken into account. In what we consider is a fair representation of the site, the legend on the document states *Turbines H28 and H29 would appear on the skyline above the hill/knoll above the station.* In Rough Photopoint 50 *Tongue Point Before and After*, Mr Rough considers that H28 and H29 will be dominant in their setting and will have an adverse effect on the natural character of the area. While simulations help understand the project, such aids, as Ms Lucas points out, make such structures as the turbines appear more distant and flattened than they really are.

[250] To avoid a dominant effect on natural character, we concluded H29 should be relocated into an alternative position as seen Rough Sheet 10 *Simulations of Turbine H29 at Tongue Point from South – West of the Point* (H29 Alternative Position). H28 does not intrude to the same extent. It was of some interest to note that Ms Lucas originally considered H28 and H29 would be appropriate in this setting which demonstrates the fine lines which go to make up landscape judgements in this case.

Findings

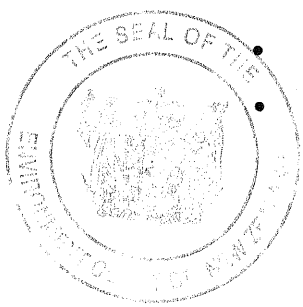
[251] Apart from:

- the two small settlements at Makara Beach and Smith's Bay;
- the modifications to the rural hinterland adjoining the coast associated with farming activities, plantation planting, and the complex land cover use;
- the gun emplacement area;
- the modifications in Oteranga Bay;

we find that the predominance of natural character increases moving south from Ohariu Bay to the south round to Tongue Point. Roads and tracks are present but are relatively narrow and follow the ridgelines or valleys in the main. Their impact currently on the series of spines which radiate off the main ridges is slight.

[252] We accept from Ohariu Bay southwards natural character is for the most part expressed in:

- strong landforms and their scale;
- the immediacy of the marine environment with its remote, sheltered, and not so sheltered bays;
- the rugged rocky/beach shorelines, streams intercepting and driftwood spreading;
- the revegetating slopes, gullies and strongly coastal valleys;
- the dominant forces of the waves, tides and winds;
- the present and untroubled wildlife;
- birds;
- the sense of wildness and isolation;
- the fish life which accesses the coastal streams to spawn;
- seal haul out.



[253] Any development in the coastal area, apart perhaps from the buildings and structures in Oteranga Bay, has been very much constrained and there is little sense of cultural dominance except as you move eastwards on the rural hinterland. The pasture lands provide a *difference* in vegetation but one that is not necessarily adverse, for the reversion to indigenous shrubland which is occurring over some of the site, particularly the valleys, ameliorates and softens many of the more obvious scars.

[254] We note it is difficult in a regenerating situation to determine the extent of natural character at any one point in time. For we are also taking into account future generations who will undoubtedly benefit from the work that is being undertaken to encourage as much of this coastal environment to return to a highly natural state as possible – or a return to farming of the whole site if that is more viable. Meanwhile we note much of the site is also to remain as working farms.

[255] We leave the last word with Mr Brown:

> *Turbines and many of the cuts associated with roads (particularly the K and H roads) would have significant and adverse effects on the character of the coastal environment. Turbines and roads would introduce a cultural dimension to the coastal landscape which would completely dominate the existing natural character. These effects would be of most significance, and more than minor, in the case of turbines located relatively close to the coastal edge, and in areas with a predominantly high natural character and a minimal cultural presence.*

[256] Thus the K series and the H series have been identified by at least three landscape architects as significantly adverse on natural character of the coastal environment but we consider their intrusion to be less than those we identify below – at least for the K series.

- ***Visual Amenity of the Coastal Environment***

[257] One of the most obvious effects from this project will be that on the visual amenities of those who value a largely structure-free coastline, with high natural character, landscapes and natural features.

[258] Mr Brown considered that while it is agreed that the visual primacy of the coastal landforms and seascapes would be largely maintained, and the rural nature of much of the

local landscape would help, at least to some extent, limit effects on amenity, the windfarm would still be highly influential in views from around the gun emplacements and walkways, especially in relation to views down to the coast toward Terawhiti Hill. The fundamental character of that part of the coastal experience would therefore be changed appreciably, regardless of the finer grained mosaic of pasture scrub, regenerating bush and exotic trees with farm buildings, water tanks, fences … already apparent. He notes *this suggests a significant level of effects.*

[259] Mr Rough has this to say:

- while turbines will not be visible from the Makara Beach settlement, they will be clearly visible from nearby Smith's Bay (B02 and B03);
- two particular turbines will be seen from various locations up the walkway (B02 and B03);
- from at sea between Te Ikaamaru and Ohau Bays (Rough Simulation 21, *1.43km off point between Opau and Te Ikaamaru Bays*) a considerable number of turbines will be clearly visible in their entirety spread out along the skyline from the vicinity of the gun emplacements above Opau Bay;
- the roof of the observation post at the gun emplacements, offers the most comprehensive publicly accessible and land-based views of the windfarm, half of it rural in character and half of it coastal; Rough Photopoint 12 *Gun Emplacements Before and After* gives, in Mr Rough's opinion, a potential view of fifty three turbines, the closest of which is 517m away seen from that location; Mr Rough acknowledges that where there is an apparent concentration of turbines in this sector the windfarm will have a substantial effect on visual amenity values and views to the southwest.
- structures would not be visible from Warehou Bay but when walking southwards around the coastline from Makara Beach, turbines would come into view at the promontory which defines the northern extent of Opau Bay; thirty turbines would be visible in varying degrees (Rough Photopoint 11 *Opau Bay Walkway*); many of these will disappear from view as the walker moves on due to the screening effect of the escarpment;
- several turbines will be visible where Opau Stream and Makara Walkway enter Opau Bay, and will be in close proximity; these will have a substantial effect

on visual amenity values in this section of the Makara Walkway because it is a very focused view;

- the cut and fill involved in the upgrading of existing roads and construction of new ones will be some of the most substantial; it is anticipated that because of the scale of the landscape in which they will occur (Rough Sheet 65 *Road Earthworks Gun Emplacements*), and the broad context of the view in which they will be seen together, with mitigation measures proposed their overall effect will be moderate;
- Tongue Point, the habitat of a seal colony, is principally accessible by journeying around the coast on foot, by the use of quad bikes or 4 wheel drive vehicles; generally the coastal escarpment will obscure visibility of the windfarm's turbines but from out on Tongue Point turbines H28 and H29 will be visible on a small hill above the terraces and the blade tips of two other turbines (H26 and H27) will also appear on the skyline; turbines H28 and H29 will also be seen slightly to the west of Tongue Point where there is a break in the coastal escarpment;
- at sea, from opposite Tongue Point, fourteen turbines would be visible with six visible almost in their entirety – others with their rotors or blades appearing on the skyline;
- from the air, following take-off to the northwest on the Wellington to Auckland flight path and on a southerly approach coming into Wellington (sometimes), the windfarm would gradually come into view from the windows of the aircraft; Rough Simulation 25 represents a view from an altitude of 785 masl, 9.18km northeast of Quartz Hill; this particular viewpoint reveals the most comprehensive view of the windfarm that is obtainable taking off from this location and illustrates turbines spread along the ridgelines from the vicinity of Tongue Point to above Ohariu Bay; but many turbines are seen against a backdrop of either Outlook Hill or Terawhiti Hill.

[260] Mr Rough fairly identifies that the site's main ridgelines and hilltops are variously visible from southwest Wellington's coastal environment. He acknowledges from on the coastline they are often visible from beach areas, in bays, where views up valleys behind beaches are afforded, and they have visual amenity value in defining the extent of what is the coastal environment. Around the coastline, away from the bays however, views of the site's

main ridgelines and hilltops are generally obscured for the viewer by the coastal escarpment. He nevertheless acknowledges an extensive view of the windfarm will be obtainable from the gun emplacements from sections of the Makara Walkway, and when looking up at the Opau Stream, that a number of turbines overlapping are more intrusive than single ones. And he acknowledges that there can be an (adverse) substantial effect in different situations in that it has a lot to do with the context of the view. And he acknowledges that if the B, D and E series turbines were removed, the effect of the windfarm *would probably be down to moderate in the southwest direction* which indicates their collective visual impact is significant.

[261] There is little doubt this mass and scale of turbines from that location when seen in their entirety will command a significant presence. The turbine movements will always be saying *look at me* – as Ms Lucas identifies – and there will always be some visual association from one turbine to another given their height and density. The movement of the speed of the turbines is such that the eye will be constantly attracted.

[262] From the Smith's Bay coast, Ms Lucas considers the three B series turbines located well above Makara Beach would create visual complexity on this coast with the B02 and B03 turbines appearing as very large, thus dominating the coastal experience of that area; Mr Rough also identifies that from Smith's Bay B02 and B03 turbines would be prominent features in the coastal environment which otherwise lacks manmade features.

[263] The B series, particularly B02 and B03 also appear to us to be turbines which have a major impact on the visual amenity of the coastal experience as depicted by Dr Barr at the beginning of the Makara Walkway; their impact is clearly seen in the Truescape attachments to Dr Barr's Further Evidence, namely *Walkway above Pa Site* (*400m distant from gun emplacements*) and *View from water off Makara Beach*. Apparently these views were chosen by Meridian because they represent public spaces from which the turbines can readily be seen – that is they are focal points in the view[17]. We concluded the visibility of B02 and B03 on the Smith's Bay residents will be adverse when seen in an environment which has little visual intrusion on its naturalness. And we concluded also that they would be significantly visually

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[17] There was some discussion between Ms Lucas and Mr Rough about the value of the Truescape Simulations with Mr Rough of the opinion that good photo-simulations such as Truviews represent reality to a high degree with Ms Lucas concluding the simulations do not do this. Mr Rough records that the landscape caucus agreed that simulations do not entirely represent reality, that they have limitations, and that they are a tool to help understanding the proposal. We consider they are <u>one</u> of the tools that assist understanding.

intrusive for those visiting the gun emplacement for recreational purposes or beginning and ending the round trip from the Makara Walkway – or for some then will be the feature they have come to see.

[264] The rest of the turbines will otherwise be seen from the gun emplacement in the context of very strong coastal and rural landscapes – see Rough Photopoint 11 *Opau Bay Walkway Before and After* and Photopoint 12 *Gun Emplacements Before and After*. While they appear at their most dense from this location, any overlapping will fade as the walker moves on. And while they are visible, it does not automatically follow that they will be offensive to the viewer. Mr Rough points out that modern turbines have a functional elegance which gives them a sculptural elegance also. Some will perceive them to be so in this wide rural landscape. Otherwise, as Mr Anstey identifies, particularly in northern parts of the site, the structures will be introduced into a context which already has some utility structures and cultural elements. For such viewers the site is absorbed within a wider setting of farmed landscapes and production forest.

[265] Nevertheless, we acknowledge that others will find the turbine structures out of scale, alien, and significantly disruptive of what they have known or know of the area, particularly if turbines are located at focal points in the view, and in settings with high natural character against the ocean or Cook Strait backdrop, particularly in the southwest of the site.

[266] From off the western coastline (Rough Photopoint 21 *1.43km off point between Ohau and Te Ikaamaru Bays*), Mr Rough considers the windfarm will have its most significant effect on visual amenity values when viewed from 1 – 3km away. This is supported by a table introduced in Mr Anstey's evidence which records *At 1 – 3 km turbines are highly prominent and the potential for visual effects is substantial. Prominence* is defined in the same table as *the feature is clearly visible, and forms an important but not a defining element of the view.* That was our conclusion from this offshore location acknowledging that Photopoint 21 tends to flatten the landscape and the turbines will be seen closer[18]. Ms Lucas in her rebuttal evidence makes the point that the Table Mr Anstey refers to is based on smaller turbines than Meridian proposes here and are for a different location (Tararua 3). While those factors will make a difference, we note Mr Anstey's opinion that visual effects when seen from a distance

[18] Anstey EIC p 28 citing *Table: Visual Impacts in relation to viewing distance* produced by Boyden Evans for Boffa Miskell. See also para [111] of this decision.

will have a moderating effect. Even so, the extra effect the extra 25m on the Project West Wind turbines will have should make them even more dominant in the landscape.

[267] In Lucas attachments 11 and 12 *Catchment Locations* related to Te Ikaamaru Bay and Ohau Bay, turbines F04 and N03 present as within the coastal dominance zone in which they are not actually located. This is because their scale dominates the natural character of the coastal environment in this location, and therefore reduces its visual amenity. Mr Anstey also considers both the earthworks and the turbines will be visually dominant and intrusive from Te Ikaamaru Bay and its southern headland. He considers F03 and F04 should be deleted while the N series would be visually dominant from within Ohau Bay and the southern headland, and need to be removed too. But such opinions, as the other landscape architects point out (apart from Ms Lucas), are ameliorated by the fact that when looking inland from the beach margins of Opau or Te Ikaamaru Bays, the bluffs and escarpment that frame and enclose the coast – a key natural feature in their own right – would substantially and in places totally obscure the windfarm turbines. In this context we consider turbines F04 and N03 only will have an adverse visual impact.

[268] In this area too Ms Lucas observes that the K series turbines will be very dominant on the ridgeline above and that even from 3km off shore, they will have highly significant effects but have been downplayed by Meridian because of a lack of visitor numbers. We consider the days are long gone when the visual significance of a view can be written down because only a few people see it. A significant view remains just that – regardless of how many people may view it. Nevertheless, we consider on the Boyden Evans Table (discussed at para [111]) at 3km distance the views will only be moderately adverse.

[269] At Tongue Point H28, H29 have a strong visual focus in this location because they are highly visible from a break in the coastal escarpment slightly to the west of Tongue Point. But H28 is further away than H29. As mentioned, H29 should be relocated within its 100m envelope. Mr Anstey considers that the H series further back along the ridge would be dominant from the sea but their visual effects from the coastal edge are difficult to assess.

[270] Our conclusion from all the evidence on Tongue Point is that the remainder of the H series, depending on the light, will be a distant view within the more immediate and broader landscape with its own significant visual interest.

Findings

[271] We find in terms of visual amenity of the coastal environment that:

- Meridian took mitigatory steps to delete the T series turbines from Terawhiti Hill and from some other locations which had adverse effects;
- some turbines still cause significant adverse visual amenity effects;
- some coastal locations cause greater adverse visual effects than others;
- there is a large variation in people's experience as to whether turbines are offensive in the landscape or not;
- H29 should be relocated within its 100 metre radius to be less intrusive.

- ***Section 104(1)(b) – Planning documents***

[272] There are no national policy statements in the strict terms of s104(1)(b)(i), but there are documents such as National Energy Efficiency and Conservation Strategy (NEECS) which we discuss in the course of reviewing s7 factors.

The New Zealand Coastal Policy Statement

[273] *The New Zealand Coastal Policy Statement* was raised by several witnesses. Essentially the policies of the NZCPS seek to:

- preserve the natural character of the coastal environment and protect it from inappropriate use and development (Policy 1.1.1);
- preserve areas of significant habitat and indigenous vegetation (Policy 1.1.2);
- provide for the protection of significant landscapes and landforms (Policy 1.1.3);
- provide for the restoration and rehabilitation of the natural character of the coastal environment where appropriate (Policy 1.1.5);
- provide for the protection of coastal areas of significance to tangata whenua (Policies 2.1.1 to 2.1.3);
- recognise the need to avoid significant adverse effects (Policies 3.1.1 and 3.2.2);
- recognise the importance of open space to the amenity values of the coastal environment;

- identify recreational and historic areas, landscape features, and areas of cultural significance, and seeks to provide appropriate protection for these features (Policies 3.1.2 and 3.1.3);
- ensure that the cumulative effects of activities are collectively not significantly adverse (Policy 3.2.4);
- provide for the maintenance and enhancement of public access to and along the coastal marine area (Policy 3.5.1 and 3.5.2);
- take into account the principles of the Treaty of Waitangi (Policy 4.2.2).

Discussion

[274] In discussing landscape issues Mr Rough acknowledged that the proposal would have unavoidable impacts on the natural character of the coastal environment – in terms of Policy 1.1.1. There will be places such as Opau Bay where, viewed from the shoreline or the water, some turbines will appear to be on top of the coastal escarpment. They will also represent the intrusion of a man-made element where none presently exist. He points out however, that the landcover in what he describes as the coastal dominance and coastal influence zones has long been highly modified (and to that degree *compromised* in terms of the Policy). He considers it of some significance that the areas of highest natural character – Terawhiti Hill and Outlook Hill – will be kept free of turbines. Mr Alister Aburn, as Meridian's planning consultant, considers that there will be adverse effects on the coastal environment, but that these would not be so significant so as to constitute an inappropriate development (which is a factor in s6 matters).

[275] Mr Hudson for the WCC agrees with the view that there will be significant effects on natural character of the coastal environment (but in his opinion only at Opau Bay and at Tongue Point). It is Mr Warren Ulusele's view, as Acting Planning Group Manager for the WCC, that the proposal will create adverse effects on the natural character of the coastal area and open space amenities of the site. But he considers the scale of the site, which to a degree allows these large structures to be "absorbed" into the environment, and the placement of the turbines to the landward side of the first the dominant ridges will assist to mitigate these potential effects.

[276] Mr Robin Delamore, consultant planner for the Societies, basing his assessment on Mr Anstey's findings, refutes Mr Aburn's argument and conclusions and considers that the

South West landscape will be significantly modified by the proposal with some parts dominated by structures, and completely out of keeping with its natural character and remote recreational attributes.

[277] Neither Mr Hudson, nor Mr Aburn, thought that the development would be *sprawling* in terms of Policy 1.1.1(a), with Mr Hudson saying that it is actually *concentrated* in a district wide sense. Ms Lucas observes that there is a large *thicket* group to the right, then a central one and then some staggered ones off to the left. Mr Delamore considers the proposal would be *sprawling* and *sporadic*, with the turbines *...scattered at irregular intervals in or adjacent to the coastal environment.* It is also, in his view, incompatible with other Policies, such as 1.1.1(b) and (c), and 1.1.3(a). He sees this coastal environment as not culturally compromised to any great extent, and the proposed development therefore as inappropriate. Thus whether the proposal is appropriate or not becomes a key question.

[278] Taking up Mr Rough's theme that the site has been heavily modified over 100 years through fire and farming and therefore does not demonstrate substantial natural character, we can only reiterate our findings of fact that:

- while not pristine, the site contains substantial regeneration of indigenous shrublands of what Mr Chris Horne, ecologist for the Societies, identifies are the descendants of the original native species on the site, these are successional;
- the coastal interface is highly natural with large areas of grey scrub present (grey scrub is one of the predominant shrubland communities at the site and has been in serious decline);
- that overall the cultural modifications to the site when considered in terms of the coastal scale are insubstantial.

[279] We doubt that the drafters of the NZCPS had windfarms in mind when using the term *sprawling*. More in contemplation would have been, we imagine, residential and recreational development which the policy sought to group or cluster in parts of the coastal environment that had a lesser natural character. By their nature, these windfarms because of the turbulence factor, and certainly a windfarm of 70 turbines constrained by the technical issues Meridian identifies, cannot necessarily be grouped or clustered:- they must be spread across whatever terrain they occupy. Using the term literally, we must agree with Mr

Delamore that Project West Wind would be essentially a *sprawling* development but we think to good purpose because the turbine locations leave the rural land with open space away from the ridgelines in order utilise the seriously efficient windpower found on the ridges. It is to be remembered that Policy 1.1.1 speaks of encouraging *...appropriate ... use or development.* What is *appropriate* is a value judgement, to be arrived at by weighing the values of the particular coastal environment with the positive and adverse effects that can be foreseen from the proposal. Mr Ian Leary, planning consultant to the Guardians and the Trust for example, makes no express recognition in his evidence to the central importance that electricity has in terms of providing for the region's social, economic and cultural wellbeing. These are positive benefits which must be weighed up in any assessment. We return to this theme in discussing Part 2 issues.

[280] As to Policy 1.1.3, most of the issues arising from this Policy have already been addressed and we have found protection of some of those factors may require relocation of a number of the turbines. Otherwise we consider the visually or scientifically geological features will largely be protected, that there will be modification of the collective characteristics which give the coastal environment its natural character, including its scenic areas – but the wildness of the coastal/sea coastal margin will not be interfered with except in a temporary way at Oteranga Bay.

[281] Insofar as there are issues about significant indigenous vegetation, and significant habitats of indigenous fauna within the true coastal environment, or other issues arising under the balance of Chapter 1, or any of the issues arising under Chapters 2, 3 and 4 of the Coastal Policy Statement, we discuss them under their various heads elsewhere.

[282] As to Policies 3.5.1 and 3.5.2 the proposal will not reduce the public's ability to access the coastal area. The site is privately owned and no turbines will be located within areas where public access is provided by way of easements or unformed legal road. Public access is secured by the deletion of condition 93 of the WCC decision which essentially required Meridian to provide open access to the site after the project was commissioned. The agreed position of the parties is now that there is to be an addition of a bullet point at condition 89 which relates to the West Wind's recreational functions and will read:

> *Assess the parameters of pedestrian and cycle access to Opau Bay.*

Note: This leaves open the route to be used but confirms that some access for pedestrians and cyclists is intended.

Otherwise we assess recreational access more fully under the RPS.

Finding

[283] It seems clear that the coastal environment here has a natural character which will, inevitably, be adversely affected by this proposal. That is not the end of the inquiry however, and we return to the issue of inappropriate development later.

