

Section 42A Report Turitea Windfarm

Landscape, Visual and Cumulative Effects

Prepared for

Turitea Board of Inquiry and Ministry for the Environment.

Board of Inquiry appointed under s146 of the Resource Management Act 1991 to consider resource consent application by Mighty River Power to construct and operate a wind farm, 10km south of Palmerston North in Turitea Reserve.

JUNE 2009

INTRODUCTION

My name is Julia Anne Williams. I hold a Bachelor of Architecture from Auckland University and a Postgraduate Diploma in Landscape Architecture from Lincoln College. I am a Fellow of the New Zealand Institute of Landscape Architects and hold current Professional Registration. I am an Independent Commissioner with a current Certificate for Making Good Decisions.

I am a landscape architect and a Director of Drakeford Williams Ltd, landscape architects. I have practised as a landscape architect for over twenty-eight years.

During that period I have undertaken numerous landscape assessment and planning projects. This has included subdivision projects on Craggy Range in Hawkes Bay, a 14-lot subdivision at Riversdale, retirement villages in both Hastings and Katikati, a 22-lot rural residential development in Nikau Valley, Paraparaumu and projects in rural areas of Upper Hutt, Porirua and Wellington. A number of these projects have involved landscape mitigation measures that integrate new developments into existing landforms and natural landscape patterns.

I have acted in the capacity of Independent Commissioner on Wellington City Council's Plan Change 32 Windfarms and Plan Change 33 Ridgelines and Hilltops (Visual Amenity) and Rural Area, in 2005. I have assisted Porirua City Council with a landscape analysis associated with their Proposed Plan Change 7 Windfarms 2009.

I am currently part of a group of consultants working on the Porirua City District Plan Rural Review, developing a strategy for the management of Porirua City's rural landscapes. I note that Clive Anstey is a member of that group but do not consider this to be a conflict of interest. The project team has not convened since my appointment to this contract.

REPORT DESCRIPTION

Mighty River Power has applied to construct up to 122 turbines on the northern Tararua Range, within 127 identified turbine zones. The proposal straddles the Palmerston North City boundary with Tararua District, within the Manawatu-Wanganui (Horizons) Region. The wind farm would extend for some 14 kms along the central spine of the northern Tararua Range, including identified areas in the Turitea Reserve, which is owned and managed by the PNCC.

I visited the site on 12 June 2009 as one of a party of experts and was shown around the Turitea site by Mighty River Power representatives.

I have been tasked to prepare a section 42A report regarding landscape, visual and cumulative effects for the Board of Inquiry hearing the resource consent application by Mighty River Power to construct and operate a wind farm, 10km south of Palmerston North in Turitea Reserve.

My scope of work is to:

1. Review and assess the evidence that concerns landscape, visual and cumulative effects, based on the following information:
 - Information in the resource consent application by Mighty River Power that is applicable to landscape, visual and cumulative effects
 - Expert witness evidence (including rebuttal evidence) by Mighty River Power that concerns landscape, visual and cumulative effects
 - Evidence from submitters that concerns landscape, visual and cumulative effects
 - Reports arising from expert caucusing which are relevant to landscape, visual and cumulative effects
 - view computer visual simulations and photomontages
 - Field work if necessary and time permitting.
2. Prepare a report discussing the validity of the application and expert evidence concerning landscape, visual and cumulative effects, and form opinions based on my experience, any field work and expertise on the conclusions drawn, and any short comings or gaps.
3. Outline an independent opinion on the landscape, visual and cumulative effects, with detailed reasons for this opinion.

Refer to Appendix 1 for a full list of the documents reviewed.

Refer to Appendix 2 for an overview of the focus of evidence for each of the Landscape and Visual Expert Witnesses

Mr Bray provided a useful glossary of acronyms which I have repeated and added to, and used throughout this report.

- MRP - Mighty River Power, the applicant
- T1 - Tararua Stage 1 windfarm
- T2 - Tararua Stage 2 windfarm
- T3 - Tararua Stage 3 windfarm
- PNCC - Palmerston North City Council
- POP - the Proposed One Plan from Horizons Regional Council
- RPS - the operative regional policy statement
- RMA - Resource Management Act (1991)
- TAG - Tararua Aokautere Guardians
- FOTR - Friends of Turitea Reserve
- TRMP - Turitea Reserve Management Plan
- ONFL – outstanding natural feature or landscape
- SAL – Significant or Special or High Amenity Landscape
- DP - District Plan
- The Track – The Pahiatua Track (Pahiatua – Aokautere Road)
- NZILA – New Zealand Institute of Landscape Architects

ISSUES TO BE CONSIDERED

Overview

This report reviews and assesses the evidence provided. Based on the landscape and visual assessment process, the report format is set out as follows:

- 1 **Statutory requirements** - Identification of relevant statutory documents and statutory requirements

- 2 **Assessment Tools.** This covers the identification of:
 - the existing landscape context
 - the activity and the particular attributes of the activity with reference to visual and landscape impacts
 - potentially affected parties and potential viewing audiences
 - methodologies used to identify key views and potential effects

- 3 **Assessment Methodology**

- 4 **Assessment of Effects**
Identification, analysis and rating of potential effects on visual amenity values
Identification, analysis and rating of potential effects on landscape amenity values

- 5 **Mitigation**

- 6 **Submissions** – issues raised in submissions

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1 STATUTORY REQUIREMENTS

1.1 Statutory Overview

The Turitea Wind Farm is located within the jurisdiction of both PNCC and TDC. At a regional level, the Wind Farm is located within the boundaries of the Manawatu-Wanganui (Horizons) Regional Council.

The relevant resource management documents for each consent authority are:

1.11 Manawatu-Wanganui (Horizons) Regional Council

- The Manawatu-Wanganui RPS (1998). It includes a number of ONFL's , most of which are designated conservation land or private land with a similar character. Both Tararua State Forest Park and the skyline of the Tararua Ranges are identified as ONFLs.
- The Proposed Horizon's One Plan (POP) notified 31 May 2007. The POP generally rolls over the provisions of the RPS and the list of ONFL's although maps of the ONFL's are included and the definition of 'skyline' is clarified. The maps are based on cadastral boundaries rather than topographic data. Post release of the POP and as the result of a number of submissions, Horizons is in the process of clarifying the definition of the ONFLs and the intent of the plan in regard to them.

Planners acting for both Horizons and PNCC note that the POP is 'immature' or 'early in its formulation' and that more weight should be given to the operative RPS.

1.12 Palmerston North City Council

- The operative Palmerston North City District Plan (December 2000). The District Plan does not identify any ONFLs within the district but identifies the area of the Tararua Ranges as having high amenity values.
- A landscape report commissioned in 1990 identified landscape character areas, assessed landscapes and formulated landscape guidelines but this work was not incorporated into the operative district plan.
- Late in 2007 PNCC commissioned a further landscape study of the City. The first stage has been completed by Opus¹; it identifies 19 Landscape Units within the city including a description of the landscape character, visual amenity and visual sensitivity of each unit. Stage 2 is underway and will provide the more useful recommendations based on consultation. However to date there is no formal mechanism in the District Plan to address the sustainable management of the landscape of the Tararua Ranges.
- The District Plan is silent on the subject of windfarms.

The experts agree that the District Plan does not identify any ONFLs or SALs and provides little guidance about landscape management. By default, detail and direction on these issues relies on the RPS and POP.

¹ Opus International Consultants Ltd.

1.13 Tararua District Council

- The Operative Tararua District Plan (March 1998). The District Plan relies on the RPS to identify ONFLs and so the skyline of the Tararua Ranges and Tararua State Forest Park are identified as having regional significance.
- The Proposed Tararua District Plan (Notified May 2008). Provisions in the Proposed plan are rolled over from the operative plan.