Regional Policy Statement

[284] Chapter 7 *Coastal Environment.* Mr Rough describes Objective 1 of the *Coastal Environment* section of the RPS as seeking to preserve the natural character of the coastal environment. This is achieved through its protection, namely:

- the protection of nationally and regionally significant areas and values;
- the protection of the integrity, functioning and resilience of physical and ecological processes in the coastal environment;
- the restoration and rehabilitation of degraded areas; and
- the management of subdivision, use and development, and allocation of resources in the coastal environment, so that adverse effects are avoided, remedied or mitigated.

The relevant policies expand on these issues.

[285] Chapter 10 *Landscape and Heritage.* The Landscape and Heritage section contains the following objectives:

- protection of nationally and regionally outstanding geological features, landforms, soil sites and other natural features for the Region from inappropriate subdivision, use and development;
- avoiding, remedying or mitigating the adverse effects of human activities on the Region's natural and physical resources so that the quality of any regionally outstanding landscape which those resources contribute to are maintained;
- recognising, conserving and sustaining for the future the cultural heritage of the region; and
- maintaining and enhancing the attributes of natural and physical resources which provide for regional recreational opportunity.

The section has several policies which indicate *management* of landscapes for use rather than preservation is appropriate such as to give effect to the following matters when planning for and making decisions on subdivision, use and development in the coastal environment:

> Protection of the values associated with nationally or regionally outstanding landscapes, seascapes, geological features, landforms, sand dunes and beach systems and sites of historical or cultural significance, including those listed in Tables 9 and 10.
>
> Protection of sensitive, rare or unusual natural and physical resources, habitats, amenity values and ecosystems which are unique to the coastal environment (including estuaries, coastal wetlands, mangroves and dunes, and their margins) by avoiding, remedying or mitigating adverse effects so as to preserve the natural character of the coastal environment.

[286] The RPS records that one of the methods identified to promote the sustainable management of the Region's landscape and heritage resources is the preparation of a regional plan for the outstanding natural features and landscapes of the region [Method 1]. Mr Rough confirms that during 1996-1997 the GWRC prepared a proposed Regional Landscape Plan which identified landscapes and features of both outstanding and regional significance. For a number of reasons, including aspects of its methodology, the plan was withdrawn. It did not identify any features on the Project West Wind site as outstanding. This is consistent with the information contained in the RPS, which states that nationally and regionally outstanding landforms and geological features are listed in Kenny and Hayward's *Inventory of Important Geological Sites and Landforms in the Manawatu and Wellington Regions*. Those to which Policy 2 under this chapter applies are those which have a rating of A to C and a vulnerability assessment of 1 and 2. Specific references in Kenny and Hayward to landforms or geological sites are:

- Quartz Hill uplifted peneplain: importance C and vulnerability 3
- Shepherds Gully Fault 1: importance C and vulnerability 3
- Shepherds Gully Fault 2: importance C and vulnerability 3
- Terawhiti gold mining sites: importance C and vulnerability 2

Putting to one side Quartz Hill, which we have discussed elsewhere, and Shepherd's Gully which is not in issue, of the four items, only the Terawhiti gold mining sites potentially comes within the scope of Landscape and Heritage Policy 2, which is:

> To avoid, remedy, or mitigate the adverse effects of subdivision, use and development on regionally outstanding landscapes, and nationally and regionally outstanding landforms, geological features, soil sites, and other natural features.

[287] Mr Aburn explains the reason for saying that the gold mining sites *potentially* come within the scope of Policy 2 is because of the note in the RPS confirming that the policy does not cover *any buildings or other structures as these are not natural features.* Thus it seems in

terms of the RPS objectives at least heritage mining sites would have to fall within geological features/soil sites to be within scope. The protection of the resource and mitigation of any adverse effect which arises from the project on the heritage mining sites are addressed under Part 2 Matters.

[288] A relevant Anticipated Environmental Result is to preserve and protect the coastal environment from the adverse effects of inappropriate use, development; and one where appropriate sites are protected – and degraded areas ones restored. The key question for this decision is whether the project is an appropriate use of the resource and whether the appropriate sites are protected in the course of the project.

[289] Table 8 *Sites of National or Regional Significance for Indigenous Vegetation or Significant Habitats for Indigenous Fauna* was not cited to us but we note the Makara Stream Estuary is identified as regionally important, and that is not affected.

[290] The witnesses note that of the items listed in Table 9 of the RPS (*Landscapes and Seascapes of National or Regional Significance*) those situated within the site are:

- the coastal escarpments and small beaches from Paekakariki to Owhiro Bay which include small bays;
- Cape Terawhiti.

The first are not affected by physical works and the second is protected because no turbines are located on the Cape after Meridian's initial shaping exercise.

[291] The only item in Table 10 of the RPS *Outstanding Natural Features, Landforms and Sites of Historical Importance* within the site are the Tongue Point marine terraces which is listed as a nationally outstanding geological feature. Several planners, including the WCC's, were critical that Tongue Point will be influenced by several turbines although set back from the coast itself and not located on the marine terraces themselves.

[292] As to regional recreational opportunity under the *Landscape and Heritage*, the appellants expressed concerns about recreation and tourism in respect of:

- the Makara Regional Park Concept;
- the Makara Walkway;
- the Coastal Trail from Makara to Red Rocks/Owhiro Bay;

- Makara Beach visitor numbers;
- future visitor and recreation use of West Wind if the windfarm is constructed.

[293] We were told the submission process indicates there is strong support for recreation and tourism use of the windfarm, particularly from improved access. One of the Anticipated Environmental Results of the RPS require that regional recreational amenity values are maintained and enhanced.

[294] The area proposed to be the Makara Regional Park is in private ownership. We are advised the WRC has not formally approached the site's owners.

[295] There was concern from a number of the appellants' witnesses about the effects of turbines on recreational use of the Makara Walkway. As Mr Bamford, recreational adviser to Meridian and Mr Rough states, many of the turbines will be visible from the gun emplacements looking south, from the Opau Bay area and on the start track to Makara Beach but they will not be visible from Makara Beach itself or from the initial coastal section of the walkway. Mr Bamford considers as a result that the current recreational use will be maintained in the most frequented places and that the walkway users will have continued access, subject to the normal farm constraints. Mr Bamford's evidence was confirmed on our site visit, and apart from visual amenity impact, we do not consider there will be a significant detrimental visual impact on the Makara Walkway users except from the visual impact of B02 and B03 particularly and from turbines in other discrete locations. But some of the views will intermittently be obscured by the escarpments.

[296] As to the Coastal Trail from Makara to Red Rocks via Quartz Hill and Terawhiti Station, this has been mooted since the early 1900s but large sections of it have yet to be established. It will require consent from the landowners involved and will also require feasibility studies on costs and management implications of the proposal before the matter is advanced any further. This will require a consensus from all parties of which there are a considerable number.

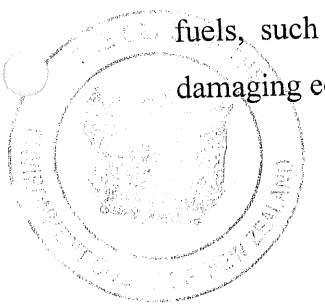
[297] With respect to visitor numbers, there is uncertainty. The Department of Conservation estimates 20,000 visitors to the beach area per year (Mr Bamford is comfortable with this) while Dr Hugh Barr estimates 36,000, with use of the two farm areas for recreation

limited by fewer than 1,000 visitors a year. Either way it is clear that the area is popular with walkers. But on the evidence before us we do not expect the Meridian proposal will diminish any of the recreational opportunities currently offered. This coastal landscape is on such a grand scale and we are mindful that on the evidence many members of the public are not adverse to the presence of windfarms.

[298] As to future visitor and recreation use of the West Wind site, if the windfarm is constructed Meridian's approach has been to mitigate some of the impacts of its development on the recreational users of the area:

- Mr Bamford advises that four possible turbine sites (A04, A05 and C01 and C02) and their rejection in the scoping process took into consideration possible recreational impacts on walkers;
- Meridian and the Terawhiti Farm Company have agreed to provide increased access to appropriate parts of the windfarm; they will assist in public access to and use of the public coastal areas adjoining Terawhiti Station and Meridian land;
- the WCC's Conditions of Consent (Conditions 89 – 92) detail that a 'West Wind Recreational Group' is to be established to identify and develop compatible recreation and visitor opportunities – such as mountain biking, visitor access to the mine sites, pig hunters access, adventure runners etc; we are advised Meridian is prepared to fund and promote this; as a condition of consent we have no reason to believe that formation of this group will not proceed.

[299] Chapter 12 of the RPS relates to *Energy*. Objective 1 recognises that by itself energy efficiency is not sufficient to sustain the beneficial services provided by energy resources or to successfully manage significant environmental effects that arise from energy production and use. Objective 2 seeks to sustain social and economic well-being by helping to prepare for the time when fossil fuels are in short supply. To sustain well-being, the objective points to the development and use of environmentally benign and renewable energy sources. Objective 3 seeks to avoid, remedy or mitigate local and global effects of energy production, transportation, transmission, conversion and use, particularly the effects of the use of fossil fuels, such as by changing air composition and quality, reducing water and soil quality, damaging ecosystems, affecting visual values and putting emphasis on public health.



[300] All of these objectives are met if conditions of consent are taken into account with the exception of the mitigation of visual values.

Finding

[301] Many of the objectives and policies of the RPS are achieved by the proposal or not inconsistent with them. Meridian's scoping exercise to avoid or mitigate adverse effects on the character of the environment have to some extent achieved a more positive end than might have occurred. The proposed and amended conditions of consent further ameliorate affected values, while the Court's concerns could be met by the relocation of a number of identified turbines. A particular focus must be on the relief the project provides for the region – that is – Wellington's current dependency on remote non-renewable electrical energy generation. This project provides reassurance to the region as to the long term viability of its economic and social well-being.

[302] We consider that the proposal meets all these objectives with the exception of avoidance of effects on visual amenity values created by the turbines in the landscape.

Wellington City District Plan

[303] It is common ground that, with the exception of two small areas insignificant to the resolution of the appeals, the Proposal's site is zoned *Rural* in the District Plan, which has been operative since 2000.

Objectives

[304] The introduction to the Rural Area section of the Plan records that the principal driver of change in the area is the demand for rural/residential living and lifestyle blocks. The relevant objectives for the Rural Area are:

> 14.2.1 – To promote the efficient use and development of natural and physical resources in the Rural Area.
>
> 14.2.2 – To maintain and enhance the character of the Rural Area by managing the scale, location and rate of new building development.
>
> 14.2.3 – To maintain and enhance the amenity values and rural character of Rural Areas.
>
> 14.2.5 – To maintain and enhance natural features (including landscapes and ecosystems) that contribute to Wellington's natural environment.
>
> 14.2.6 – To maintain and enhance the quality of the coastal environment within and adjoining the Rural Area.

14.2.9 – To enable efficient, convenient and safe access for people and goods within the Rural Area.

14.2.10 – To promote the development of a safe and healthy City.

14.2.11 – To facilitate and enable the exercise of tino rangatira and kaitiakitanga by Wellington's tangata whenua and other Maori.

[305] Mr Aburn for Meridian identifies the following from both the objectives and policies and other provisions of the plan, which is an effective summary:

- subdivision and development in the Rural Area is limited;
- natural elements which give the Rural Area its character should be maintained;
- rural amenity can be adversely affected when ridgelines and hilltops are altered by earthworks, or have buildings or other structures sited on them;
- farming and residential activities predominate in the Rural Area, but a limited range of non-rural activities can be appropriated, provided that adverse effects on rural character and amenity are avoided, remedied or mitigated;
- the Rural Area is a working environment and as such will be subject to noisier rural activities;
- significant natural features of Wellington's rural landscape are to be protected;
- the retention of existing native vegetation is to be encouraged;
- the character and public amenity of the coastal environment is to be maintained and enhanced;
- rural roads are to be managed to maintain access and safety;
- sites and precincts of significance to tangata whenua and other Maori are protected from inappropriate development.

[306] Some of these issues arising, namely those in Objectives 14.2.3 – 14.2.6 and 14.2.11, we assess in depth elsewhere. We prefer to reflect here on more general matters that emerge from the zoning of Makara as *Rural* in the plan, together with the existence of a windfarm on the scale of the Meridian project in the proximity of a rural residential community.

[307] Mr Delamore, correctly in our view, is of the opinion that Objective 14.2.1 as primarily one of urban containment. The policies which follow it relate primarily to ensuring that urban sprawl is limited and that rural subdivision effects are controlled. Thus, the objective is not one that promotes the use of wind power specifically. But efficient use of resources under the District Plan is not about maintaining agricultural land uses either even

though rural activities are defined in the plan as meaning primary production including horticulture, viticulture and pastoral farming. Certainly the plan promotes rural activities by making them permitted, but otherwise, rural production is not one of the important identified matters under the objective and policies.

[308] It is fair to say that development of the Rural Area by a windfarm of this scale does not appear to have been specifically anticipated in the relevant provisions of the District Plan (ie until Plan Change 32 was introduced) any more than it did in the NZCPS.

[309] The plan records that the primary force urging changes in the way this area is planned for is the demand for rural/residential living and lifestyle farming blocks. It adds that in a limited number of cases 'appropriate' non-rural activities may be considered as long as the rural character of an area is not compromised. The degree to which this control should be exercised on a windfarm of this size on the rural environment therefore is a question of fact and degree.

[310] In terms of efficient use of the wind resource, most of the planning consultants consider the project is a very efficient use of a particularly valuable natural resource – namely the high quality wind resource on the site. Some added value of the land resource will also occur because the project will make considerable electric power from wind at the same time as providing for the farming use of the two stations to continue. Also, it may allow the retirement of some of the steep land which will be allowed to revert to bush cover. On this issue further consideration may be given by Meridian to further fencing to protect regenerating areas on the site over which it controls. The project's location would also have benefits in terms of reduced transmission losses, for these would be minimised due to its proximity to the greater Wellington urban area.

[311] In terms of avoidance and mitigation of adverse effects, Meridian undertook a scoping exercise which limited the number of turbines on sites it considered could affect natural character/landscape and rural amenity issues. The evidence establishes it has been proactive in seeking to protect the ecology of the site during the development phase two through an extensive fleet of site environmental management plans (SEMPs) and regional council conditions and more recent agreement to protect the Waiariki catchment and to minimise the disruption to the local community and the infrastructure by barging in the

turbine components. While farming *may* be disrupted in some areas of the site, this state of affairs will only be temporary. The site is also to be restored if the project is disestablished. For those critical of the removal of vegetation and soil for access and earthworks, it is appropriate to remember that soil removal is a permitted activity for Rural Areas under both District and Regional Plans.

[312] Mr Rough identifies a series of mitigation measures which are directly relevant to maintaining the rural character of the site:

- existing farm roads will be used where possible;
- the location of new access roads has been designed to ensure minimal visibility;
- revegetation, including hydroseeding, will be used on cut and batter slopes;
- cut surfaces will be carefully shaped with some excess earthworks material;
- disposal sites for remaining earthworks have been located to ensure minimal visual effects;
- disposal sites will be revegetated with pasture, shrubland or tussock species as quickly as possible;
- siting and design of structures will minimise visual impacts;
- the temporary berthing structure, stockpile areas used during construction and the concrete batching plant will be fully rehabilitated following the construction period;
- power transmission lines between the turbines and the substation will generally be underground;
- power transmission line poles will be considerably smaller and much less visually obtrusive than existing pylons in Makara Valley.

[313] As to the maintenance and enhancement of the character of the Rural Area by managing the scale, location and rate of the new development, which is set out in Objective 14.2.2, the two related policies are to control the number and location of new building developments/activities in order to also avoid, remedy or mitigate their adverse effects on rural character and the landscape. And also to control the location of new structures and earthworks on ridgelines and hilltops. Also under Objective 14.2.3 the requirement is to maintain and enhance the amenity values of the Rural Area. Mr Leary, while agreeing that a windfarm would not be inappropriate in a rural area, emphasises that the protection of rural

amenity is an outcome sought by the Plan with specific mention of controlling the built environment and protecting the undeveloped ridgelines and hilltops. In his opinion, this proposal achieves none of these objectives.

[314] Counsel for the Guardians submits the large scale structures associated within windfarms do not come within the Rural Area Design Guide and are outside the Rural Area Rules. As a result, the character of an area like Makara can fundamentally alter almost overnight and at a significant rate of change which the community would not normally expect. Mr Leary gave evidence that the scale of the proposal will overwhelm Makara and significantly disrupt other existing activities off site, ie that of the existing rural residential activity. He considers that while there may be periods of intense rural activity such as mustering or tree harvesting in this area, its general rural character is more often one that is static, laid back, peaceful. It is considered the constant movement of the turbines alone will generate an active, unrelaxing element in the landscape and significantly disrupt its rural character.

[315] The scale of this development greatly concerns the Guardians and the Trust. Ms Lucas considers that an assessment must be undertaken at a spatial scale that relates to [in this case] the very broad scale of the project concerned. Because the very tall structures that are proposed on the ridgelines *are themselves compatible with the scale of the landforms* then their effects potentially are spread very widely. Meanwhile the ruralness, the remoteness, naturalness and tranquillity of the area are the key to the depth of attachment many Makara residents feel for this landscape. Into this environment are to be dropped structures with a scale it is difficult to comprehend, together with a substantial roading structure and substantial platforms and earthworks. The impact on the rural community will thus be significant and adverse. Ms Lucas for example finds the sheer scale of the structures is such that they will belittle or overwhelm their rural setting.

[316] Mr Ulusele considers (as does Mr Rough for Meridian) that the continued legibility of the (rural) landform in spite of the turbines along the major ridgelines allows him to conclude the proposal is not inconsistent with the Objective 14.2.2. While at close proximity the structures will dominate the landscape and the rural outlook will be unquestionably altered, the proposal will allow the underlying land to remain a rural landscape. Therefore, while the focus of the observer may be drawn to the wind turbines, due to their scale and

magnitude, the underlying rural nature of the land will still be perceptible and acknowledged. We agree to some extent with that statement.

[317] And in terms of Makara Valley itself, Mr Rough said this:

> *Within Makara Valley long views are generally cut short by intervening spurs. Extensive views of the tops are generally similarly restricted. Not only is the landform which encloses the valley complex, there is considerable complexity in the land cover which is variously in pasture, gorse, regenerating native vegetation and exotic forest. Foreground and middle-distance features, such as the road, tracks, fences, power poles and pylons, buildings and a variety of substantial, mostly exotic, trees, also add to the complexity of views.*

We have no quarrel with this statement either. But then Mr Rough goes on to say:

> *The introduction of several turbines into views, whether they be static scenes, say from dwellings, or changing scenes as the roads in the valley are travelled, will not significantly alter the essentially rural character of the valley.*

As the appellants' witnesses point out it is not 'several turbines' that are being introduced into the rural views of a number of the residents but 'many'. They consider in some instances their rural amenity will significantly be downgraded.

[318] While we consider Mr Rough is incorrect when he states the turbines will not significantly alter the essential rural character of the valley for (some) valley dwellers (the photographic evidence establishes it will), we consider from what we saw on our site visit that the project will not substantially overwhelm the hinterland's rural character if some limited mitigation of the turbines is carried out. The valley itself is a complex, contained environment, with many structures, visual distractions and obstructions and vegetation. Most of the activity on the site itself will be on higher landforms above the valley. If the ridgeline above South Makara has its landscape relieved from the pressure of some of the turbines then in our opinion adequate visual amenity mitigation for the residents below may be achieved.

[319] We assessed the issue also from Mr Rough's Photopoint evidence, particularly Photopoint 12 *Gun Emplacements Before – After*. In these two simulations, provided from a location where visitor numbers would be high, we concluded that this would be the area where the turbines would be at their densest and most visually significant. But we also

concluded that to some degree the strong, expansive landform of the site will continue to dominate the area and contribute to the retention of its rural character.

[320] One of the relevant policies (Policy 14.2.2.2) seeks to control the location of new structures and earthworks on ridgelines and hilltops. Under the District Plan ridgelines and hilltops are defined as *Means all of the land at the top of a ridge or hill measured 50 metres vertically from the apex.* Most of the turbines are to be placed on prominent ridgelines and will not be consistent with the policy. It is a consideration however there is no prohibition to their location on these sites occurring *at all.*

[321] From the photographic evidence, the protection of the skyline is a very strong contribution to rural character because the ridgelines and hilltops in this area, against which the landscape is perceived, are largely undeveloped except for a scattering of masts for various telecommunication activities. Attachments to Ms Lucas' evidence demonstrate both the rural nature of the area and how far the visual influence of the project may reach accepting that assessing zones of visual influence is only one of the first steps to be taken in measuring visual effects and that there will be hills and structures and escarpments in the way which will mitigate some of the more significant adverse effects from some locations which is why the location of each turbine has to be considered carefully.

[322] In terms of Objective 14.2.3 and the maintenance and enhancement of the amenity value and rural character of Makara, protection of rural amenity in the Makara environment is clearly an important outcome sought by the relevant provisions of the plan. The Makara Rural Community Plan 2002, which is listed in the District Plan, has as its primary objective *to maintain and enhance rural character, amenity and identity for people living, working and visiting Makara.* It seems to us that a key word in Objective 14.2.2 is to *manage* the scale, location ... of new development and in Policy 14.2.2.1 *to control* the number and *location* of new activities. But this relates to subdivision of rural land and limiting the intensity of residential settlement. The environmental result is to restrict development so that new buildings reflect the rural character of the area. The policy identifies further study is required to establish *the capacity* of a Rural Area to accommodate new development.