As with PNCC detail and direction on the issues of ONFLs and SALs relies on the RPS and POP.

1.14 The Turitea Reserve Management Plan

- The Turitea Reserve Management Plan (TRMP) was prepared under the Reserves Act 1977 and provides a framework for the management and use of the Reserve. It contains a range of policies that seek to protect and manage the Reserve's values and attributes including water supply, indigenous vegetation, plantation forestry, natural landscape, amenity, fauna, cultural, historic and recreation.

The TRMP recognises that the potential effects of a windfarm on the reserve will need to be evaluated in conjunction with the mitigation strategies offered in any Application, but specifies that no landscape intrusion into Hardings Park is permitted.

1.2 Landscape Classification

1.21 s6(b) Outstanding natural feature or landscape (ONFL)

1.22 s7(c) Significant Amenity Landscape (SAL)

Landscape classification is the subject of discussion for much of the landscape and visual evidence that has been presented to the Board. The debate focuses around Part 2 of the RMA and the relative hierarchy between s6 and s7 matters.

s 6. Matters of national importance

- *In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall recognise and provide for the following matters of national importance:*

(b) the protection of outstanding natural features and landscapes from inappropriate subdivision, use, and development:

s 7. Other matters

- *In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall have particular regard to—*

(c) the maintenance and enhancement of amenity values:

The site is not identified as an outstanding natural landscape in either the PNCC or TDC District Plans. However, the objectives and policies of the Regional Policy Statement, which are repeated in provisions for both District Plans, note that the

skyline of the Tararua Ranges is considered to be regionally significant, a s6(b) matter.

I note that landscape assessment criteria and the identification of ONFL's and SALs are not an end in themselves. Instead they are tools that are used within the RMA context of district and regional plans for the purpose of managing landscapes. The landscape assessment identifies the important values of the landscape; policies and strategies with the plan determine how the landscape is best managed to retain those critical attributes.

Experts

In terms of case law and best practice methods, Mr Coombs concludes that the lists of Characteristics and Values, and the mapped ONFLs for the Tararua ranges contained in the POP cannot be relied upon to provide any certainty of the actual values present, or their locations because a full regional landscape assessment has not been completed. In addition he notes the identification of a landscape area or feature as a 'Skyline' makes it by definition difficult to locate precisely. *"The concept of a 'Skyline' by its nature is inherently difficult to identify and protect due to the infinite combination of land and sky interface views which are generated by the complex topography of the landform and the locations of viewers throughout the region."*²

Mr Anstey, in his Section42a report for Horizons for the POP hearings gives his opinion that the Proposed One Plan reflects the **intent** to recognise the visual and scenic importance of prominent landforms that are outstanding, particularly as seen on the skyline. However he concurs with Mr Coombs that there can be no resolution as to the exact location and values of the region's ONFLs until a comprehensive landscape assessment has been completed. He believes that such an assessment is best undertaken at a territorial level.

Without a comprehensive assessment, evidence relies on expert assessment based on an agreed set of criteria on a case-by-case basis. All the experts agree that the widely used system of evaluation currently in use in NZ known as the amended or modified Pigeon Bay criteria provide a starting point for landscape assessment. The profession acknowledges that they are not comprehensive. Nonetheless, there is accumulated case law and a level of acceptance of their use as a framework of assessment.

Mr Brown provides a useful definition that highlights the differences between ONFLs and SALs.

- *Outstanding Landscapes are generally attributed to landscape where both the characteristics and some of the physical elements described are visually dominant (or very prominent) and lend the landscape a sense of distinction, expressiveness and unity. Intrusion from development is typically minimal or, at least, clearly subservient to the more natural landscape components that characterise such landscapes.*
- *Amenity landscapes are those where both the characteristics and some physical elements described are prominent and / or typical. Such landscapes must have a sense of aesthetic coherence and physical continuity. Although human modification may be readily apparent in such landscapes, it will either*

² B Coombs Rebuttal para 5.7.