[323] We suggest that these proceedings, which take the form of an inquiry into assessing the capacity of this area to accommodate new development such as the windfarm, may

provide such a relevant study. Several of the appellants' witnesses have suggested this site is large enough to accommodate other turbine locations impliedly more suitably sited. Mr Jorgensen went to some lengths to produce a number of alternative locations within the site to prompt our regard to alternatives. While these alternatives are not acceptable to Meridian for technical and practical reasons, as outlined in the rebuttal evidence of Mr Anthony Coulman, resource group manager for Opus International and consultant to Meridian, they indicate that the appellants were prepared to compromise to accommodate the project, which is to their credit.

[324] Apart from the turbines and their footprints, the soil disposal sites will potentially have the most significant effect on ridge crests although mitigation measures are proposed for such sites. Mr Rough's Sheet 65 *Road Earthworks (Gun Emplacements)* demonstrates the cut and fill associated with the earthworks on the K road. We do not find the earthworks unduly intrusive on this broad landscape due to the manner in which they are to be managed and the sites restored at the same time acknowledging that overall 35ha of bush will be lost. Meanwhile we agree that diminution of rural character will occur as a result of the proposal if some turbines are not relocated.

Rural Area Rules

[325] Mr Leary, the only consultant adviser to do so, next focuses primarily on the applicable Rural Area Rules (15.4.1 and 15.4.2) and their criteria, which in turn flow from the Rural Area objectives and policies, relating to matters such as height, noise, the site and scale of the development. There was no specific rebuttal from Meridian's planner of the following evidence. We make the following responses.

[326] Rule 15.4.1 (Non Rural Activities) requires assessment against a number of criteria, and we deal with them in turn:

15.4.1.1 Whether the buildings, structures or other works are of appropriate scale having regard to local landforms and the nature of surrounding development. Where new buildings or structures are sited within the more densely settled areas of the Makara Valley, Ohariu Valley or Horokiwi, they should reflect the scale and form of existing farm houses and buildings.

Ms Lucas considers that 125m high wind turbines are completely out of scale with the local built form and are such that they compete with the topography itself for dominance of the local landscape. For a number of turbines this is true. Mr Leary considers Project West Wind

is therefore in conflict with this criterion. In some areas the project is situated away from the more densely settled areas of Makara Valley and does not necessarily offend the rule – otherwise the H series turbines sit along the ridgeline adjacent to some of the residential dwellings.

[327] Criterion 15.4.1.2 Whether the extent to which the amenities and quality of the rural environment can be maintained or enhanced. The potential impacts of noise, dust, glare, vibration, fumes, smoke, electromagnetic effects, odour, other discharges or pollutants or the excavation or deposition of earth are assessed to avoid remedy or mitigate adverse effects. Particular consideration will be given to maintaining a quiet night-time rural environment.

[328] Mr Leary concludes the project will not meet this criterion, based on an opinion expressed in the evidence of Dr van den Berg. We have analysed the noise evidence produced by all the experts and have concluded that provided Meridian meets the conditions agreed to, Project West Wind will meet this criterion. Construction activity will adversely impact for a number of years but this then will pass. And because of the location of the residents in the valley rather than the ridgetops, we consider with appropriate mitigation (such as by relocation of some of the turbines) the amenity and quality of the Makara environment should be able to be maintained.

[329] Criterion 15.4.1.4 Whether the site of any non-rural or residential use is appropriately located having regard to the scale of the building development proposed and the intensity of the activity. Council will generally look to encourage the dispersal of non-rural activities in the Rural Area and discourage their concentration in any particular location. Council will also consider the extent to which any non-rural activity, building or structure may hinder farming activities.

[330] Mr Leary identifies the purpose of this criterion is to assess proposed non-rural activity and whether it will be prominent in terms of the existing rural land use. By dispersing (and not concentrating) non-rural activity it can be absorbed into the area without significant impact. It is his conclusion that the opposite is true of the West Wind Project. Meridian will have a run of turbines parallel with the main Makara belt of residences for a distance (as the crow flies) of just under 12km. This run of turbines stretches from the gun emplacements above Opau Bay in the north of Makara, linking through to the southern coast above Tongue Point. The project will span virtually the whole of the western Makara farming land and

become the dominant land use activity. Mr Leary does not believe that the project will hinder farming activities, except during construction and earthworks, but it certainly does not meet the intention of criterion 15.4.1.4.

[331] We note that Meridian deliberately chose the placement of turbines with their separation of groups by landform, to help retain the open character of the landscape and the legibility of its landforms. Further, the turbines and towers are designed as an integral unit resulting in an elegant and visually cohesive structure. From some of the bad examples we saw of turbine location and placement in Mr Rough's evidence [Sheet 15 *Photographs of Wind Farms in California with an Industrial Character*] we can commend the way Meridian has set about designing the windfarm, but with the reservations about other issues we express elsewhere. And all turbines are identical which results in the proposal having a considerable measure of visual unity.

[332] Criterion 15.4.1.5 Whether activities which generate traffic flows which are significant in the rural context have access from formed, sealed roads. Council takes into account whether the amount or type of traffic will exceed the capacity of the roading network or will otherwise adversely effect the rural environment. Reasonable parking should be provided on site.

[333] We have already discussed the effects on traffic. Safety is not an issue although the construction period will cause disruption to the local community. Aspects of these effects (e.g. truck movements) will be temporary (approximately 2 years). Mr Leary considers a change to rural character and amenity due to road widening will be permanent. In some respects this is acceptable (e.g. increased safety), in others it makes the small scale rural roads into larger, possible more "urban", roads. While Mr Leary considers this heavily diminishes the existing rural character of the area, we consider increased safety must be an overwhelming consideration. Mr Jorgensen's photographs of the existing roading problems are evidence of that.

[334] Criterion 15.4.1.6 The extent to which the landscape amenities and ecological values will be maintained or enhanced. Existing vegetation on the site should be retained where possible.

[335] The appellants consider the project in its current form does not really attempt to maintain and enhance the landscape amenity of Makara. They consider the adverse landscape effects will be significant. The effects on ecological values will be adverse, though potentially not to the same degree as the landscape amenity, on the basis that all mitigation measures are satisfactorily implemented. Also, say the appellants, significant areas of existing vegetation will be removed. Mr Leary notes that replanting and revegetation will be proposed, but also observes that the harsh hilltop environments where substantial earthworks will be undertaken, is an environment where revegetation is a very slow process.

[336] As to ecological issues, it is submitted by counsel for Meridian the evidence clearly demonstrates that within the project footprint the site ecology is almost entirely pasture or indigenous vegetation regenerating through pasture. In the case of Terawhiti Station (over 80% of the site) Meridian has rights to enter and construct the works (with appropriate mitigatory techniques) but no other rights. As submitted, otherwise the potential effects of the proposal and waterways that are not within the project site are able to be controlled by the Wellington Regional Council's soil and erosion control guidelines and conditions of consent.

[337] As noted too earlier the vegetation clearance on the project site which is objected to by a number of the appellants' witnesses, is a permitted activity part of the permitted baseline under both the District Plan and the Regional Soil Plan. In any event, much of the disturbed vegetation is to be reinstated following construction. That may be a slow process but this must be seen in the context of the purpose for which the windfarm is proposed – to make the City of Wellington self sufficient in energy and offset some of the national adverse effects of climate change.

[338] Criterion 15.4.1.10 Whether alternative sites for the activity, including sites in the urban area, and alternative methods for undertaking the activity, have been considered, and the impact of the alternatives on the environment.

[339] Mr Leary accepts that rural areas of the city are those most suited to the locations of wind turbines. Meridian also looked at smaller turbines but rejected them for economics of scale and the fact that to achieve the same energy results it would require many more turbines. Nevertheless, Mr Leary considers Meridian's refusal to remove turbines or relocate them to other parts of the site where they may have less adverse effects demonstrates the company's failure to explore other alternatives.

[340] Meridian believes through its original scoping exercise that it has sufficiently mitigated adverse effects. It has resulted in the withdrawal of 37 turbines. There may be other locations for the project on a smaller scale but we consider putting all aspects of the proposal together this is a suitable site.

[341] In addition, alternative sites were clearly explored. Mr Muldoon identifies the other sites Meridian investigated would be less efficient, less economic and in turn would not deliver the same benefits as the Makara site would achieve. Other sites identified as having a comparable wind resource are in remote locations, national parks or with unsuitable topography, are not available or are already nearly fully developed (the Manawatu). Mr Botha's cross-examination also demonstrates other sites were looked at – *about a dozen sites* would come in with low 40% generating capacity while West Wind would achieve 48% which we were told is the highest in the world. Meridian chose this site because it has the best wind resource on an international scale.

[342] The application is also required to be assessed against the criteria under operative Rule 15.4.2 (Earthworks within a Ridgeline). Each of the criteria and Mr Leary's comments are examined as follows.

[343] Criterion 15.4.2.1 Whether structures or earthworks are visible against the skyline or alter the shape of the natural skyline when viewed from any Residential Area or any formed public road, accessway or Open Space Areas situated in the Rural Area.

In Mr Leary's opinion the earthworks for the roading and turbine foundations are visible against the skyline at the same points. The earthworks will be seen from residential areas, particularly on Quartz Hill where they will be seen from Karori. The views from public roads within Makara Valley and Ohariu Valley are likely to be restricted. The earthworks will, however, be very prominent from the Makara Road when travelling over the Makara saddle.

[344] We consider that a number of earthworks will be seen against the skyline from public roads but visibility does not necessarily mean a significant major adverse effect and Mr Rough's Sheet 65 *Road Earthworks, Gun Emplacements in After* displays several sites on ridgelines which are long and narrow and not overtly intrusive. Meanwhile the turbine

structures will be visible against the natural skyline from many locations and will alter its shape.

[345] Criterion 15.4.2.2 The extent to which any adverse visual effect can be reduced or improved.

Mr Leary considers in the case of Quartz Hill and other locations within the coastal environment, earthworks will have significant adverse effects on natural form, resulting in any mitigation works being purely superficial. He acknowledges nevertheless that Meridian is undertaking planting, ground shaping and revegetation.

[346] Criterion 15.4.2.3 The extent to which any building or structure may cause a hazard. From the expert evidence, the generation of hazards from the structures will be minor.

[347] Criterion 15.4.2.4 The extent to which any earth cut or fill will remove existing vegetation, alter existing landforms, affect water quality, or affect existing natural features, such as waterbodies.

Mr Leary considers the effects on existing vegetation and alteration to landform, particularly in the construction of 10m wide roads, will be substantial, but as the effects on water quality and waterbodies are the subject of WRC consents and on implementation of the mitigation measures proposed, he accepts the expert evidence that these effects are acceptable.

[348] Criterion 15.4.2.5 The extent to which any cut or fill be restored or treated to resemble natural landforms. Council seeks to avoid the creation of unnatural scar faces.

The batters and earthworks necessary to construct the access roads for the turbines will require substantially large cuts. While detailed plans have not been produced, based on Mr Leary's own experience in subdivision roads in this same country, there is little possibility that these batters will be able to be treated so as to resemble natural landforms. Large unnatural scars into rock faces will be an inevitable outcome. The construction of roads in locations less visible from residences and public places would reduce these effects. The proposal in its current form does not significantly reduce these effects.

[349] We do not agree with this conclusion. The layout of the proposed roading system results in most of the major earthworks for roading being either hidden from public view by

intervening ridgelines or by being distant or remote. Some cut faces were shown superimposed on photographs taken from publicly accessible locations but because of their elongated nature and the distance of some kilometres to them, they were not dominant or even prominent in the views. In the steeper back-country part of the site, large cut faces for roading will be, while fresh, quite obvious but not out of keeping with some of the natural existing rock faces and will over time blend with the existing nature of the area. Once the project is completed, the 10m formation width of the roading necessary to transport the large turbine parts is to be reduced to 5m with revegetation established along the berms. But we acknowledge this will not camouflage the formation.

[350] Criterion 15.4.2.6 The extent to which any earthworks may impact on prominent or visually sensitive situations, including the coastal marine area, ridgelines, cliffs and escarpments and waterbodies.

The effects of the earthworks on visually sensitive situations is addressed in the expert evidence. Mr Leary considers that the adverse effects in this regard will be significant. He is also of the opinion that turbines should be removed, as discussed above. We are not of that opinion considering that the mitigation and preventative measures identified in the fleet of WRC and WCC conditions the earthworks will not create long term adverse effects. Cliffs, the coastal marine area (apart from briefly Oteranga Bay), escarpments and waterbodies should not be affected at all.

[351] Criterion 15.4.2.7 The necessity for carrying out the works. In Mr Leary's opinion, the necessity of carrying out the earthworks is simply to enable Project West Wind to be implemented. The project could not be implemented without them. Having said that, the adverse effects of the earthworks, Mr Leary considers, can be reduced by removing turbines from the most significant locations such as Quartz Hill and the coastal environment. Identified alternative locations will have lesser visual effects on the local residents and the wider visual environment. We interpret the word 'necessity' to include, as a consideration, reducing Wellington City's reliance on electricity transmitted from distant generating stations. This is an assessment to be made under Part 2 matters.

[352] Criterion 15.4.2.8 Whether the proposed earthworks increase or decrease flood hazards. Mr Leary considers the earthworks' alteration of the natural landform will not decrease the

flood hazards. He accepts, however, that based on the expert evidence presented, the flooding risks will be acceptable.

[353] Criterion 15.4.2.9 Where the activity is within a Maori precinct, the outcome of consultation with tangata whenua and other Maori. The project is to take place in an area familiar to Maori. The outcome of consultation has been the project's approval.

Plan Change 32 (Renewable Energy)

[354] This Plan Change is a response to the 2004 amendments to the Resource Management Act adding to s7 the factors of *having particular regard to the effects of climate change* and *the benefits to be derived from the use and development of renewable energy.* A Plan Change may make provision for *wind energy facilities* as a discretionary activity (unrestricted) in the Rural Area, so the planning status of a windfarm would not change. The relevant Objective and Policies are:

> Objective 25.2.1 – To encourage efficiency in energy use, and the development and use of energy from renewable sources.
>
> Policy 25.2.1.1 – Encourage the efficient use of energy and the greater use of renewable energy.
>
> Policy 25.2.1.2 – Provide for renewable energy development, while at the same avoiding, remedying or mitigating adverse effects on the environment.

[355] We are much inclined to agree with Mr Aburn that the Explanation of the Objectives and Policies in Plan Change 32 summarises the issues in these appeals:

> Wind energy facilities often need to be sited on ridgelines, hilltops or other elevated positions. This can lead to potential conflict with landscape and amenity values. It is considered that renewable energy developments such as wind energy facilities can successfully exist within the Wellington City boundary if adverse effects on the environment, including the natural character of the coast, ecological, heritage and amenity values, and cumulative impacts are avoided, remedied or mitigated. This potential conflict needs to be carefully managed and assessed on a case by case basis. The discretionary (unrestricted) rule will ensure that the effects and benefits of any application are given full consideration through the resource consent process.

[356] The criteria attached to Rule 26.3.1 are exactly reflective of the issues arising in these appeals. They focus the assessment on:

- Noise;
- Amenity values of surrounding communities and residential locations;
- Visual effects;
- Ecological impacts;
- Effects of traffic and vehicle movements;
- Alterations to landforms (including earthworks);
- Impacts on special interest sites (including sites of significance to tangata whenua);
- Operational technical considerations;
- Effects on aircraft safety, radar stations and navigation sites;
- Cumulative effects.

Also included as a criterion is the contribution that the proposal would make to energy policies and renewable energy targets. We note for example that in Plan Change 32 there is no mention of protection of undeveloped ridgelines and hilltops from inappropriate development. There is particular mention of the natural character of the environment, including *cliffs* and *escarpments*.

[357] The whole of Plan Change 32 is under appeal to the Court. Supporters of the proposal urged us to put particular weight on it because, they said, it represented important new policy which filled a lacuna in the Operative Plan. We do not see that as a reason for placing more weight on it than would be the case for any other proposed planning document at that stage of development. It gives effect to the 2004 amendments to the RMA, and we must have *particular regard* to them in any event. While Plan Change 32 would change the objectives and policies against which the proposal would be assessed, it would not, as mentioned, change its planning status.

Plan Change 33 (Ridgelines and Hilltops (Visual Amenity) and Rural Area)

[358] Plan Change 33 proposed a series of changes to the Rural Area provisions. In particular it seeks to better manage the continuing demand for rural/residential and lifestyle living – generally discouraging fragmentation. It introduced a Rural Area Design Guide for subdivision and residential buildings in the Rural Area and identified important ridgelines and hilltops to be given greater protection than other landforms. It did this by introducing an

overlay system identifying important ridgelines and hilltops. Although not initially included, after the submissions process Quartz Hill was included in the overlay system and that decision is subject to an appeal by Meridian. The construction of buildings or structures within identified ridgelines and hilltops would be a discretionary activity (unrestricted). As Mr Aburn notes, depending on the merits of a proposal, buildings and structures could be appropriate, even on identified ridgelines and hilltops. While Plan Change 33 is not seeking to change the planning status of wind farms, there may well be an as yet unresolved disconnect between the two Plan Changes, in that Plan Change 33 does not seem to address the 2004 amendments to s7 and the possible desirability of wind-based generation on and around ridgelines and hilltops.

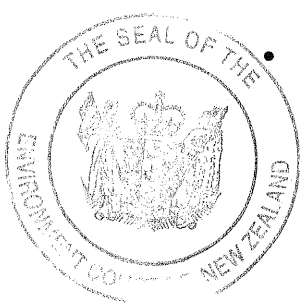
[359] Overall, we regard Plan Change 33 in much the same light as Plan Change 32 – an expression of the WCC's current views on a relevant topic but subject to possible change, or even rejection, and to be given weight accordingly.

[360] Otherwise, with relatively little weight to be attached to the two Plan Changes, the District Plan has little of direct assistance, save for the rather generalised provisions about amenity values, hilltops, and the character of the rural area. Those are certainly factors to be given emphasis, and weighed in the overall assessment of sustainable management of New Zealand's resources. We discuss them more fully elsewhere.

Findings

[361] The principal views we have come to on this topic are:

- the objectives and policies of the District Plan cover aspects such as amenity, rural character and natural character, urban containment and protection of ridgelines;
- generally, the Plan seeks to preserve the rural character amenity which is special and which drew the residents to Makara;
- the general criteria seem inappropriate for a project of this scale;
- the project is therefore viewed as a whole in terms of effects, which the Plan is designed to address.
- non-rural activities will sometimes be appropriate in such a rural location and this issue we resolve under Part 2 matters;



- ***Other Matters: Reverse Sensitivity***

[362] As to any reverse sensitivity issues arising from new residential developments going in alongside the windfarm, Mr Aburn makes the point that this is pretty rugged country with the majority of the residences established in the Makara Valley. He considers that it is going to be challenging in the future to provide a significant number of new residential dwellings in Makara Valley beyond the area which is currently developed.

[363] Mr Leary outlines why the impact of the Project West Wind on future dwellings should be taken into account and appropriate protection should be afforded them in order to avoid unreasonable restriction on the potential development of some properties. There is mention in his evidence that at the end of South Makara Road and to the east of Terawhiti Station, on which the project is to proceed, is located Kinnoull Station which is approximately 500ha. It is currently the subject of an application to subdivide the land into large rural allotments.

[364] Condition 17, as imposed by the Hearing Commissioners at first instance, appears at one level to meet this suggestion by prescribing noise limits on existing and future dwellings. This condition was appealed by Meridian. For it is stated by Mr Aburn, after reviewing the District Plan Rules, that Meridian could effectively be forced to decommission constructed turbines as a result of the location of subsequent housing development nearby, or alternatively, it may not be able to construct turbines as a result of potential future housing that may never be built. Given the cost of each turbine ($7 million) this is seen as an unreasonable outcome.

[365] Meridian proposed an amendment to the existing condition 17 that it meet specified noise limits by the addition of the words *when measured at the notional boundary of dwellings existing at the date of this consent.* Mr Aburn cites the *AR Freilich* decision[19], the findings of which specifically limit the consideration of future hypothetical activities that are not permitted or controlled. WCC accordingly propose an amendment to Meridian's proposed condition 17 to also include *dwellings built as permitted or controlled activities (excluding any earthworks)* in addition to existing dwellings. This amendment would therefore reduce the level of 'uncertainty' identified by the applicant and, it is submitted, is more consistent with the direction in *AR Freilich.* The Court suggested another amendment to Meridian's suggestion – that the condition include dwellings that can be constructed pursuant to an

19 *AR Freilich v Tasman District Council* C 15/2005.

approval existing as at the date of the grant of consent. Meridian is now prepared to accept a condition incorporating these suggestions. As counsel for the company submits such a condition would not unduly constrain either Meridian or other parties. It also complies with a recent decision of the Court of Appeal in *Queenstown-Lakes District Council v Hawthorn Estates Limited*[20] and should read:

> *Wind turbine sound levels, when measured at the notional boundary of dwellings existing or holding all resource consents necessary for construction at the date of this consent, or able to be constructed as a permitted activity. ...*

- ***Part 2 RMA***

[366] Part 2 of the RMA contains the purposes and principles of the legislation. They are in a hierarchy of matters to be considered, culminating in the overall weighing of whether a proposal can be said to promote *sustainable management* of natural and physical resources, as that term is defined in s5.

Section 8, s7(a) and s6(e) – Treaty and tangata whenua issues

[367] Mr Morris Love represented the Wellington Tenths Trust, Te Runanganui o Taranaki Whanui ki te Upoko o te Ika a Maui Inc. and Te Atiawa ki Te Upoko o te Ika a Maui (Fisheries) Trust. He told us that he had had a role in iwi consultation and in drafting the Cultural Impact Report for the proposal and that Meridian had accepted his recommendations for the removal of some turbines during the project's shaping process. In summary, he says that the iwi mana whenua of Wellington, in which he includes Te Atiawa/Taranaki whanui (Ngati Tama, Taranaki, Ngati Mutunga and Ngati Ruanui, and Ngati Toa Rangitira) are satisfied that their relationship with the land has been recognised and provided for and potential culturally adverse effects have been avoided, or have been satisfactorily remedied or mitigated through design and consent conditions. There was nothing in the other material put forward that in any way amounted to a credible challenge to that position, and we are satisfied that if those authoritative Maori bodies are content with the proposal, there is nothing which should concern us in those respects.

Section 7

[368] Section 7 lists matters to which the Court is to have *particular regard* in coming to a decision. The following paragraphs of s7 appear relevant, and we shall discuss them in turn.

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20 [2006] NZRMA 424.

[369] (aa) *The ethic of stewardship*: It is possible, and valid, to see the concept of stewardship in two ways in considering these appeals. First, that it would be best achieved by preserving this landscape unaltered, and that change to it should be avoided. Alternatively, it could be argued that *we* will be better stewards of the planet's resources for the benefit of future generations if we allow some compromise of amenity for the purpose of at least slowing climate change, by taking advantage of non-polluting and renewable sources of energy. For the reasons we discuss in this decision, we favour the second alternative so long as the compromises, taking into account proposals for mitigation of adverse effects, do not impose unreasonable burdens on communities, individuals or the receiving environment.

[370] (b) *The efficient use and development of natural and physical resources:* There are two seemingly pertinent issues here. First, a good deal of the land on which the windfarm is to be established is presently used for pastoral farming, particularly so for Makara Farm, which is largely on and around Quartz Hill and is owned by Meridian. It is less so for Terawhiti Station which is generally much more rugged and steep. The ridgelines on which the turbines are to be sited have largely been retired from grazing and allowed to begin regeneration to native scrub and shrubland. But where pasture remains now it will be reinstated to virtually its full present extent once the turbines are in place. Farming operations will be able to continue as before and, in fact, their efficiency may be enhanced because internal roading will be improved. In the case of Terawhiti Station an income stream from royalty revenue should allow improvements to be made to the land remaining in pastoral production. The ability to use the land for both primary production and the production of energy is clearly an efficient use of that land resource. Secondly, the energy in the wind is a presently untapped resource, and the Makara wind resource, we are told, surpasses any other New Zealand site in terms of predicted energy yield. The use of that resource to produce electricity by a process which does not emit pollutants is an efficient use of it, and the generation of electricity close to a major load centre is also an efficient use of both the new generating and existing transmitting resources.

[371] (c) *Maintenance and enhancement of amenity values*: We have discussed issues of visual and coastal and rural amenity more fully elsewhere in this decision. For the purpose of moving through the s7 factors it will suffice to say, in summary, that there is no doubt that the proposal, as presented to us, would lead to a significant diminution of rural and visual amenity for some properties. There will also be some adverse effects on amenity values as presently

seen or experienced from public spaces on the coast. Overall, those collective values will not be *maintained* (if maintained is taken to mean, as the Concise Oxford has it, ...*[kept] at the same level or rate*), and, still less, *enhanced.* The visibility of turbines from the shoreline itself is quite restricted in places because the high escarpments hide them. They will be visible to walkers actually traversing around Tongue Point, at the very southern tip of the landform, to walkers on the shoreline at Opau Bay, and those ascending the Makara Walkway towards the WW II gun emplacements above Ohariu Bay. But once on the higher parts of the landform, and from the sea, they will be in plain view. Depending on the viewpoint, greater or lesser numbers will be visible at any one time, and the effect will be greatest when they appear to overlap. But wherever they are visible they will, we agree, exercise a strong effect on the natural character of the coastal environment, however broadly or tightly one defines those terms, and whether or not one finds turbines aesthetically appealing.

[372] (d) *Intrinsic values of ecosystems:* In talking of ecosystems on this land, it is important to start with a sense of its scale, topography and recent history. Makara Farm at 990ha and Terawhiti Station at 4610ha together occupy 56sq kms. The distance between the northern-most (B02) and the southern-most (H29) turbines is about 11.5km; and between the eastern (E01) and western-most (K01) is about 5.5km. Quartz Hill is relatively flat-topped and well pastured, but with steep sides, many of them dropping to regenerating shrublands. It contains remnants of original cover in Opau Road (or Post Office) Bush and Johnny's Bush. The much larger Terawhiti Station land extends west and south to the coast. It contains the high peaks of Terawhiti Hill (458m), Outlook Hill (537m) and Mt Misery (483m). Between them are steep sided gullies. Pretty much all of the land has, over 150 years or so, been cleared, burnt off and grazed. As with Makara Farm, very little survives in its original state – vestiges of original cover remain in Warrens Bush, which is subject to a QEII Covenant. The remainder is either still in pasture of varying quality, mostly on the valley bottoms, gentler slopes and rolling ridgelines, with most of the steep slopes and ridgelines having been withdrawn from active grazing.

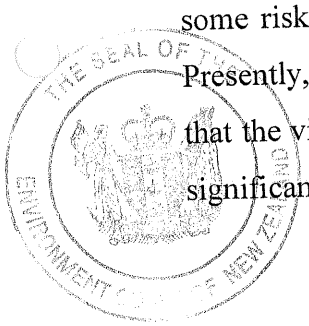
[373] Mr Stephen Fuller, a consulting ecologist for Meridian, estimates that some 60% (3380ha) of the combined site is presently in what he describes as ...*young shrublands*... dominated by tauhinu, gorse and manuka and kanuka, of which of the order of 1% will be cleared, a figure he regards as insignificant in terms of habitat loss. We note here that Dr Margaret Wassilieff, currently an independent ecological consultant, says that there is

little, if any, manuka present, but she does not dispute the presence of the other species. Mr Fuller goes on to say that in moist gullies treeferns and broadleaved trees such as mahoe, kaikomako and putaputaweta are appearing within the pioneer communities, which are at early stages of succession. There are some uncommon or rare plants, typically found on the coastal escarpment and associated coastal landforms. There are some *...interesting plant communities also found on the extremely exposed Terawhiti and Mt Misery summits.* Mr Fuller notes also the recording of rare or uncommon species of wildlife on or around the site, but always in relation to the Makara Estuary or the coastline and coastal slopes. The Makara Estuary is by far the most important wetland in the area, but there are other small wetlands also, typically formed where farming works have blocked natural drainage patterns.

[374] There will be no earthworks or installations on the coastal escarpment, the coastal landforms or, with the exception of the landing point at Oteranga Bay, the coast itself. Nor will there be on the summits of Mt Misery and Terawhiti Hill, or at the Makara Estuary, so there is no reason to suppose that the plant communities or wildlife Mr Fuller mentions as present in those places will be harmed by the proposal.

[375] Witnesses for the Societies, lead by Dr Wassilieff, expressed concern about possible harm to birds and bats caused by the turbines themselves, and to aquatic life in the receiving environments caused by sedimentation from earthworks on the ridgelines above them. Dr Wassilieff particularly focused on the Waiariki Stream and its catchment which lies between the proposed southern-most line of turbines (the H line) and Outlook Hill.

[376] We can say immediately that we see no plausible basis for fearing significant harm to bats or to forest/shrubland dwelling birds. It seems unlikely that they would leave their habitat, fly up to largely bare and windy ridgelines, and then fly up another 40m or so to come within danger of being struck by a rotor blade. There may be isolated incidents where that does happen, but it is not credible to suggest it would be so frequent as to threaten the viability of a population. Mr Fuller confirmed that it has not happened at Te Apiti, and we see no reason to fear it here. He did however confirm that his surveys had shown that there may be some risk to black-backed gulls, harrier hawks, spur-winged plover and paradise shellduck. Presently, he says, the risk cannot be entirely quantified but if there is mortality he considers that the viability of the populations of resident native birds, and the local ecology, will not be significantly affected.



[377] This however does not satisfy the issue of displacement or migration. The consulting ecologist for the AEE prepared by Meridian, stated that if displacement does occur on some parts of the site it will only affect species that inhabit open farmland upon which the windfarm is located. However the evidence before us shows significant regeneration is occurring and turbines are adjacent to protected forest sites. Tuis were observed 100m from the QEII covenanted site known as 'Warrens Bush'. The report suggested that monitoring of wildlife populations within the site and in a control area would clarify this issue. It was also stated that there has been no formal research done in New Zealand on the incidence of bird strike on structures of any kind.

[378] A baseline survey and monitoring of a number of avi-fauna is part of the suite of conditions. The Meridian report stated that from time to time species such as falcon, kaka, kereru and bat may visit the site. It was said that the susceptibility of these species to windfarms is not clearly understood and additional research is needed in determining this. He recommended monitoring pre and post construction to confirm the presence or absence of these species and observations of any interaction would be of value. We agree this is a sensible precautionary measure and direct these be added to the species currently listed.

[379] Mr Chris Horne described the Waiariki catchment as *...relatively unusual because of its almost uninterrupted sequence of vegetation from coastal to sub-montane, its ecological diversity, its high natural character, and it dramatic, dominating landscape features.* Dr Wassilieff believes that the importance of this catchment was overlooked in the work leading to the AEE lodged with the application. She summarises her concerns in saying that substantial earthworks would be required along the Waiariki ridge (ie the ridgeline forming the eastern boundary of the catchment) to construct the sites and access roading for turbines J01 and H15 to H29. That, she fears *...would inevitably result in siltation of the Waiariki Stream.* Additionally she has concerns about the adequacy of the proposed revegetation work required in the consent conditions.

[380] Mr Fuller agrees with her that the shrublands on the slopes and in the streambeds contain a range of interesting plant communities, including some rare and uncommon species. But he emphasises that they are well clear of the project's footprint and could only be harmed by significant downslope movements of sediment.

[381] For Meridian, the principal witnesses about sediment control issues were Mr Raymond O'Callaghan and Mr Coulman. Both are consulting engineers, but in different practices. Mr O'Callaghan as noted earlier was engaged specifically to review the erosion and sediment control procedures proposed for the project. He acknowledges that *...It is not possible to capture and treat all sediments associated with earthworks.* The objective is to provide a high level of treatment for low and medium rainfall events. For high intensity events, the objective is to provide some treatment and to protect cuts, fills and disposal sites from scouring. Mr O'Callaghan's view is that the procedures to be put in place are in accordance with best practice, will provide very robust solutions, and will avoid, to the greatest extent practicable, adverse effects on the environment.

[382] Mr Vaughan Keesing was engaged by Meridian to review effects of sediment discharge on aquatic ecology. He is a consulting ecologist. He initially studied the Makara Stream and Oteranga Stream catchments and, after expert witness caucusing, the Waiariki catchment also. Overall, he considers the taxa present are relatively tolerant and robust, with evolutionary experience of sediments. While of value, they have no outstanding specific conservation value. He says that he is confident of two issues. First, the sediment control procedures will be sufficient to protect potentially affected aquatic habitats. Secondly, the aquatic flora and fauna surveyed could withstand a substantial accidental sediment discharge without any long-term adverse effects.

[383] We are left with an acknowledged risk that there *could* be sediment discharges in high rainfall events occurring during the construction phase. Even with construction staged over two years, up to 1.7Mm^3 of earthworks means that at any given time there will be large exposed areas of land which will be *at risk* in the case of a heavy rain event. Dr Wassilieff and the Meridian experts appear to disagree about the level of risk that might pose to the aquatic flora and fauna, and the inherent value of that flora and fauna. The latter point is a disagreement we may not be able to entirely resolve, but the evidence does persuade us that the risk of significant or long-term harm is low. Meridian have set up a sophisticated system of erosion and sediment control. The separation process allows the widespread use of silt fences and silt traps and reduces reliance on large ponds. In order to protect steep slopes this will be done by immediate revegetation works, preventing discharge of large quantities of water on the fill faces. We take some comfort on this point from the fact that in the course of

Meridian's construction of its Te Apiti windfarm on the northern side of the Manawatu Gorge, using essentially the same techniques as will be used here, the area suffered the devastating floods of February 2004. While the country there is certainly somewhat easier than Makara, the large areas of exposed earthworks for roading and turbine platforms in that instance remained stable and caused no known ecological damage. Mr O'Callaghan also cites the Greater Wellington Regional Council conditions as providing, as a peer reviewing authority, an exhaustive and comprehensive set of conditions that will ensure the potential adverse effects from earthworks are managed appropriately. Whether or not the ecosystems at Makara are *outstanding*, they do of course, as s6 recognises, have intrinsic worth and must not be wantonly harmed or placed in peril. But we remind ourselves that the RMA does not require the avoidance of all risk. Meridian have assessed the risk as relatively low due to a number of factors, one of them being that a significant amount of the excavation will be intact rock with a low risk of instability, drainage and erosion. Risk requires the balancing of the level and type of risk, as best it can be assessed, against the benefits that might be derived from the activity in question. If we had to answer the question … *Does the level and type of risk, as best can be assessed from the evidence, require the elimination of the 15 turbines identified by Dr Wassilieff from the proposal?* The answer would have to be …*No*. There will be some sediment concentrations in the outfall due to heavier rain events but this we consider unavoidable given the scale of the project.

[384] Mr Horne raised a concern that much of the reverted farmland might be cleared, thus removing a carbon sink. Factually, that simply is not so. The footprint of works requiring clearance is about 150ha, of which about 122ha is pasture or gorse. Only about 35ha of native shrublands or scrub – about 1% of the indigenous vegetation on the site – will be cleared. Presently Meridian is in discussions over fencing the 1 – 2ha forest remnant known as Johnny's bush. Meridian have been assiduous in offering a like for like re-establishment of vegetation. As a consequence it would be appropriate to extend protection, ie fenced and with plant and animal pests removed, to a 35ha site where regeneration is occurring to mitigate the permanent loss of indigenous flora from roading and turbine sites.

[385] Nor do we think that an additional revenue stream for Terawhiti Station will be likely to lead to a widespread re-clearance of land that is presently reverting. We cannot see that any rational farmer would throw good money after bad in re-clearing land already proven

uneconomic to farm. The argument that that might happen also overlooks the fact that such clearance is a permitted activity on rural land.

[386] (f) *Maintenance and enhancement of the quality of the environment:* Again, we discuss the issues which contribute to the *...quality of the environment* ... elsewhere under their various discrete heads. There seem to be two not necessarily compatible scales on which to consider this factor. Firstly the production of energy from a non-polluting and renewable source must contribute to the quality of the environment in the broad sense. Secondly though, in much the same way as there can be said to be a diminution of amenity, it can certainly be argued that there will be a loss of the quality of the environment from a natural character/ visual/landscape perspective.

[387] (g) *Any finite characteristics of natural and physical resources:* Fossil fuels are a finite resource. Assuming that its costs are at least competitive, the production of electricity from this proposal may replace, or is at least likely to slow the rate of, burning fossil fuels to produce electricity. A high quality wind resource is a finite and valuable characteristic. The land on which it is proposed to build it, particularly perhaps the rather distinctive flatter area of Quartz Hill is a finite resource also. Largely, its underlying characteristics will remain, and when and if the windfarm is decommissioned its above ground structures can be removed, leaving little trace of their former presence.

[388] (i) *The effects of climate change:* The RMA defines *climate change* as *...a change of climate that is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and that is in addition to natural climate variability observed over comparable time periods.* New Zealand is a party to the United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol. The obligations under those documents have been reflected in domestic law in the Climate Change Response Act 2002, and in amendments to the RMA, specifically s7(ba), (i) and (j).

[389] The possible effects of climate change are summarised in the evidence of Professor Ralph Sims, who is the Director of the Centre for Energy Research at Massey University. Among other distinguished positions in his field, Professor Sims was a Lead Author on renewable energy for the Intergovernmental Panel on Climate Change (IPCC) 3rd Assessment Report – Mitigation (2001) and is the Co-ordinating Lead Author for the Energy Supply

chapter of the Fourth Assessment Report which is currently being written and reviewed. The research shows that when the natural carbon cycle is disrupted by human activities the emission of greenhouse gases – largely CO_2 - will push global temperatures to artificially high levels and disturb natural climate and weather patterns. Current atmospheric CO_2 concentrations are approximately 380 parts per million (ppm). Since the late 19th century the average temperature of the earth's surface has risen by 0.6°C and IPCC computer models suggest a mean annual global temperature rise of between 1.4°C and 5.8°C will occur over the next century. That prediction is based on an increase of atmospheric CO_2 concentrations to between 550ppm and 950ppm. The IPCC regards a 2°C temperature increase as the threshold beyond which risks to human societies and ecosystems increase significantly. That level of increase is considered probable when atmospheric concentrations of CO_2 exceed 400 – 450ppm. Avoiding an increase beyond that point will, it is calculated, require reductions in global emissions of 60% – 80% by the year 2100.

[390] Numerous plant and animal species, already weakened by pollution and loss of habitat, are not expected to survive the next 100 years due to the current warming trend. Climate change is associated with rising sea levels. Glacial retreat and ice pack melting lead to increasing sea temperature to rises in sea level. The average sea level has already risen by 10 to 20cm during the 20th century and an additional rise of between 9 and 88cm is expected by the year 2100. If, for example, sea levels were rise to the possible 88cm level, that would cause the disappearance of some island nations entirely and freshwater supplies would be contaminated by seawater for billions of people, spurring mass migration. In the long term, over some thousands of years, the Greenland ice sheet is expected to melt completely and that would lead to a sea level rise of as much as 6m to 7m. Professor Sims says that present indications are that the Greenland ice sheet is melting more swiftly than predicted and extensive sea level rise could occur within centuries.

[391] Ms Molly Melhuish has academic qualifications and a record of involvement with scientific ecology and the world of energy production which enable her to speak with considerable authority on climate change and energy generation. She agrees with Professor Sim's background information on climate change, pointing out also that increasing temperatures could have very significant consequences for New Zealand's primary production and ecology. More frequent and more extreme weather events, and changes in rainfall patterns, could have significant consequences for some hydro generation schemes.

[392] Professor Sims concludes the climate change portion of his evidence by saying this:

Therefore for the foreseeable future, decision makers throughout the world need to work within a risk management framework comprising probabilities and uncertainties rather than absolute predictions concerning climate and weather events. Nonetheless, they must recognise that climate change is a reality and respond to that fact.

[393] (j) *The benefits to be derived from the use and development of renewable energy:* The RMA defines *renewable energy* as *...energy produced from solar, wind, hydro, geothermal, biomass, tidal, wave, and ocean current sources.* Ms Heather Staley, the Chief Executive of EECA, gave us some background on the current electricity outlook in New Zealand, and there was no dispute with what she had to say. Electricity demand is growing by between 1.2 and 1.8% per annum, and that is forecast to continue out to 2025. Ms Melhuish notes that this is driven largely by population growth, growth in GDP, industrial developments and energy intensity; ie energy consumption relative to production. She reminds us too that the Commissioner for the Environment has noted that very substantial savings in electricity demand could be made by improvements to building design and construction and technology, and changed expectations and behaviour. That is undoubtedly true and important, but it is an issue of policy that is being addressed through the National Energy Efficiency and Conservation Strategy (NEECS), and it does not fit easily into what have to consider in a resource consent appeal.

[394] In any event, meeting the present rate of demand increase requires between 100 and 150 megawatts of new production capacity, and up to 800 gigawatt hours of new generation, every year. So there is a need to, in one way or another, satisfy that demand.

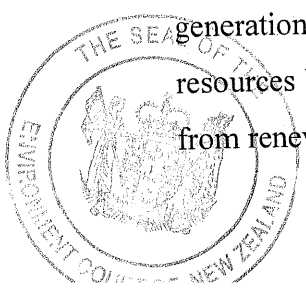
[395] Assuming a capacity factor (ie the ratio of actual turbine output to the theoretical output of a turbine running at full power permanently) of about 47%, this proposal would produce about 850 gigawatt hours per annum, enough to power about 110,000 average households (broadly, every household in Wellington, Porirua and Lower Hutt Cities), with virtually no CO_2 emissions. If that amount of electricity was instead produced by burning coal, something like 540,000 tonnes of CO_2 would be emitted to the atmosphere, per annum. In world terms that may not be such a great addition to the total, but the warnings sounded by

Professor Sims and others should be heeded, and the issue squarely faced. We note that no party advanced an argument in these appeals that, in global terms, the potential reduction of emissions is so small as to not justify whatever adverse effects there might be. That was argued in the *Awhitu* appeal, but it was roundly rejected by the Court: see *Genesis Power Ltd v Franklin District Council* [2005] NZRMA 541, paras [222] to [226]. There will certainly be CO_2 emissions during the construction phase, but the Ministry for the Environment's emission calculation methodology indicates that the approximate 10,600 tonnes of CO_2 construction emissions would be offset by the windfarm's operation for two weeks.