*integrate reasonably harmoniously with the natural landscape patterns and structure evident (such as the interplay between pasture and remnant stands of native forest) or will remain a minor overall component of the visible landscape.*³

Weighing up the balance between natural and cultural elements, he concludes that the landscapes directly associated with, and affected by, the proposed development are more consistent with amenity landscapes, than ONFLs. He considers that both the southern end of the Ruahine Ranges and the northern terminus of the Tararua Ranges together with the hill sequence between the Manawatu Gorge and Pahiatua Track are too modified to qualify as being truly natural and outstanding. In contrast Turitea Reserve, the adjoining Hardings Park and the northern reaches of the Tararua Forest Park are highly significant, perhaps even outstanding, when viewed from within. However the strong working / production landscape quality of the landscape of, and around, the proposed wind farm site – as a whole – does not qualify as being outstanding in terms of section 6(b) of the Resource Management Act.

After examining all the evidence, Mr Brown in his rebuttal notes “*I maintain that my demarcation of ONLs and Amenity Landscapes around Hardings Park and the peak called Arawaru is appropriate.*”⁴

Mr Anstey submits that most of the Tararua-Ruahine ridgeline falls within the forest parks which are scheduled ONFL’s. The only major section of the ridgeline that does not is between the northern end of the Tararua Forest Park and the Manawatu Gorge. The most significant landscape within this section can be narrowed down even further to the ridgeline between the Tararua Forest Park and the Pahiatua Track. He argues that this ridgeline, this landscape, is contiguous with the Tararua Forest Park, has a similar character to the park and should also be identified as an ONFL.⁵

Mr Wyatt notes that planning documents from the relevant three councils recognise the importance of the Tararua Ranges but concludes that “*the area in which the turbines are to be located, while of high amenity, is not an outstanding natural landscape or feature*”.⁶ Overall the Ranges and the ‘very highest ridgeline of the Ranges’ have a high level of visual amenity due to their visual and aesthetic appeal, and because the Ranges create the skyline when viewed from many locations in the surrounding landscape.

Mr Bray concurs with Mr Brown’s regional analysis and examines the local landscape in and around the subject site in more detail. He concludes that ‘overall’ the site of the windfarm is not outstanding but considers that the landscape unit containing Hardings Park and Turitea Reserve scores very highly as a special amenity landscape. He also rates the remainder of the landscape, and particularly the skyline as a landscape with special amenity significance.

Mr Bray notes that the naturalness of the landscape decreases from the northern end of the Forest Park heading north, with specific reference to the lessening of significance of the northern ridgeline from South Range Road (near turbine 27) to Wharite Road across the Manawatu Gorge just north of Te Apiti. He notes that the

³ Mr Brown evidence para 39

⁴ Mr Brown Rebuttal para 10.

⁵ Refer to Attachment 3a and 3b in his evidence for Horizons for their POP hearings.

⁶ Mr Wyatt Evidence para 8.19(b)

importance of the foothills of Bryant Hill, Ngahere Slopes (above the Ngahere Park forest) and Te Mata. While not ONFLs, they form a dominant rural backdrop to residential and productive development and contribute to the dominance of the Tararua Ranges in the wider landscape.

Ms Lucas assesses the landscape context in detail using the “accepted landscape criteria”⁷ and assesses that the site is within an ONL and should therefore be protected from inappropriate development according to Policy 8.2 in the RPS. She concurs with Mr Brown that the ridgeline and the associated landscape of the Tararuas north of the subject site between the Track and Manawatu Gorge is too modified to be a ONFL, partly because of the presence of existing windfarms. However she concludes that the elevated lands of the Arawaru (just within the south end of the subject site) to the Track are a natural continuation of the Tararua Ranges skyline and an ONL.

In addition, regardless of whether it is an ONL or not, she notes that the northern end of the Tararua Range forms a major natural feature and landscape for Palmerston North City and Tararua District.