[396] Professor Sims points out that it is not just satisfying increased demand that is likely to increase CO_2 emissions. He said that in 2003, a drier year than usual, the decline in hydro availability lead to an increased reliance on coal and natural gas fired generation. Emissions of CO_2 from the Huntly Station (which is able to run on both coal and gas) approximately doubled between 2002 and 2003. The quantity of emissions will of course vary with the fuel actually used, and the generation level. So renewable generation options can also mitigate dry year supply shortages without the need for greater output, and thus greater emissions, from existing thermal plants.

[397] Mr James Glennie, until earlier this year the Chief Executive of the New Zealand Wind Energy Association (NZWEA) raised another potential benefit of generating that quantity of electricity from the wind resource, in the context of *opportunity cost*. If the alternative means of generation of that electricity was a gas fired station burning imported LNG, the fuel cost (at what he says is a conservative pricing of $0.06 per kWh) would be about $50M per annum in todays terms, or about $800M over his estimate of a 15 year life for a windfarm.

[398] The New Zealand Government's primary means of achieving the outcomes sought in the Sustainable Development Programme of Action for Energy is the NEECS. The Strategy identifies two key policy directions that support a movement towards a sustainable energy economy. First, ongoing improvement in our energy efficiency and, secondly, progressive transition to renewable sources of energy. In respect of the second limb, the target is for the generation of an additional 30 petajoules (PJ) per annum of consumer energy from renewable resources by 2012. As at March 2004 New Zealand had an additional 4 PJ of energy coming from renewable sources each year. Ms Staley estimated that this windfarm, with a capacity of



210MW, would contribute about 3.1PJ per annum, or about 10% of the 2012 renewable energy target.

[399] It is largely self-evident that supply of electricity through the use of wind energy assists with supply security by adding to and diversifying New Zealand's generating base. There is, as Ms Melhuish agreed, a strong synergy between wind generation and hydro, allowing hydro resources to be stored during dry periods. Meridian, with control of some 74% of the nation's hydro resource, is in a position to take full advantage of that. Additionally, wind generated electricity has very limited exposure to energy supply disruptions or fuel price fluctuations. As Mr Glennie points out, the cost of generation from a wind turbine is largely fixed and known on the day on which its construction is completed. Electricity generated close to a major source of demand minimises the load on the national grid and delays the need for transmission upgrades, and there are further benefits in the reduction of transmission losses.

[400] These two last s7 factors are, in our view, very powerful. They represent some key issues to be weighed against the adverse effects on the local environment.

Section 6

[401] Section 6 deals with matters which the RMA prescribes to be of *national importance*, and which are to be recognised and provided for in all decisions about the use, development and protection of natural and physical resources. There are seven s6 factors, but only five are relevant in these appeals. One factor, that in para (e) *The relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu and other taonga…* has already been discussed. We shall discuss the remaining four in turn.

[402] (a) *The preservation of the natural character of the coastal environment (including the coastal marine area) ... and the preservation of [it] from inappropriate ... use and development:* This factor is expanded and given flesh by the provisions of the New Zealand Coastal Policy Statement, and it is helpful to discuss them together.

[403] We consider what should be termed the coastal environment in this location. From the evidence, we consider that the coastal environment includes the immediate hinterland (chiefly farmland) to the coast, escarpments, coastal terraces, coastal basins, and coastal

valleys demonstrating the coastal species identified by Dr Wassilief and Mr Horne, and streams and bays where they interact with coastal beaches and waters.

[404] There will be some work within the *coastal marine area*: - ie the foreshore and seabed between the mean high water springs and the outer limit of the territorial sea. The landing facility at Oteranga Bay, to be used by barges bringing the large components from the Port of Wellington, will be constructed within it. The concrete parts of the facility will, we assume, remain after project construction is complete. If they do, they will not inhibit access along the foreshore. Parts of a similar structure used in the construction of the Cook Strait Cable facility in the 1960s still remain on the western side of the Bay. That aside, there will no construction or earthworks on the foreshore, or on the escarpments which are a feature of this coastline.

[405] That is not an end to a discussion about the *...natural character of the coastal environment...* however. We can dispense with detailed analyses of the concepts of *natural character*, and the *coastal environment,* because there is a broad consensus among the landscape architect witnesses that the turbines, although not actually on the coastal marine area or the shoreline or any escarpments, will still have a significant adverse effect on the natural character of the coastal environment. So the natural character will not be *preserved*, a concept materially indistinguishable from *...maintained...*as in s7(c). We will discuss the concept of *...inappropriate...*use and development towards the end of this section of the decision, because it is common to three of the relevant s6 factors.

[406] (b) *The protection of outstanding natural features and landscapes from inappropriate ... use and development.* There are no outstanding landscape or natural features formally identified as being within the project footprint. Based on the detailed landscape/natural character/outstanding features assessment of Mr Rough, and the evidence of both Mr Brown and Mr Hudson, these witnesses conclude that while parts of the coastline have significant natural character and some outstanding natural features, the mixed vegetation patterns and various structures over the entire site militate against designating the whole of this coastal environment as an 'outstanding' landscape. The structural modifications at Oteranga were also considered to produce low natural character in that area. And it was stated only three remnants of the original vegetation exist on the site and all three – Johnny's Bush, Post Office Bush and Warner's Bush are already covenanted.

[407] Ms Lucas considers that at a broad scale the southwest peninsula landscape of Wellington from Far Point to near Tongue Point is an outstanding natural landscape according to the criteria established through the Court's findings in *Wakatipu Environment Society Inc v Queenstown-Lakes District Council* viz:

- natural science factors – the geological, topographical, ecological and dynamic components of the landscape;
- aesthetic values including memorability and naturalness;
- expressiveness (legibility): how obviously the landscape demonstrates the formative processes leading to it;
- transient values: occasional presence of wildlife; or its values at certain times of the day or of the year;
- whether the values are shared and recognised;
- values to tangata whenua;
- historic associations[21].

[408] Mr Anstey provides a slightly different assessment of where the boundaries of the outstanding landscape may be. He considers the coastal landscape of the southern area of the site is outstanding and includes:

- Terawhiti Hill and slopes with the northern boundary defined by the western side of Ohau Bay and Ohau Point and in the south by Oteranga Bay;
- Outlook Hill and Mt Misery with an inland boundary defined by Oteranga Stream and the spur running up from the southern end of Shepherds Gully to the ridge at the top of the Waiariki Stream;
- Tongue Point, Waiariki Ridge running along the eastern side of Waiariki Valley and the area between Waiariki Stream and the southern end of Kawai Stream.

[409] The evidence of Dr Wassilief, Mr Horne and others point to the depth of regenerating native species (for example in the Waiariki and Opau Catchment) which is already occurring within the coastal landscape and it was confirmed by much of the photographic evidence put in by the appellants. Mr Anstey considers that much of the pasture and gorse found on the site is transient and that such areas are trending to greater indigenous with the rich natural non-

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[21] [2000] NZRMA 59.

forest communities of this landscape beginning to make a significant contribution. The majority of rural lands in the coastal area are regenerating shrubland. That being so, some of the current 'patchwork' vegetation which covers the inner coastal land will gradually disappear.

[410] We asked ourselves does this mean this coastal environment should wait until these inner coastal lands fully regenerate before they are designated outstanding? We do not think so. We consider it is essentially a factual issue.

[411] The desktop analysis undertaken by Mr Rough led him to believe that the project's site coastal environment from Ohau Point south to the vicinity of Tongue Point, but excluding Oteranga Bay, may be the area of coastal environment that has the highest natural character in the Wellington District. Mr Rough was clear in cross-examination that the coastal portion of his assessment on landscape was not a working landscape (ie one where the turbines are to be sited) nor one where doubt exists as to the future of any revegetation patterning occurring, because most of the site is made up of two working farms. Even then we note that a 1984 study by two landscape researchers cited by Mr Brown (Swaffield and Fairweather) identify elements and qualities which contribute to outstanding natural landscapes under the headings of which this landscape eminently qualify, including *rough pasture* or *mixed pasture and bush hill country*, all of which are identified here. Mr Rough accepts that to achieve high natural character the presence of indigenous vegetation is necessary but it is the combined degree of several factors. He accepts for example that Terawhiti south of Cape Terawhiti and on the ridgeline in the case of Outlook Hill and around the terraces above Cave Bay there are areas of pasture but may be still accorded the status 'outstanding'. Mr Rough acknowledges too that neither the RPS nor the defunct proposed regional landscape plan is determinant of whether an area is outstanding.

[412] We have come to the conclusion that overall, the coastal environment from Ohariu Bay southwards to the boundary of Mr Rough's Tongue Point *Coastal Landscape Unit 9* is an outstanding natural landscape punctuated by a smattering of outstanding natural features undiminished by:

- the two small settlements at Makara Beach and Smith's Bay;
- the cultural modifications from earlier activities such as farming and communication centres resulting in fences, access tracks, structures, sporadic

buildings, pine plantations and pasture lands over some coastal areas of the site;

- the industrial type structures at Oteranga Bay;
- the small cultural modifications at Te Ikaamaru/Ohau Bays.

[413] This outstanding natural coastal landscape is contributed to by:

- outstanding natural features such the Tongue Point marine terraces, Terawhiti Hill, Outlook Hill and their immediate hinterlands;
- a striking coastal escarpment the length of the site reverting to native vegetation species;
- intervening deep and steep sided regenerating valleys with sheltered beaches entirely natural in form enclosed by steep escarpments and long-fingered regenerating headlands;
- the varied geological, topographical, ecological, and dynamic components of the landscape ranging from the uplifted marine terrace landforms to the sequences of native species running up valleys from the coast and from valleys onto ridges (Oteranga, Waiariki);
- the rich contribution made by the non-forest communities to the Cook Strait ecosystem at the southern part of the site, and the wetlands and streams in the valleys;
- aesthetic values, including memorability and naturalness – the area has very high natural values along the coast, marine terraces and escarpment;
- the weather-dependent sense of isolation and wildness which are obvious around the coast and on the coastal lands;
- the number of historic associations:
    - pa sites and kainga through as seen on Lucas attachment 17 *historic place names* including at Te Ikaamaru Bay, Ohau Bay, Oteranga Bay and Waiariki;
    - the early 19th Century mines (in the Oteranga and Waiariki catchments) and at Terawhiti (briefly);
    - early sheep station sites (Tongue Point);
    - gun emplacements (WWII);
    - the Cook Strait Cable in Oteranga Bay;

- the demonstration of the strong formative processes leading to this landscape in terms of its legibility which reflects the strong processes leading to it – the wind battered coast, the shorn vegetation, the natural erosion on steep faces and escarpments which is part of the Cook Strait ecosystem and echoed in the nearby Marlborough Sounds;
- very high transient values illustrated by:
  - wildlife and seabirds as a constant presence;
  - seal haul out areas;
  - intermittent sea fogs;
  - the shafts of sunlight;
  - the tidal pulsing affecting the accessibility of coastal features – of stacks, rocks, beaches, kelp and pools;
- the area's widely shared and recognised values obvious from the evidence of organisations and individuals which demonstrates a thorough knowledge of and enthusiastic support for the coast with all of its above characteristics.

[414] Thus given the dominance of such highly natural waters, highly natural features and dominant scarp lands together with the experience of the high naturalness this landscape offers and which we have identified earlier in this decision, its protection is of national importance.

[415] As to whether Quartz Hill is an outstanding feature, Ms Lucas considers the remnant of Quartz Hill located inland of the coastal dominance zone as at the core of the Makara Valley landscape and a focus of the Makara-Terawhiti ridge as enjoyed from the Outer Green Belt lands of Wellington. She considers the character of the remnant as important to the natural heritage values of this city for its old flat surface tells of ancient times in this place from around 40 million years ago. It also has considerable scientific as well as educational value. It is a substantial feature of these lands. Its clear silhouette of the summit is a vulnerable resource and along with the Ohariu Ridge it contributes to the outstanding landscape of the southwest coast.

[416] There was a division of opinion as to whether Quartz Hill is an outstanding feature. It is currently included in the outstanding ridges overlay, pending an appeal by Meridian. As

landowners the company is understandably concerned that such a designation may constrain the commercial usefulness of the property.

[417] Ms Lucas considers the peneplain remnant of Quartz Hill located inland of the coastal dominance zone as at the core of the Makara Valley landscape and a focus of the Makara-Terawhiti ridge as enjoyed from the Outer Green Belt lands of Wellington. She considers the character of the remnant as important to the natural heritage values of this city for its old flat surface tells of ancient times in this place from around 40 million years ago. It also has considerable scientific as well as educational value. It is a substantial feature of these lands. Its clear silhouette of the summit is a vulnerable resource and along with the Ohariu Ridge it contributes to the outstanding landscape of the southwest coast.

[418] In contrast Mr Rough stated:

> *It is my opinion that the hill has, for some time, been considerably encumbered with various buildings, watertanks, powerpoles and overhead lines and a plethora of masts for radio and telecommunication purposes... While the basic land from is intact it is my opinion that the surface of Quartz Hill is highly unnatural because of the presence of closely cropped exotic pasture and farm fences and the structures mentioned in the previous paragraph. The human induced changes and activity on Quartz Hill render it to be the most highly modified and unnatural hill on the whole Project West Wind site.*

[419] He did not think it was particularly distinctive or expressive although in its pasture cover gave it legibility. He saw it as having amenity value in the broad context, as an important view daily for people coming over the Makara Hill. The radio and telecommunication facilities he believed may have modest historical value but none of the buildings and masts are listed with the NZHPT or in the Wellington District Plan.

[420] Cross examination established the area had:

- three buildings;
- 2 lattice towers masts one smaller than the other;
- wooden poles 18m high;
- powerpoles and lines;
- wind anemometer and mast.

[421] Because of the debate we have examined the evidence in the light of the Pigeon Bay assessment criteria.

[422] Natural science features – geographical, topographical, ecological, dynamic components of the landscape: Quartz Hill is classified in the Inventory of Important Geological Sites and Land forms in the Manawatu and Wellington Regions as an extremely well defined landform of scientific/educational value of regional importance. Its natural science features have been discussed in scientific literature for over 100 years and it is the focus of student geomorphology field trips. Its erosional plateau shows the dynamic forces of nature. Forests on its slopes are listed in the Protected Natural Areas Inventory. One, bush Opau Road bush (Post Office Bush) is also listed as a Significant Natural Area, and described as primary coastal forest remnant representative of a forest type that is now almost totally removed from the Wellington region. Their conservation is a priority. On the Quartz Hill summit is a wetland, well defined but poorly maintained, a feature considered rare in the area.

[423] *Aesthetic values including memorability and naturalness:* Although part of a ridgeline which includes higher hills, (Battle Hill, Colonial Knob) the contrasting form of its plateau-like topography is in sharp contrast to the surrounding area. The close cropped pasture, is identified by Mr.Rough and others as highlighting the flatness of its tableland, adding to its aesthetic appeal, and making its form easily identifiable to residents and visitors. It is in close proximity to Wellington airport and flightpaths, making it frequently and readily seen from aircraft and directly viewed by those entering the Makara land through the Karori Makara Hill. It is a focal landmark. Three buildings and telecommunication masts, some as high as 40m are elements detracting from its naturalness but they are not prominent when viewed from a distance.

[424] *Expressiveness (legibility): how obviously the landscape demonstrates the formative processes leading to it:* Quartz Hill is recognised in literature as a significant teaching resource. Part of that attraction lies in its legibility and obvious geomorphic expressiveness, which has yet to be fully understood. Professor McConachie told us that he brings students here to view Quartz Hill and from this vantage point the contrasting ridge and valley systems.

[425] *Transient values: occasional presence of wildlife : or its value at certain times of the day or year:* We have reviewed this head in the course of discussing s7(d) issues.

[426] *Whether the values are shared or recognised:* There is no doubt that Quartz Hill is part of the a valued Makara landscape. The existence of the Quartz Hill Trust illustrate that there are shared values and commitment for the protection of this plateau land. The Makara Guardians also have the protection of Quartz Hill as one of their primary raison d'être. Mr Jorgensen had this to say this after attending a series of community/consultation meetings undertaken by the council:

> *There were some matters that were common in the level of importance to the community throughout the series of meetings……*
> *The absolute importance of the landscape that contributes to the rural character, the hills that are the backdrop to our homes, and in particular, the importance of Quartz Hill to the community in its existing form, and its inappropriateness for development as a wind power station.*[22]

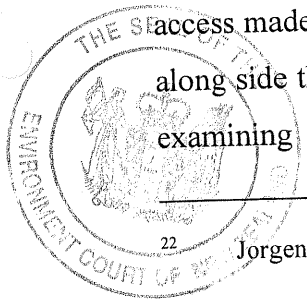
We do not think it is helpful, as we were asked to do, to compare this landscape to others outside the region, such as those in Queenstown. This landscape has its own distinctive mauri/character moulded over time by nature and human use. Its values are locally derivative and locally understood.

[427] *Value to tangata whenua:* We have reviewed this head in the course of discussing s8, s7(a) and s6(e).

[428] *Historic associations:* The site has been an important telecommunications site get date with a village built by the Post Office in the 1940's to support this service. This historical use is valued by the community.

Mitigation

[429] Meridian have recognised its important geomorphology by setting aside geopreservation sites – areas not to be touched in the process of development. There is to be access made available to excavation sites so that further scientific investigation can take place along side the revealed underlying soil and rock structures. Dr Mabin cites the usefulness of examining subsurface materials which could include 'soils, volcanic ashes, periglacial



22 Jorgensen EIC para 89.

deposits, loess, marine sediments, and weathering profiles that may underlie these surfaces[23]. In his view excavations will provide an opportunity for achieving a valuable insight into the lands formative past.

[430] As a result of discussions Meridian have recognised the intrinsic value of the wetland on Quartz Hill and will manage it in a more appropriate way than has been previously the case. This is now provided for in the Supplementary Environmental Management Plan.

[431] During the shaping process a proposed access through Opau Road Bush Reserve to bring equipment the northern most turbines was diverted to an alignment west of Opau Road. This was to avoid the road widening which would impinge on this important forest remnant.

Discussion

[432] From this analysis it appears that Quartz Hill is a locally outstanding feature. Detracting from its value are the present modifications, buildings and masts but they are in themselves at least of moderate historical value.

[433] Farming has moderated the site and reduced its natural character but the pasture was recognised for its aesthetic and legibility contributions to the Quartz Hill site.

[434] However planned modification to the site is extensive. Roads, turbine sites and fill sites will traverse much of the plateau to a level described by to a level we find repugnant.

[435] Johnny's Bush, which is described in Meridian's ecological report as being currently affected by browsing feral goats, still appears to have no protective covenant. Considering the paucity of older forest this requires attention. The removal of some of the turbines, and as a direct consequence road and fill sites to meet residential amenity purposes would reduce the total impact on Quartz Hill. In order to maintain its legibility as a natural green plateau, for teaching purposes and its silhouette not overwhelmed by structures one, stringline not a clutter would be an outcome desirable in recognition of Quartz Hill as an important local landmark of distinction/outstanding local feature.

[23] Mabin EIC URS2-7.

[436] Quartz Hill, which includes the cropped plateau and steep and partially forested sides is a regionally important landscape deserving of recognition in the plan. It provides a visual landmark through its cropped silhouetted plateau and significant bush remnants and it has value as a teaching resource associated with its geomorphology. It is known and recognised in the general Wellington region, beyond the confines of the obvious support it engenders locally. Its previous development use as a telecommunication station appears compatible with the current shift in resource use.

[437] There appeared to be a broad consensus that the following features could be identified as outstanding:

- Terawhiti Hill;
- Outlook Hill;
- the coastal escarpment;
- the marine terraces on the southern coast;
- Tongue Point.

These features are not directly impacted upon by the project.

[438] Part of the outstanding landscape will inevitably have its natural character affected by a defined number of the turbines. Because we find the windfarm appropriate in this coastal location, we consider any residual inability to provide complete protection of the coastal environment must be outweighed by the need to provide for the sustained management of our energy resources.

[439] (d) *The maintenance and enhancement of public access to and along the coastal marine area...* Mr Hughes raised some concern about the use of the foreshore for the Oteranga Bay landing site. As we understood it, he thought that it may prevent the exercise of public access along that part of the shoreline. There may be some very short-term impediment to that while components are actually being landed, but beyond that we see no reason for concern. That aside, the project does not impinge on the coastal marine area at all. Whatever access *along* the area that presently exists will remain.

[440] In terms of access *to* the coastal marine area, again whatever exists at the moment will remain. With one possible exception, short of travelling along the shoreline or landing from a boat, access to the shoreline is presently, and has been since European settlement,

dependent upon the consent of one or other landowner. The possible exception is an unformed legal road, known as Snowdon's Road, which runs from Makara Road, north of Makara Village, across the southern part of Quartz Hill and out to Te Ikaamaru Bay. While a legal road and so, in theory, usable by anyone who can traverse it, there was eventual agreement that first, it is not marked in any way and is therefore all but impossible to find. Mr Ulusele for the WCC believes also that the road was laid out with little regard for the actual topography and is impassable in parts. Mr Hughes did not agree with that. We did not hear from anyone who had actually followed, or attempted to follow, the road for its whole length, so we simply do not know if it is passable, even on foot, for its whole length. As things stand, it is unmarked and untraceable, and thus of dubious practical use in providing public access to that part of the coastline. Concern was expressed that part of the project was to be constructed on it. If some of the project's roading was to follow its line, where that is possible, we imagine the Council would be content. But if there were permanent structures proposed, the Council, as owner of the land, would probably take a different view.

[441] Recognising that the land generally has potential for increased recreational use, and that coastline access is part of that potential as noted earlier, Meridian has agreed, and it is a condition of the Council's consent, to establish, administer and fund the West Wind Recreation Group to plan and develop recreational and visitor opportunities for the whole site. No one can presently be certain what may come of that, but there is potential within it to improve access to and along the 26km of coastal marine area which surrounds the site.

[442] We therefore conclude that public access to the coastal marine area is at least *maintained*, and there is potential for it to be *enhanced*.

[443] (f) *The protection of historic heritage from inappropriate ... use and development.* The Terawhiti area is rich in Maori and European history. There are well-recorded coastal Pa sites, midden, terrace and garden sites along the coastline and in the bigger stream valleys. Prominent among traces of Maori occupation is a *urupa* close to the shoreline at Oteranga Bay which, sadly, is insufficiently protected at present and shows signs of misuse as a biking jump ramp. It will not be affected by the proposed works at the Bay, and indeed there is hope that something can be done to better protect it.

[444] Apart from its farming use, the Terawhiti area is chiefly known for its almost entirely unsuccessful gold mining period from the 1860s into the early 20th century. There are traces of this activity to be found across much of it, but three particular sites were mentioned in the evidence. The *Erin Go Bragh* mine remains are not on the project site, but are said to be on the Warren land in South Makara Road, close to its boundary with Terawhiti Station. Meridian's archaeologist, Ms Mary O'Keefe was not able to obtain consent to visit the site. Dr Warren, Mr Luke and Mr Sutherland expressed general concern that vibration or pressure from earthworks on the ridge above the site might damage it, but in the absence of more specific information we cannot assess whether that might be so.

[445] The *Makara Pioneer* mine adits and shafts still exist on the steep ridgeline near the proposed site of turbine H13. The existing road passes in front of its eastern adit. Despite Mr Luke's view to the contrary, the construction of that road must have, we accept, destroyed the mullock, or tailings, heap that would have been in front of the adit. That road will have to be widened to 10m to allow construction of the southern part of the H road of turbines, and that will mean cutting off the first metre or so of the adit, which is about 120m long. There is no other means of access to the southern part of the H road. As Ms O'Keefe puts it *...The effect on the site is significant, but this effect is mitigated by the fact that it is occurring in the part of the site that has already been modified.*

[446] Of the mining sites, the most significantly affected will be the site of the *Albion Battery*. This is in Black Gully, which runs north from Oteranga Bay. There will be no turbines there, but it will be affected by the road on which major components will be taken to the turbines sites after being unloaded from barges at Oteranga Bay. When the *Albion Mine*, on the ridge west of the valley, was operating ore was brought down the hillside to the Battery to be processed. Ms O'Keefe describes the site as accessible, highly visible and generally unmodified. It is, she says, *...the jewel in the crown.* The existing 4WD road follows the line of the old bullock track through the battery site, and it is this road which is to be widened for component transport. No other route, avoiding the Battery site completely, is possible. The road must either go through the middle of the site, as at present, or around the eastern part of it. Either has drawbacks in terms of effects on the site. In the end, the Historic Places Trust, and the Commissioners at first instance, opted for the direct route which will involve constructing long gentle ramps on either side of the existing embankment to allow the road to run over it. Ms O'Keefe at first favoured the eastern route, which would have involved the

destruction of the site of the mine manager's house, but is happy to now endorse the direct option. That is the proposal before us. It will result in less actual destruction of archaeological material, but will be *...a significant visual and interpretative disruption.*

[447] *Inappropriate use and development.* Locations and values falling within s6(a), (b) and (f) are to be *protected* from *inappropriate* use and development. As the Court noted in its decision in *Unison Networks Ltd v Hastings DC*[24], the term *protected* hardly requires discussion, but *inappropriate* does. Early in the life of the RMA the important judgment in *NZ Rail Ltd v Marlborough DC*[25] put that term into the context of the purpose of sustainable management. Greig J said:

> *The recognition and provision for the preservation of the natural character of the coastal environment in the words of s6(a) is to achieve the purpose of the Act, that is to say to promote the sustainable management of natural and physical resources. That means that the preservation of natural character is subordinate to the primary purpose of the promotion of sustainable management. It is not an end or an objective on its own but is accessory to the principal purpose.*

And later:

> *It is certainly not the case that the preservation of the natural character is to be achieved at all costs. The achievement which is to be promoted is sustainable management and questions of national importance, national value and benefit, and national needs must all play their part in the overall consideration and decision.*

[448] In its decision in *Genesis Power Ltd v Franklin DC*[26] the Court expressed the view that:

> *Clearly, therefore, an analysis of what is "appropriate" development must also take account of section 7 matters...These are matters to which the Court should pay particular regard; to be "on inquiry" and the test is a high one...*

In coming to its conclusion at para [228], the Court gave effect to that view in this way:

> *Notwithstanding the effects on the coastal environment we consider the proposal to be appropriate in the circumstances of this case. We find that the benefits of the proposal, when seen in the national context, outweigh the site-specific effects, and*

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24 W 58/2006.
25 [1994] NZRMA 70, 85, 86.
26 [2005] NZRMA 541 para [220].

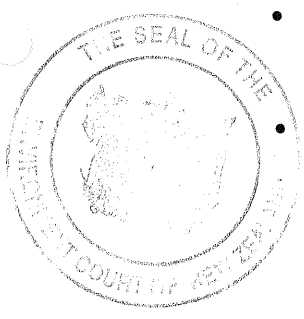
the effects on the local surrounding area. To grant consent would reflect the purpose of the Act as set out in s5.

[449] We mentioned earlier the ...*statutory hierarchy*... between sections 6, 7 and 8, and we agree that the scheme of the Act in assigning ...*national importance* ...*particular regard*... and ...*take into account*... to those sections respectively gives them an internal ranking. But that cannot mean that, where there are conflicting values as between, say, a s6 factor and a s7 factor, the s6 factor *must* prevail because in terms of s6(a) and s6(b) the issues raised have to be placed in the context of whether or not the project is appropriate or not. Also all Part 2 factors are subservient to the s5 purpose of sustainable management and go to inform the overall discretionary exercise required by s5.

[450] Part of the overall weighing exercise therefore is to consider whether establishing a windfarm, enabling the generation of electricity from a perpetually renewable source which emits, effectively, no greenhouse gases, is *appropriate* in the s6 sense. In turn, part of the decision about appropriateness will be the degree to which the areas and values mentioned in s6 are not protected and the degree and permanence of any impairment of them.

[451] Mr Adam Muldoon, West Wind's Development Manager, and Mr Paul Botha, Meridian's Wind Speed Engineering Analyst, set out the criteria by which Meridian judged the appropriateness of the West Wind site. They are:

- wind speed (the wind resource on the site is unparalleled);
- efficient transmission;
- consentability (the choice of the 70 turbines followed a rigorous shaping/ scoping process in which 37 otherwise economic and technically feasible turbines were eliminated);
- constructability (the ability to barge in numerous components to avoid adverse effects on the local community);
- efficient use of capital (Project West Wind has superior economics to any other site and the lowest development costs of any site);
- low site turbulence as a consequence of the site being located adjacent to the coast;
- saleability (the Wellington community is on the doorstep).



[452] Of these the wind speed at the site, efficient transmission and costings, and the proximity to a large city make the project an appropriate one in terms of s6(a) (*the preservation of the natural character of the coastal environment*) and s6(b) (*the protection of outstanding natural features and landscapes from inappropriate development*). Discussing the Guardians' suggestion that smaller turbines and more of them would be more acceptable on this site. Mr Muldoon had this to say:

> *When considering each concern raised, that issue should be balanced against the impact of such a deletion:*
>
> *a. each 3MW turbine generates enough electricity to supply approximately 1600 homes;*
>
> *b. each turbine provides part of the revenue which underpins the overall project viability and in consequence any reduction leaves establishment and infrastructure costs to be met by a smaller number of turbines so reducing the NPV and therefore project viability;*
>
> *c. project effects rising from the construction period and from the establishment of roading, transmission, and other infrastructure change very little if a turbine is deleted;*
>
> *d. the available energy resource will not be captured in any other way and in consequence there is inefficient use of resources;*
>
> *e. for each turbine that is not constructed other energy sources will have to be utilised, with probable carbon generation consequences.*

And he also said this:

> *To illustrate the efficiency of the current layout a comparison can be made between using the V80 turbine, and an alternative approach which would use a smaller V52 900kW turbine on the site. Because the site topography is limiting, and the site has been optimised based on roading layout, 122 smaller turbines are able to fit onto the same site in the second scenario. This higher number of turbines would increase the visual impact as there would be more turbines and they would appear to rotate faster, due to their shorter blade length compared to the larger turbines. In addition, the economics of the site are detrimentally affected to a substantial extent. Because the same number and length of roads are needed, the same electrical infrastructure is required and more barging trips are required to bring the larger numbers of turbines to site, the site yield drops by 18% per annum, and the NPV goes from being*

positive to negative. There would no longer be an economically rational project if the smaller turbines were adopted.

In our view such evidence points to the fact that the natural character of the coastal environment and the preservation of the outstanding landscape are not to be preserved at the cost of what is an appropriate development in this location. We conclude that the appropriateness of the overall site must in this instance take precedence over the preservation of the natural character of the coastal environment and an outstanding landscape.

Section 5 – sustainable management

[453] In a case such as this, with such a matrix of matters to consider, it is worth setting out s5 in full:

> Purpose
>
> (1) The purpose of this Act is to promote the sustainable management of natural and physical resources.
>
> (2) In this Act, sustainable management means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while—
>
> (a) Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and
>
> (b) Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and
>
> (c) Avoiding, remedying, or mitigating any adverse effects of activities on the environment.

[454] Drawing together the threads of what we have discussed, it is our overall judgement that, subject to the matters to be mentioned shortly, the use and development of the site's land resource, and the use of the wind resource for the production of electricity will undoubtedly contribute significantly to the economic wellbeing of the community generally. Further, it will do so in a way which will help sustain the potential of natural and physical resources to meet the obvious needs of future generations. We are conscious that s5(2)(a) excludes *minerals* (which includes fossil fuels) from its ambit, but in contributing to a lesser use of fossil fuels for electricity generation there will be a contribution to sustaining resources such as air, land and water. Similarly, there will be a contribution to safeguarding the life-supporting capacities of those same resources. All of that is positive. The weighing exercise arises when consideration moves to s5(2)(c).

[455] The site is a large expanse of rural land which will be drastically altered visually by the building of a windfarm. The site as a whole can be viewed from many elevated locations, somewhat distant, particularly when approaching over the hill from Karori and from other vantage points around Wellington. This significant visual effect will be apparent even with fewer turbines and would not be significantly aggravated by a greater number of turbines. The mere location of multiple turbines on this site will alter dramatically the current rural appearance of the site. Forestry a permitted activity over the site would also transform the appearance but it must be said that wind turbines will give the site not only a different appearance but also a new meaning somewhat more surreal, more purposeful and moving, and certainly of note. It will be seen as Wellington's electricity supply.

[456] That requires an answer to the question: *Where should the weighting lie between the benefits for the wider environment, and the disbenefits for the local environment and those who live and work within it?* Put another way, acknowledging that every desirable outcome comes at a cost, how much of the environmental cost of this outcome should the local environment and its inhabitants reasonably be asked to bear?

[457] With the proposal as it stands there is a significant cost, in terms of amenity values, for the local environment and residents. In terms of landscape and visual amenity terms it is reasonably easy to imagine. Noise is less easy. Meridian made the decision (which we do not criticise) to keep turbines away from the western escarpments and ridgelines to minimise issues about the coastal environment. That is well and good, but the result of doing so is to place turbines in close proximity to houses, in Makara village in particular. In our view, in respect of some houses and some turbines, the imposed environmental cost is too high and the weighing required by s5(2)(c) swings the pendulum in favour of the local environment.

[458] The evidence established that Meridian announced the location of the turbines and publicly notified the affected residents later. We understand the message to the public was that the project components are not negotiable and are indivisible which could be seen as binding the Court's discretion as to whether there might be some middle ground.

[459] As will be apparent from what we have said, we accept that there are concerns about a good number of turbines on various adverse effect grounds. In our judgement however the

benefits to be gained from the project in terms of the promotion of sustainable management of natural and physical resources in terms of s5, as informed by s6 and s7 factors we have reviewed, outweigh those concerns in respect of the great majority of turbines. In respect of some however, their effects on the residents of Makara remained one of our central concerns about the project.

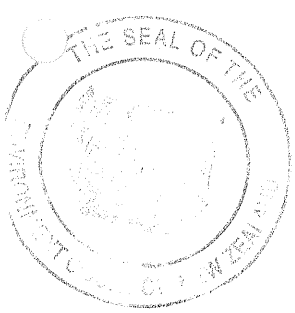
Legal Developments 2007: The Court's Minute of 30 January 2007

[460] After considering a number of options we eventually resolved how to proceed with the matters outstanding by issuing a Minute to the Parties on 30 January 2007. That stated:

> 1) After careful thought and analysis we have concluded that if we are to grant the resource consents as applied for, then there are some turbines which may have unacceptable adverse effects on the amenity values of some residents, or groups of them. The turbines we have concerns about are B02, B03, B05, D10, D11, E01, E02, E03, E04, H01, H02, H03, H04, H17, H18 and H19. They appear to be either so close to residents, or dominate so much of a skyline or a particular field of view, that their intrusion may be beyond what is reasonably acceptable.
>
> 2) Before moving to make a final decision, we consider that we should offer Meridian the opportunity to reconsider the identified turbines. Rather than facing the risk of having some of them removed altogether, or consent refused, Meridian may wish to take the option of relocating all or some of the turbines to sites where they are not, from any existing house or the site of any dwelling for which there is an existing resource consent, more visible than the remaining turbines. It might also be advantageous for Meridian to consider relocating the turbines to avoid the possibility that these turbines might be turned off at times to meet the noise conditions agreed between the parties.
>
> 3) Accordingly we invite Meridian to consider a revised layout of the identified turbines. Any revised plan and consequential adjustments to be lodged by Meridian after appropriate consultation with the parties, not later than 30 March 2007. Any reply is to be lodged within 20 working days of the date of lodgement.

[461] These concerns arose from the facts that:

- the WCC/WRC Hearing Commissioners had variously found E04, D07, D08, D10, D11, D12, H01, H02, H03, and H04 would cause effects that were significant and adverse. We have variously found similarly – with additional turbines suggested.
- Meridian was consistent throughout the hearing that its proposal was non-negotiable and non-divisible (because it had been scoped initially by experts resulting in the deletion of 37 turbines);
- Meridian's management had announced the location of the turbines shortly before the Councils' hearing commenced – and, although Meridian consulted widely about the benefits of wind power (in this case particularly at Makara)



those most potentially affected – the residents of Makara themselves – felt altogether disenfranchised by the process – only being consulted on actual turbine location after and not before the shaping/scoping exercise.

- Ms Lucas had stated in her evidence-in-chief that the deletion of a number of turbines and a reduction in height of the turbines could provide an acceptable mitigation of effects.
- Mr D Bennett, a Guardian witness, said from his professional work experience in the energy industry developing oil and gas fields in New Zealand, Denmark, and elsewhere, that the Danish and European situation does not relate directly to that of Project West Wind. In responding to Meridian he acknowledged:

  > *Yes there are many distributed smaller turbines* [in other countries], *often nearer individually to residents, but nowhere is there an agglomeration of giant turbines placed in such overwhelming proximity to the residents in this type of environment.*

  Both he and Mr G Goodsir, also a Guardian witness and employed internationally in the energy industry, were concerned that Meridian had not engaged directly with the Makara community to facilitate solutions.

[462] In the event Meridian responded positively to the Minute and sought a Judicial Conference to seek clarification on a number of issues – as did the other parties. At the conference we made it clear that the focus of our concern was the impact of the named turbines on the residents and not on other issues.

[463] As an added settlement attempt, mediation as to possible alternative locations of the identified turbines took place between the parties in March 2007 – but was unsuccessful. Further timetables were then set.

Meridian's Memorandum of 12 March 2007 and Response to the Court

[464] Meridian responded to our request with the following detailed design work for the 16 identified turbines:

- A reduction in the maximum height of all turbine structures to 111.2m, with an average further reduction of 1.5m through deeper base excavations
- Locations changed (to varying degrees) for turbines B05, D11, E04, E08, H13, H17, H18, H19, K04, K05 and K07
- Turbines E01, H02, H03, and H04 removed

- Four new turbines added to replace lost generation capacity at greater distance from residences: O01, H14, H30 and G09.
- Four of the Court identified turbines to remain: - H01, D10, E02, and E03. Due to the average 12% reduction in turbine height Meridian considered that the visual impact of these 4 turbines will be greatly reduced, and that through the removal of turbines E01, H02, H03 and H04 the visual impact of H01, D10, E02 and E03 would be still further reduced.
- One additional turbine, E08, relocated
- The B series turbines (B02, B03, B05) identified by the Court have not been moved (save for B05 - slightly) but Meridian considered that their height reduction in accordance with the overall reduction will lessen their effects, and Meridian said that the visual simulations have shown that these 3 turbines are essentially not visible from residences. Meridian did later acknowledge that they were visible from Smiths Bay.

[465] The Guardians in their memorandum in reply intimated they would not oppose the addition of turbines O01, H30, and G09 to replace E01, H02, H03, and H04.

- ***Issues Arising - Jurisdiction***

[466] The Councils' memorandum of 17 April 2007 covers the issue of the Court's jurisdiction to consider Meridian's proposed amendments to turbine location. The Councils helpfully summarised the (by now well known) case law and listed the factors to be considered as follows:

- does the activity increase the scale or intensity of the activity
- does it exacerbate or mitigate the impacts of the activity, both in terms of adverse effects and in terms of the plan and other superior documents
- would the parties who have not made submissions have done so if they were aware of the change?

[467] We noted in our Further Directions of 21 March 2007:

> In response to the last point first, any alteration to the turbines that may mitigate their effects is within the Court's jurisdiction as long as the new development is within the present scope of the notified application. The Court will not be in a position to consider whether the amendments are within its jurisdiction until it receives Meridian's amendments.

[468] The Councils are of the opinion that the amendments are within the jurisdiction of the Court. Counsel for the Guardians, R Paul and C Moore, while not wanting to enter into a in-depth analysis of the question, doubt that the Court has the power to grant, or even to consider, such amendments.

[469] If we can find however that Meridian's proposed amendments to the turbine locations:

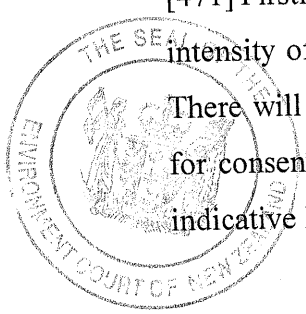
- do not increase the scale or intensity of the activity;
- mitigate the adverse impacts of the activity;
- would not have drawn any further submissions;

then we consider the Court has jurisdiction to consider the amended turbine locations, even though the amendments were made after the application was notified.

[470] Meridian's original proposal involved:

> **4.1 Proposal**
>
> The proposed wind farm will consist of up to 70 turbines, resulting in a combined site generation capacity of up to 210MW, and will be able to generate enough electricity to power up to 110,000 average homes. One "V90" wind turbine can generate 3.0MW and meet the yearly power needs of up to 1581 average homes. The layout of the wind farm is shown on Drawing 1 (Appendix A).....
>
> **4.3 Wind Turbines**
>
> **4.3.1 Turbine Details**
>
> The turbine locations may need to be moved slightly to accommodate any actual ground conditions that may be uncovered during the detailed design, geotechnical or construction process. Therefore in accordance with the usual practice of describing wind farm applications, consent is sought for 70 turbines up to 125m in height and located within 100m from the indicative locations shown on the Plan contained in Appendix A. This flexibility is not proposed to enable any turbines along the Quartz Hill/Mt Misery ridge to be moved closer to existing dwellings in the Makara Valley.....

[471] Firstly, it is clear to us that the proposed amendments do not increase the scale or intensity of the activity in the broadest sense. Meridian proposed 70 turbines, within a site. There will still be 70 turbines, within the site. At the more detailed level, Meridian applied for consent for turbines up to 125 metres in height and located within 100 metres from the indicative locations shown on the plan contained in Appendix A to the application. Therefore,



any turbine location within 100 metres of the indicative locations in Meridian's application will be within the scope of the application. Consequently, any change made to a turbine location in the Meridian's memorandum of 23 March 2007, if the horizontal movement is less than 100 metres, is plainly within our jurisdiction to consider. Also, any reduced turbine height is within the scope of the application - none of the parties suggested a reduction in height of any turbine is outside jurisdiction.

[472] Mr Hughes submits that, because turbines H17 – H19 have been relocated for clearance reasons, rather than for visual amenity effects, these are not valid relocations. Counsel for the Guardians, R Paul and C Moore, also notes that some turbines other than the ones listed by the Court have been moved.

[473] As discussed, any movement of turbines within 100 metres of the indicative locations on Appendix A to the application is within the scope of the application.

[474] Secondly, if the adverse effects identified by the experts are mitigated by the amended proposal, then the amendments are within jurisdiction. In the Minute of 30 January 2007, that we asked Meridian to consider relocations of turbines that we considered may have significant adverse amenity effects on residents. If the amended turbine locations mitigate the adverse amenity effects on residents, then we can consider them within our jurisdiction to consider. The resident groups argued, in essence, that we could not approve the amended turbine locations (some or all of them) without hearing further evidence about the effects of the new and amended locations. We will address this aspect further below.

[475] Lastly, the question may be asked: would any person who has not lodged a submission have done so if they were aware of the change? Meridian applied for a maximum of 70 turbines, with a maximum height of 125 metres, on a very large site. More than 4000 submissions were received by the Councils. In the context of such a large project, we are of the opinion that no one else would have lodged a submission if they had been presented with Meridian's amended proposal, as compared with its original. This case is similar to that of *Haslam v Selwyn District Council*[27], albeit on a much larger scale. We do not believe that the amended proposal would have resulted in further potential submitters.

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27 (1993) 2 NZRMA 628.

[476] And in fact, as Meridian did not reveal the precise proposed turbine locations until just before the Council's hearing, it is implausible that anyone else would have lodged a submission. The submitters were already lodging submissions without knowing exactly where the turbines would ultimately be located. The amended proposal therefore would not have attracted further submissions.

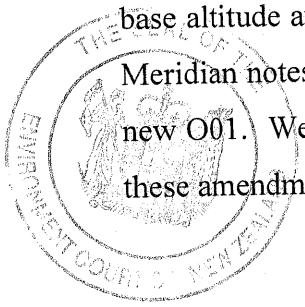
[477] We are satisfied that the amended turbine locations within 100 metres, and any reduction in the height of the turbines is within the scope of the application, and we can consider these amendments. Similarly, the amendments proposed to the layout to further mitigate identified adverse effects remain within jurisdiction. We are also satisfied that the amended proposal would not have drawn any new submitters.

Sufficiency of evidence

[478] Quartz Hill Trust submits that, in the absence of agreement about turbine relocations on and around Quartz Hill, and in the absence of any rigorous process to test Meridian's submissions, the Court ought to accept Meridian's statements that its proposed changes have the mitigating effects claimed only where the further information provided is abundantly clear. Counsel for the Guardians, R Paul and C Moore submitted that the Court is not in a position to enter into an exercise to determine "who can see what from where and how much" without further evidence. In counsel's opinion, this must be the subject of further evidence.

[479] We do not agree that the position is as absolute as that. If we cannot, on the evidence already available, determine that each amended or new turbine location mitigates adverse effects, then there are obvious difficulties in considering the amended turbine locations, at least without further evidence as to the mitigation Meridian claims. In general terms however, we are satisfied that we have sufficient evidence to make those assessments.

[480] In particular, the Trust (and Mr Hughes) note the absence of precise details of the new elevation of all turbine bases. Meridian supplied the base height changes in its reply memorandum. Turbines H13, K04, K05 and K07 all show an increased height due to higher base altitude at the new location. All but K07 have moved more than 100 horizontal metres. Meridian notes that these amendments have been made to accommodate the new H14 and the new O01. We will return to whether we consider we need further evidence on the effects of these amendments.

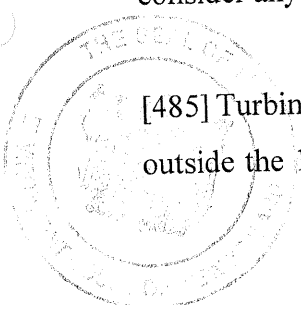


[481] The Trust also submits that Meridian's submission and evidence about the visibility of the B02, B03, and B05 turbines should be disregarded. Mr Hughes was also concerned at the submissions Meridian made about visibility of these turbines, particularly by the Smith's Bay residents. The Guardians, C Moore and R Paul were also.

[482] We heard evidence on the visibility of the B series turbines at the hearing. We discuss that issue elsewhere, and discuss how Meridian's proposed relocations might affect those findings. Only B05 has been moved, and only by 4m. The three turbines' heights have been reduced. For the reasons we set out above, we consider these amendments are within scope and because the amendments to these turbines are so slight, we do not require additional evidence to assess their effects which was apparent in the original evidence.

[483] The Trust also notes that Meridian has not supplied updated noise prediction maps. Mr Hughes was also concerned about the noise effects of the revised layout. We do not consider we need further evidence on noise for the amended turbine locations. Meridian's new locations include only three which place the turbines closer to the residents. If they make it more difficult to meet the noise conditions, then the consequences will be for Meridian to sustain, for example, by shutting down the offending turbine.

[484] Over the course of the hearing we heard extensive evidence from the parties. Meridian's application, understandably, did not include exact locations of turbines, volumes of fill, turbine type, and so on. Until Meridian receives its consent, the cost of the extra detail work is not, presumably, warranted in its view. Therefore, the evidence presented was sometimes of a general nature, concerning groups of turbines rather than specific turbines and distances. The evidence was at least sufficient for us to determine the effects of a turbine anywhere within 100 metres of the application's indicative locations. We are satisfied therefore that, in general, we have sufficient evidence to assess the relocated and new turbine locations against that evidence. We discuss here the turbines that are now proposed that fall outside the application envelope, or are now higher than initially predicted, to see if we consider any special evidential issues arise.



[485] Turbines D11 and E04 have been moved in response to the Court's Minute. They are outside the 100m application envelope, and therefore are only within our jurisdiction if their

relocation results in the mitigation of effects. We do not consider much could be added to the extensive noise, visual amenity and landscape issues by way of further evidence. Also, to bring the issue into perspective, these two turbines have been moved 146.3 metres and 157.8 metres (horizontally) away from the application indicative position. This is 50 metres outside the application envelope.

[486] Counsel for the Guardians and R Paul and C Moore mention E08 which has been moved only 105 metres from its original indicated location, which is only 5 metres outside the application window. Meridian responds by noting that turbine E08 is now further away from the closest house. But if the parties do not wish to have the mitigation of turbine E08 now proposed, turbine E08 can remain in its original position.

[487] According to Meridian's memoranda, E08 is now 104 metres further away from the nearest house. As well as the lower structure, its foundation base height has been reduced by 1.9 metres. We consider that Meridian has proposed this move, as they suggest, to mitigate adverse visual amenity effects. Given the minor horizontal distance (4m) the turbine has been shifted outside the 100m application envelope, we have sufficient evidence already before us to assess the impact of this amendment.

[488] Counsel also mentions turbine H13. Counsel says this has been moved some 40 metres vertically to the crest of the ridge, thus becoming more visible, not less. Meridian responds by noting that the proposed new location is 121m to the west of its original position, in the horizontal plane. The new point is 25m higher in elevation. The new location is 123 metres further from the nearest residence. Meridian says that although this achieves further mitigation of H13, the main mitigation effects relate to the overall adjustment of sites and roading. The relocation of H13, and the new H14 will result in the access road continuing northwards, on the western side of the ridge (as far as possible) to H13, H11, and H10. This eliminates the previous need to upgrade the existing farm track in the area between H14 and H10, which is a significant mitigation of the impact of road cuts in this area of the project.

[489] We consider that we have ample evidence to allow us to accurately assess the effects of the proposed new location of H13 and the new H14. There was much evidence on the effects of the H series in general, and the proposed relocation and new turbine location are not so far

removed from the rest of the H series that we cannot adequately extrapolate that information for those turbines.

[490] Counsel notes that, according to Meridian's visual assessment map, Detail C, turbine H20 has been moved. The turbine is not listed in the table to Meridian's first memorandum, so we cannot find a reason from Meridian for its relocation. We do not know how far it has moved from its application indicative location. If it is more than 100 metres, then we consider it should be moved back within the 100 metre envelope, but no closer to residences than the original indicative location.

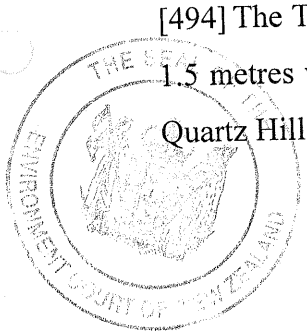
[491] K04, K05 and K07 have been moved to accommodate the new turbine location, O01. K04 and K05 have been moved more than 100m – outside the application envelope. K04 and K05 have new heights of over 30 metres higher than previously predicted. K07 has been moved 63m, but is only 0.3m higher. All three are also closer to the nearest residence, but still all three are further than 3 km away.

[492] The movements of the K series are the most significant. The K turbines appear to have been moved the largest horizontal and vertical distances. The relocated K turbines however are still within the K line or cluster. We consider that, with the extensive evidence we already have on the K turbines and their effects, we have enough to assess the effects of these relocated turbines.

[493] G09, H14, H30 and O01 are the new turbine locations to replace turbines, E01, H02, H03, and H04, which have been removed to mitigate the effects of turbines near residences. They arise as a consequence of Meridian's proposal to mitigate adverse effects. They are within, or extensions of, existing clusters. None is isolated, or in a wholly new area of the site. We consider that the evidence we have on the other turbines in particular clusters is sufficient to determine the effects of these new locations.

Excavation

[494] The Trust and Mr Hughes submit that the reduction of all base heights by an average of 1.5 metres will result in additional excavation in the order of 20,000m^3, and much of that on Quartz Hill.



[495] Meridian submits that its evidence throughout all stages for the consent applications has been that the volumes sought for fill areas are the worst case estimates for fill. That is, not all of every fill area is required for disposal of fill. Therefore, in response to the Trust's specific concerns about E08 and the nearby fill area, Meridian submits that both the location of E08 and the disposal of all fill are practicable.

[496] In response to the suggestion that an additional 20,000m^3 (or any other additional figure) will be needed, Meridian submits that, at each site, a *worst case volume* excavation has already been factored into the calculations for cut and fill areas. In consequence, there is no increase in overall volumes, and there is ample room in the disposal areas to accommodate it.

[497] Counsel for the Guardians, R Paul and C Moore makes a different point. Meridian has said excavation requirements for turbines located on hilltops will mean it will be reducing the turbine heights by an average of a further 1.5m. Counsel submits that what cannot be inferred from this statement is the impact this will have in terms of the visibility of excavations.

[498] Meridian responds by saying that full evidence was provided at the hearing on the issue of visibility of excavation. Excavations are to be situated wherever possible so that they are on ridgelines and on the seaward side of ridges.

[499] We agree that full evidence was presented about excavations at the hearing. We consider we have enough evidence about the impact of excavations to be able to make determinations about the impact of the proposed amendments.

Geopreservation sites

[500] The Trust submits that turbines D11 and E04 have been *nudged* into the geological preservation areas. The Trust also submits that E08 has been moved directly into a designated fill area. The Trust submits that rather than run the risk that the relocation exercise will bring about unintended adverse consequences, the offending turbines, H01, D10, D11, E04 and E08 should simply be removed if they cannot be relocated some substantial distance away on the site. Meridian responds that the geopreservation areas were put forward to address concerns, including those raised by the Trust, about a possible loss of opportunity for scientific research in the future.

[501] Even if the relocation of turbines mitigated amenity effects, we would be loath to approve new locations that have effects on other values.

[502] Meridian further suggests that, even if the proposed areas were affected by the proximity of turbines (which is not confirmed) then the promised extent of geopreservation areas could be assured by way of a condition that there is to be no lesser area in the final areas than that originally proposed, and Meridian would consent to such a condition. Meridian notes that the importance of the specific areas proposed was that they are free from competing uses and contain unmodified soil profiles. We have discussed the geopreservation evidence in depth elsewhere. We consider this concern can be taken care of by a condition as Meridian proposes, but with the proviso that the areas be free of competing uses and have unmodified soil profiles.

"New" roads

[503] Mr Hughes submits that the revised plans lodged by Meridian show extensive new roading. Meridian replies that Mr Hughes has misunderstood the map provided. The lines he refers to as "roads" do not depict new roads, but are part of the underlying map on which the turbine locations and movements have been plotted.

[504] Meridian says that the proposed new turbine locations O01, G09 and H14 will require small roading modifications and additions as a consequence of the relocation. On the assumption that turbine E01 is removed as proposed, its access road will also be eliminated.

[505] We accept Meridian's submissions on this matter. In any case, if such substantial new roading was proposed, Meridian's application (and therefore, if granted, consent) for excavations and fill would not cover such roading, and Meridian could not undertake it.

Ecology And Heritage Features

[506] The Society acknowledges that the particular issues of concern identified by the Court in its Minute of 30 January were not the subject of evidence from the Society. It submits that it is difficult for the Court to fully assess the proposals relating to H13 and H14 and associated earthworks in the absence of evidence as to the full ambit of these proposals, and their potential ecological impact and impact on heritage features. In the absence of such evidence, the Society submits that careful conditions would need to be imposed in respect of these

proposals. It is also submitted that the proposed shifting of H19 to a slightly lower point on the western ridge of Waiariki catchment (and associated earthworks) would be inappropriate because of the ecological issues identified in the issues before the Court.

[507] Meridian submits in reply that there has been extensive evidence about the ecological values of the site in both general and specific terms. Conditions have been suggested as a means to address any residual concerns, and Meridian would accept appropriate conditions.

[508] We have discussed ecological and heritage values of the site elsewhere. We are satisfied that we have sufficient evidence to assess the ecological and heritage effects of relocated H19, H13 and the new H14. There will be no need to hear further evidence on these topics.

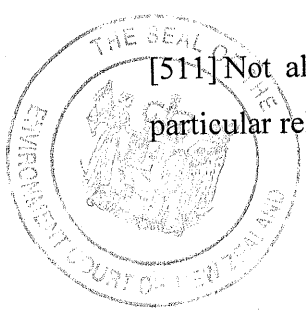
Coastal Environment

[509] The Society also submits that the siting of H30 might raise an issue about cumulative excessive intrusion into the coastal environment. It should be declined. Meridian submits that the Court has ample evidence upon which to assess the landscape values of the location of the proposed new turbine at H30. We agree. We heard extensive evidence about the effects of the turbines on the coastal environment, which we have discussed elsewhere. H30 is located slightly inland and in reasonably close proximity to H28 and H29. As such it is in the coastal environment, which is not an inappropriate location for this type of activity.

Parties' overall views

[510] Some parties commented that Meridian has not moved some turbines and has not made enough effort to mitigate effects on residents. Some parties suggested that Meridian should have considered different or smaller turbine types. We have not considered those submissions here. The Court's Minute was an invitation to consider relocation of some turbines. Meridian moved the turbines it considered could be relocated, and it still considers the original layout is consentable. If Meridian has not done enough, in the Court's opinion, to mitigate adverse effects, then the Court will decline the consent, or refuse specific turbine locations.

[511] Not all parties disagreed with all relocations, and some parties were concerned with particular relocated or new turbines more than others.



[512] Of the relocated turbines within the Trust's area of concern, the Trust supports the removal of H02 and E01. The Trust does not support the proposed new G09, submitting that the Court has insufficient information such as overall height, visual simulations etc, to assess its effects. For the reasons set out earlier, the Trust does not approve other amended locations either.

[513] Mr Hughes supports the removal of H02 and E01. Mr Hughes does not support the new G09 or H30, on the basis of insufficient evidence. Despite the lack of evidence, Mr Hughes has no issue with the proposed O01. Mr Hughes does not support the new H14 location, as it has unacceptable visual effects on the residents.

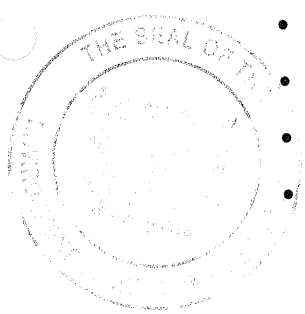
[514] The Society is of the view that H19 and H30 are inappropriate in their locations and should be declined. They also submitted (as discussed earlier) that the Court does not have sufficient information on H13 and H14, and careful conditions should be imposed.

[515] Overall, the Guardians, R Paul and C Moore could see very little difference in the visual impacts between the original and amended proposal. The changes would appear to be so insignificant that there would not be any appreciable difference in terms of dominance and there is virtually no reduction in impact. Counsel advises that the Guardians would not oppose the addition of turbine O01, H30, and G09. Having said that, counsel is aware that others have concerns regarding these turbines. The Guardians consider H14 is unacceptable because of its impacts on the residents on South Makara Road. These parties' overall view is that all 39 turbines they have identified should still be refused consent.

Criteria for Assessing Visual Amenity Effects on Residents

[516] From the evidence we determined that a combination of several conditions could exacerbate the effects of the turbines on residential amenities. For convenience we reiterate what Mr Rough had to say:

- views – expansive or constrained
- height – is turbine elevation same as viewpoint or is a turbine dominant or prominent in its setting?
- orientation – facing north-west, e.g. generally facing into the setting sun
- what can be seen – full turbine, blade tip or nacelle
- distance
- backdrop to turbines



- number of turbines
- sky conditions – if background blue is more visible, if cloudy less
- screening

[517] From the evidence also we determined a number of criteria that might mitigate against dominance from the identified turbines:

- alternate views (views constrained by topography)
- vegetation (complex or otherwise)
- complex foregrounds
- house design and use

Discussion

[518] Mr Rough identified that house design would alter/limit the views of the turbines from the inside of various dwellings he entered. While some photo simulations might show turbines prominent on the skyline in an expansive view, the number of turbines will be limited when seen from the inside.

[519] But the definition of *amenity values* in s2 Resource Management Act does not limit them to what can be perceived only from inside houses. As noted earlier, the Makara residents live in a rural lifestyle area to which (as they evidence disclosed) they are deeply attached. All of the properties we visited or saw from the road had obvious signs of outside living whether the activities were horse riding, small-scale farming, or extensive gardening. And all of them, apart from intervening trees or shrubs in particular locations, have uninterrupted views of a ridgeline which supported the usually dominant/prominent fleet of the H series turbines.

[520] Screening from vegetation is of not much assistance either in such an environment. The Truescape *View from 301 South Makara Road – Deck* – Truescape Photopoint 31, is a case in point. There H17, the nearest turbine, is currently not visible – the view is interrupted by trees (one of which is storm damaged). As Mr Rough observes, trees are ephemeral – they can be storm damaged or chopped down- he could only assess the amenities which he saw *...where is, as is.* Given that we are looking at a project with a current life of 20 years at the very least, screening vegetation for turbine mitigation is something we cannot necessarily rely on.

[521] The other difficulty of fixed viewpoint simulations (of which we had extensive evidence) is that when residents move around their properties they may encounter greater or lesser turbine vistas – as in the case of the residents who live at 301 Makara Road and who are subject to the whole panoply of the H series – as are others.

[522] Ideally, the H series should not be along this ridgeline in its entirety. But we are ever mindful that the project's viability is dependent on as many turbines as possible remaining in optimum windspeed sites.

[523] Having made these additional comments we move to an analysis of the Groups 1-3 revised turbines in the order as identified by Meridian.

Group 1 Series: D10, D11, E01-E04, H01-H04

[524] The Court identified D10, D11, E01-E04, and H01 – H04 as requiring relocation or removal. Meridian however have agreed to the removal of the H02, H03, and H04 turbines. Because of this the company considers the visual impact of H01, D10, E02, and E03 would be reduced, and still further reduced after the heights of the turbines are lowered. Meanwhile, E04 and D11 are said to be substantially relocated by their horizontal movement.

Discussion

The H and D Turbines

[525] *403 Makara Road – Deck* – Truescape Photopoint 32. Most of the H Series in this location were particularly identified as significantly adverse – along with D10 and D11. Mr Rough identifies with Photopoint 32 as expressive evidence taken from the north-west corner of the property, that the view is westwards into valleys below the skyline ridge from the north-west corner of the veranda of a north oriented building. The hill slopes in the view are covered in scrub and regenerating bush, with stands of conifers on the lower slopes. Nine turbines are visible, 3 partially and 6 with towers, nacelles and rotors in view. The nearest turbine is D11 – 1.08km away. Mr Rough concludes that 7 turbines are prominent and their overall effect from this property is substantial. But he considers that the view is away from the turbines, and one which is broad and relatively expansive and therefore not invasive.

[526] Ms Lucas however provides the opinion that 7 turbines in this location would step along the summit (ridgeline) in full view of this house appearing (naming D10, D11, D12, H01, H02, H03 and H04) almost at the boundary. In her opinion, the large scale of the structures and the movement of the rotors would dominate the experience of this place.

[527] On this aspect, we do not agree with Mr Rough. His viewpoint assessment is only one that may be made as the residents move in and around the property and their house. Comparing the original and the revised Truescape Photopoints 32 as well as the evidence of Mr Rough and Ms Lucas, we consider that while D12, D07 and E08 in this location do not have a significant adverse effect (because they are 'parts' of the turbine structures), even with the removal of the H02-H04 turbines, H01, D10, and D11 are still significantly adverse structures. In this case the Court's site visit was illuminating – for the topography of the site provides a basin-like shape to the Paul property and inevitably draws the eye to the skyline to the full turbines located there. Moving D11 146.3 metres would really make little discernible difference. Lowering the height of the remaining structures does not assist either. Accordingly, D10, D11 and H01 should be removed.

[528] At *405 Makara Road*, although the blades of D7 and D11 will still be visible, from Ms Lucas's evidence, removing D10 and D11 would also assist the outdoor and indoor living amenities in that location.

[529] *407 Makara Road – Field and Deck* – Truescape Photopoints 33a and 33b. Ms Lucas identifies at least 7 of the large turbines on the Quartz Hill summit would be visible from the field (D09, D10, D12, H01, H02, H03, H04 (the latter through the trees) plus parts of others – starting only 1500 metres from the house. Ms Lucas in her evidence-in-chief considers the Truescape simulation (33a) understates the turbines' visual effect through the apparent flattening and distorting of the topography and structures. Having seen the Paul site at *403 Makara Road* we agree with this assessment also – everything appears in the far distance.

[530] The removal of H02-H04, plus H01, together with the removal of D10 and D11 (although the latter is screened in this case) would improve visual amenities immeasurably in this location. H04 will be deleted from the Photopoint 33b viewshaft entirely.

[531] From *409 Makara Road – Rear Paddock* – Truescape Photopoint 34, Ms Lucas identifies the house and various activity areas from which the residents live, work, and play provide a variety of views across and down the valley seaward. At least 9 turbines would be

highly visible spread across the summit from White Rock Hill to Quartz Hill – made up of the H, E, and D series which begin at only 1500 metres distant.

[532] In our assessment, despite the foreground vegetation, pine plantation, and some storm damaged trees, the removal of turbines E01 and H02 - H04 as planned by Meridian will mitigate some of the adverse effects on this panoramic view. But the removal also of H01, D10 and D11, together with the lowering of the remaining turbines, would greatly assist further.

[533] Removing D11 (along with the other modifications proposed by Meridian) will also have a positive effect for *474 B Makara Road – Front of Deck*, Revised Truescape Photopoint 37b.

Finding

[534] While there has been considerable improvement from Meridian's revision, we conclude the removal of turbines H01, D10, and D11 are required to sufficiently mitigate the adverse visual amenity effects of these turbines.

The E Series

[535] The Court identified difficulties with E01 – E04. Meridian responded by removing E01 altogether and reducing the overall height of E02 by 15.3m and E03 by 14.5m. E04 is also moved horizontally 157.8m, while E08 is moved horizontally 105.4m. The Court had not included E08 in its list but we note Ms Lucas had identified E08 in her list of turbines causing adverse effects in the Makara Valley Catchment when discussing *403 Makara Road – Deck* – Truescape Photopoint 32.

Discussion

[536] At *590 Makara Road* – Truescape Photopoints 39a and 39b, the enclosed garden has been planned and managed around having one vista to the hills. From the garden spaces, through this selected vista, various turbines would be prominent on the Quartz Hill summit; particularly E04 fully displayed just 1390m away, plus several part towers and part rotors. E04 would appear to be very close as seen in the Truescape simulations.

[537] Further north in the valley, *650 Makara Road* – Truescape Photopoints 41a and 41b, the views from the indoor and outdoor living spaces are directly up to the slopes and skyline of Quartz Hill. Four full turbines just around 1500m distant (E01, E02, E03 and E04) plus

several towers and rotors and parts of rotors would be clearly visible on the summit. Mr Rough had concluded that from this location there were potentially substantial effects on the residents. Ms Lucas considers significant adverse landscape effects would result.

[538] North toward Takarau Gorge Road is *736 Makara Road.* From the house and garden the residents would see a number of turbines including some on the seaward side of the ridgeline. According to Ms Lucas, the full height of E01 and E04 would be particularly prominent – around 1300 - 1500 metres distance respectively from the house.

[539] Bearing this evidence in mind, overall we consider Meridian's revised treatment of the E series to be beneficial to the residents at:

- *301 South Makara Road – Deck* – Truescape Photopoint 31. There is minor change in the vista by the relocation of E04. It is only part of the peripheral view. H04 however has gone entirely leaving H05-H09 very much as before.
- *474 B Makara Road – Front of Deck* – Truescape Photopoint 37b. There are no adverse effects left from the E series.
- *588 Makara Road – Front of House* – Truescape Photopoint 38. The adverse effects of the E series have been reduced or lowered with the removal of E01 with the more distant E04 causing a residual but not major effect.
- *590 Makara Road – Rear Garden* – Truescape Photopoint 39a. Only turbines E03 and E04 cause residual but not major effects. The removal of E01 assists in simplifying a complex landscape.
- *592 Makara Road – Concrete Path* – Truescape Photopoint 40. The E series in varying conditions appeared very close in the original simulation. Under the revised layout only the tips of the blades of two turbines are left hardly discernible.
- *650 Makara Road – Balcony* – Truescape Photopoint 41b. E01 has been removed which is a major advantage as it was the most prominent in this location – while E04 is relocated horizontally and also E08. This leaves E02 and E03 with reduced heights and the now distant E04 in the frame. We could not conclude the effect of this remainder is major and adverse.
- *703 Makara Road – Back Door* – Truescape Photopoint 42. The adjustments to E04 and E03 leave no turbine parts in the view.
- *769 Takarau Gorge – Patio* – Truescape Photopoint 45. This was a vista impacted upon by the B, D, and E series on the ridgeline, collectively having a

adverse effect (although Mr Rough says the turbines collectively do not dominate but will be highly prominent and have a substantial effect). On reconsidering the effect of the revised E series only in this vista, there is minor improvement and the turbines are less dominant. Collectively however the vista still remains impinged upon by four full frontal turbines which remain.

[540] For all other properties the residual effects from the E series on their own are not major. E08 however has been moved. This, in the Guardians submission, has resulted in a greater visual impact on views, e.g. 588, 590, 592, and 650 Makara Road as seen in revised Truescape Photopoints 38, 39a, 40, and 41b.

[541] Having assessed these viewpoints we consider E08 should be left where it was originally located as it has very little impact on *403 Makara Road – Deck* – Truescape Photopoint 32 – an area of major concern.

Finding

[542] Meridian's mitigation of the E series turbines has been a positive response to the Court's request.

Group 2 – H Series: H17, H18, and H19

[543] The Court identified difficulties with H17 – H19.

[544] Meridian in response proposes to reposition H17, H18, and H19 *...to alleviate the overhang.* H13 has been moved vertically to the crest of the ridge. H20 has also been relocated for *detailed design reasons*. A new turbine, H14, has been added.

[545] We closely analysed all the house locations from 301-509 South Makara Road. The H series turbines H17 and H18 constantly came up with significant adverse effects either collectively or individually as assessed by Ms Lucas or Mr Rough, both highly experienced landscape architects, with details confirmed by the various residents who gave evidence.

[546] The South Makara residents see the H series turbines in particular stretching across the site's easternmost ridgeline. This runs from north to south to the west of the residents. Not only do they see a significant number, but also because they are in a westerly view, the sunset highlights the turbines elevated above the houses on the skyline.

[547] Consistent with our general findings for the Makara Road Group 1 locations, we found that turbines on the ridgeline, which are elevated and lit by the sun collectively cause amenity effects which are significant and adverse.

[548] Our summary of aspects of the H series deals in particular with turbines H17, H18, and H19 which lie to the west of residents in South Makara Road and with some views from Makara Road. These turbines all lie within the significant ridgelines and hilltops overlay, and are potentially visible to 16 homes and 4 house sites within the 2km range. Thirteen houses are within the 1.5km range with 4 within 1km. Ms Lucas provided a Viewshed Map for turbine H18 and this shows that one home is screened by topography. Our intent was to isolate a cluster of turbines which would impact on numerous residents.

[549] There were not appraisals for all homes that may have views. Mr Hudson gave only one paragraph assessing numbers 306-509 South Makara Road. Mr Hudson states views are normally expansive looking towards a ridge across a complex foreground. He acknowledges however that they are 1100-1700m distant and there is limited opportunity for screening. H17, he notes, is commonly the most prominent while many turbines visible to varying degrees effects on visual amenity are not significant. Mr Rough made assessments of 8 homes and 3 potential building sites including his Truescape assessments of 5 houses, and one subdivided section. Ms Lucas made assessments of 12 homes.

[550] Assessments by the Court were made of 134, 251, 253, 301, 306, 345, 370, 373, 434, and 509 South Makara Road, and of 455, 474B, and 588 Makara Road. Three of Mr Rough's assessments of potential building sites we have not included.

[551] The South Makara Road photo simulations generally are of very wide panoramas, which do give a good idea of the extent of the view but because of this distance the simulations flatten and diminish the sense of prominence of the turbines. The background sky in the simulations is often white or blue which diminishes the turbines' impact further. These turbines are close and they are west/north-western views – very much the outdoor living areas for most of the houses affected.

[552] In terms of reduction in height of this series of H turbines, *509 South Makara Road – Opposite Driveway* – revised Truescape Photopoint 26c, benefits substantially as it removes the panorama effect. Only one turbine, H21, remains in view and is only slightly diminished by the reduction. But H19 becomes invisible and only the tip of the blade of H18 is left.

[553] We assessed *345 South Makara Road – Driveway and 306 South Makara Road – Front Deck* from both the Truescape original and revised Photopoints 29 and 30. While H18 and H17 are more remote from *345 South Makara Road* and H19 is not visible at all, from *306 South Makara Road*, H19 is removed and H17 and H18 are seen side-on. H13 is diminished slightly as are the others in the H series and H14 and the tip of E04 is not seen at all.

[554] At *306 South Makara Road – Front Deck* – revised Truescape Photopoint 30, there is a peripheral improvement with H04 and E01 gone but the remainder looks little different.

[555] At *301 South Makara Road – Deck* – revised Truescape Photopoint 31, there is general improvement with only H09 – H07 remaining as lowered full frontal turbines.

[556] As to *370 South Makara Road* – revised Truescape Photopoint 49, the turbines are lowered otherwise there is not a substantial change but we note and agree with Mr Rough's evidence that wind turbines appear more prominent when the rotors are views head-on. We do not consider the effects of H17 and H18 are substantial in this location.

[557] For *455 South Makara Road* – revised Truescape Photopoint 36a, H15 is insubstantial while H17 and H18 have disappeared from view.

[558] Finally from *588 Makara Road – Front of House* – revised Truescape Photopoint 38, the turbines are all but eliminated. To achieve a substitute for the removed turbines a new H14 has been suggested and the movement of H13 results, in Meridian's submission, in a significant mitigation of the impact of road cuts to achieve in this area. (This impacts on rural amenity rather than rural residential amenity.)

Finding

[559] We conclude that overall Meridian's proposals have resulted in an improvement in the H series turbines.

Group 3 – The B Series: B02, B03, and B05

Revised B Series – Heights.

[560] Meridian submitted in reply submissions that the B series turbines will have a significantly lesser effect on the visual amenity of residents than the other turbines identified

by the Court. The B series were therefore not considered as priorities for removal to new turbine locations. Accordingly, Meridian declined to relocate turbines B02, B03 and B05.

771 Takarau Gorge Road

[561] Mr Rough describes the four B series turbines at 771 Takarau Gorge as highly prominent and potentially having a substantial effect on visual amenity values. The Truescape Photopoint 46 *771 Takarau Gorge Road – Pergola* illustrates the view from the pergola of the residence. Even so, Mr Rough considers the turbines would not dominate the view. This is because he considers the photopoint is backed by the western end of the dwelling, semi-enclosed by the surrounding trees and as a result the view is directed towards the valley floor of Takarau Gorge and on to pasture and the tree covered hills. And from the eastern end of the residence views are afforded away from the turbines. Ms Lucas also considers the B series would be very visually prominent but they would dominate the landscape experience and visual amenity in this location, ie at least B02, B03, B05 and B06.

[562] We note the nearest visible turbine to the residence (B06) is 1.91km away somewhat concealed from views in the simulation by vegetation. Generally the other turbines are also less than 2km away. The B02 blade tips draw the eye but are not prominent. We consider the B05 and B03 turbines however are visually significant in the simulation, and, as identified in the evidence, despite Mr Rough's assertion, we consider them to be significantly adverse in, particularly, this location. This is because the residence is elevated above the Makara Valley floor overviewing the Makara Stream and the intervening rural landscape. The residence faces directly into the setting sun and the summit draws the eye because of the often 'dark' landscape of the wooded slopes in the foreground and we agree with Ms Lucas that the large moving blades of these two turbines (framed to a lesser extent by B02 and B06 dispersed along this skyline) will continuously draw the eye. Instead of centring on the content and character of this wider rural experience, which has a high naturalness, they will be the focus and cause a major and adverse visual effect. B05 has had a small increase in distance from the nearest house of 2m with an overall tip height reduction of 20.8m. That is a significant height reduction.

769 Takarau Gorge Road

[563] From the patio of the residence at *769 Takarau Gorge - Patio*, Truescape Photopoint 45, the view discloses a broad rural outlook with 16 of the E, D and B series turbines

variously presenting to the viewer along the ridgeline just over 2km due west. The ridgelines lead from the residence across Makara Valley to Quartz Hill. The outlook is rural with diverse land cover and fronted by small rounded pastoral hills. The only structures currently visible are three highly visible poles on the ridgeline and a small area of fencing in the immediate foreground.

[564] Mr Rough considers that with 12 turbines the potential for effects on visual amenity values would be substantial with the rotors of 3 and blade tips of 2 turbines also visible. Mr Rough nevertheless considers that because the principal views from the central views of the dwelling and the main part of the patio are orientated northwards and from these areas, foreground trees restrict views to the hills, only 3 – 4 turbines would be seen. The middle ground slopes also provide some mitigation with pasture and variously planted trees.

[565] We consider however that while the valley floor is complex, the summit is a major landform feature being the skyline horizon. Located due west the turbines will be frontlit during the day and backlit later. From Ms Lucas' evidence, the turbines will be not only visible from every room of the house in this location but also from the outdoors. The viewpoint is located where the viewer looks upwards at the turbines with some in full view and some only marginally mitigated by the vegetation. Individual trees provide a scale reference and are only a fraction of that of the turbines. We agree with Ms Lucas that because of their elevation, proximity movement and spread, the turbines will be very prominent in this rural attractive rural setting. The E01 turbine, at only 1.61km away, is now to go. And earlier we noted the height reduction and movement of the remaining E series, so we consider that to be sufficient mitigation.

[566] Nevertheless, if Mr Rough is correct that only 3 – 4 turbines would be seen from main parts of the residence – these in fact will be B02, B03, B05 and B06 because they are the northernmost turbines. Of these, the full turbine B03 is now the most visible, with only the blade of B02 apparent. If B03 is removed, the effects of the B series in this location would be significantly, and sufficiently, mitigated.

Makara Road Locations

[567] *650 Makara Road – Rear Section,* Truescape Photopoint 41c, discloses a simulation of turbines B03 and B02. As the nearest visible turbine (2.75km away), only the tip of B03 is

visible and the nacelle and blades of B02 are visible above the pasture and pine forest and the skyline respectively. Although the view is strongly directed by the enclosing landform, we agree there will be only a minor effect of the project from this location.

Opau Road

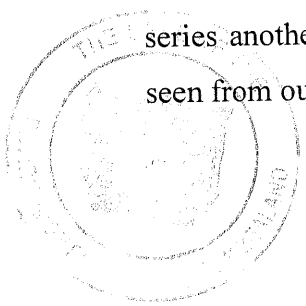
[568] At *120 Opau Road – Front of House*, Truescape Photopoint 44, where there are two potentially affected dwellings, the turbines B03 and B05 are only glimpsed, because their blades are all that are largely visible. There is a substantial intervening landform and the ridgeline is not the focus of the view. We accept Mr Rough's evidence that what is glimpsed becomes insignificant when looked at in the broader vegetative context.

[569] At *69 Opau Road* Ms Lucas identifies that three full size turbines would be very prominently in the view of a tenanted property and a residence, but she does not identify them. We consider from the location they could be the B series or the D series, but we could not be sure – so cannot take their identity any further.

Smith's Bay

[570] North of Makara Beach, tucked into the scarps facing into the west at Smith's Bay are groups of baches. With the scarp separating them from Makara Beach and private 4WD farm track accessed from Makara Road the baches present as remote and secluded. Mr Rough indicates that two turbines, B02 and B03, would clearly be visible from nearby Smith's Bay, and less than of moderate effect because in the view from Smith's Bay they are virtually completely visible and there is no other development in the view area. But, he considers, while prominent, they will not dominate. Mr Rough told us that the reason for choosing to assess views from Smith's Bay was that it is almost like a little outlying settlement of Makara Beach.

[571] Mr Rough was questioned about a *Visual Terrain Model Simulation* of the views from Smith's Bay of two of the B series turbines, B03 and B05, which had not been included in his evidence. He acknowledged that the simulation was taken from one point in the middle of the Smith's Bay settlement and that if another location was chosen from which to view the series another turbine might come into view. Elsewhere Mr Rough says that what may be seen from outside the project may be seen from inside buildings.



[572] Ms Lucas considers that the two most northern of the B series will be clearly visible elevated on the ridge just 2 km away. Close to shore, B03 would come into view, which makes three B turbines in the view, creating a less than moderate impact because the viewer is seeing them elevated on the ridge 2 km away. The visual complexity from the 3 viewed close together would exacerbate the effects with the unsynchronised sets of blades stepping up the ridge.

[573] Mr Rough reiterated in his rebuttal evidence that only two turbines would be visible. However, in cross-examination, he agreed it is possible to see three turbines.

[574] For these reasons the Court identified difficulties with the B Series.

Discussion

[575] We find Meridian's approach to the B series somewhat contradictory because in his summary of effects on visual amenity values from private properties, Mr Rough identifies (at para 227 of his evidence-in-chief) that the potential for visual amenity effects of views towards the proposed wind farm from B02, B03, and B05 was substantial for residents at 731, 768 and 771 Takarau Gorge and this wording is also echoed in his particular commentary on each of the 3 locations in his evidence-in-chief. And he chose Smith's Bay because it appeared to him as an outlying *settlement* of Makara Beach with the inference that the residents were potentially affected. Clearly Mr Rough, an expert in landscape amenity assessments, was interested in what the settlement might see and his *evidence* bears witness to the effects of the B series.

[576] Detailed design work, however, has resulted in a horizontal movement of 4m for B05, with an increase in distance from the nearest house of 2m. As with the others, a reduction in height of between 16.8 and 20.8 metres has occurred for all three named turbines.

[577] Meridian submits that the reduced height of the turbines will mean that only 10-14 metres of the blade of turbine B03 will be visible from the nearest residence, *120 Opau Road – Front of House* – see Truescape Photopoint 44. In the unrevised Photopoint 44 only the tips of the blade of B03 could be seen in any event, and if Meridian is correct in its height reductions this tip should not be evident at all. (We see from the revised Truescape simulation that the tip is hardly noticeable.)

[578] The impact of the B series turbines from locations other than Opau Road was therefore of more concern to the Court. The Photopoint 45 simulation of *769 Takarau Gorge Road – Patio* (which shows all three turbines) and Photopoint 46 of *771 Takarau Gorge Road – Pergola* (where B03 and B05 are of particular concern) were not referred to specifically by Meridian in its memoranda.

[579] We therefore reviewed the revised Truescape simulations for residences impacted on by the B series turbines. We consider at *769 Takarau Gorge Road*, Truescape Photopoint 45, the tips of the B02 and B06 turbines will almost disappear due to the height reduction. With B05 being moved 4 metres horizontal distance and the height reduction of turbines taken into account too, we consider the impact of the B series on this view would be mitigated, if B03 is removed. If seen in conjunction with the removal of E01 towards the end of this vista, which Meridian also proposes, together with the reduction in height of the D series and the remaining E series, then we are satisfied that there will be considerable mitigation of the visual impact of these turbines on *769 Takarau Gorge Road.*

[580] As to *771 Takarau Gorge Road*, while B05 appears slightly diminished, B03 shows little change and also calls for that turbine's removal in this location.

Finding

[581] For the reasons we have attempted to outline, we think a distinction in effects between B03 and the rest of the B series can be made, and that B03 should be removed.

Overall Findings

[582] Project West Wind is a very large project on sensitive and difficult terrain. The development has significant aspects:

- it is appropriate in its location;
- the site was chosen because it has the best wind resource on an international scale;
- it is a very efficient use of this particularly valuable resource because it is sited adjacent to the Wilton – Central Park transmission facilities;
- the project is to take place in a location familiar to Mäori with many cultural attributes. The outcome of consultation with iwi mana whenua has been the project's approval from authoritative Mäori bodies;

- the project meets the domestic electricity demand of the Wellington region by a process which does not emit pollutants and which does not contribute to some of the adverse effects of climate change.

[583] Meridian's Revised Layout proposals bring about a considerable improvement in the proposal's effects on the rural residential amenity of the Makara residents and we consider these improvements are within jurisdiction.

[584] We conclude that if turbines B03, D10, D11 and H01 are removed, plus the turbines Meridian has offered to remove then, together with the other offered mitigation measures, sustainable management of Makara's natural and physical resources will be achieved. Rural amenity landscapes are an important resource for social, economic, and cultural well being, just as wind power is increasingly recognised as a natural resource for the furtherance of social, cultural, and economic well being. Careful weighing of all aspects of this proposal has meant that some additional emphasis must be put on the residents concerned.

The Councils' decision

[585] Assuming that s290A applies (the transitional provisions being particularly obscure) we have had regard to the decision made by the Commissioners on behalf of the Councils. As will be evident, we agree with almost all of it, and the reasoning behind it. It is only in the area of the effects of some turbines on some properties that the evidence presented to us persuades us that we should require the removal or repositioning of some turbines, and to that extent to depart from the Councils' decision.

Formal Result

[586] The appeals against the grants of consent are declined, except to the extents indicated. Meridian's appeal is allowed to the extent indicated.

Conditions

[587] We invite the Councils, consulting with other parties as required, to draft revised sets of consent conditions to reflect what was agreed upon in the course of proceedings, and the matters we have raised in this decision. We would be grateful if those conditions could be presented for approval by Friday 8 June 2007.

Costs

[588] For the moment, costs are reserved.

Dated at Wellington this 14th day of May 2007

For the Court

S E Kenderdine

Environment Judge

Issued 14 MAY 2007