Mr Anstey reviewing the evidence of Mr Wyatt and Mr Brown, concurs with Mr Browns overview of the wider setting. He generally supports his assessment that the Turitea Landscape is a SAL with values of considerable significance, although not outstanding at a regional scale.

It is Mr Anstey’s opinion that parts of the subject site are ONFL when viewed from within and describes the ridges within the site in detail.⁸ He concludes that the highest ridges in the reserve are listed as ONFs in the POP and most of the Turitea Reserve (part of the subject site) is at least outstanding at a local or district level. It is his opinion that the Turitea Landscape may well be viewed as outstanding at a district level in the immediate context of Palmerston North City and this will emerge from the landscape assessment currently underway.

There is much discussion within the evidence on the definition of Skyline, which ridgelines constitute the skyline and whether the subject site is included in the ‘Skyline’ of the Tararua ranges. There is also debate on whether the skyline is regionally outstanding or significant at a territorial, that is district level.

Caucus

1.21 s6(b) Outstanding natural feature or landscape (ONFL)

- Anstey, Bray and Lucas agree that the skyline, which includes a series of ridges, would be described as an outstanding natural feature. All agree that the naturalness diminishes northwards.
- Wyatt would agree that this is a distinctive feature, but would not rate it as outstanding when compared to the skyline to the north and south.
- All agree that there are areas within both Hardings Park and Turitea Reserve that have outstanding qualities.
- Anstey and Bray, whilst accepting that large parts of the Reserve would qualify, agree there are transitional areas towards the north which have been significantly modified and the pattern of use is pastoral and productive forestry.
- Lucas would rate the Turitea Reserve as part of an ONL.
- Wyatt doesn't agree that this area should be included within an ONL.

⁷ Ms Lucas –her quotation marks wrt Mr Brown’s evidence.

⁸ Mr Anstey evidence para 38.

1.22 s7(c) Significant Amenity Landscape (SAL)

- All agree that the area of the foothills outside of the Turitea Reserve is a high amenity landscape.
- Wyatt would rate the area within the Turitea Reserve as part of this high amenity landscape.

Summary

The landscape architectural profession is moving from the traditional role of landscape assessment (as embodied in statutory requirements) identifying the landscape attributes and values that need to be protected towards landscape assessment as a means to sustainable landscape management and development.

It is generally accepted that community consultation is an important element of landscape assessment, since ultimately the provisions in policy statements and plans direct landscape management. Such provisions should enable development that respects the environmental values that the community agrees are important and constrain development that does not. Regional and District Plan changes with their attendant process of submissions and hearings provide the mechanism for robust consultation.

The evidence to date on community values is the original PNCC assessment, the partially completed on-going PNCC assessment, and feedback from stakeholders in the form of submissions on POP, on this application and from focus groups. I therefore agree with Mr Coombs and Mr Anstey that there can be no resolution as to the exact location and values of the region's or district's ONFLs and SALs until a comprehensive landscape assessment has been completed, the landscape values affirmed by the community and embedded in management policies within the appropriate regional and district plans.

In the matter of ONFLs and SALs, I agree that at the very least, the subject site is a high amenity landscape, and is located in close proximity to an outstanding natural landscape. It appears from the evidence that the transitional area, that is the point where the landscape values between the ONL and SAL change, occurs somewhere between the northern boundary of the Tararua Forest Park and The Track.

The experts fail to agree on the definition of skyline, which ridgelines are 'highest' and which ridgelines are 'skyline', although there is agreement that parts of the skyline of the Tararuas qualify as ONFLs. Regardless of definition, elements of the proposed windfarm are visible on a skyline or the Skyline in every photomontage supplied by the applicant.

Based on the range of evidence presented, it is my opinion that:

- Turbines will be visible on the Skyline of the Tararuas, defined as an ONFL in both regional and district plans.
- Whether assessed as an ONFL or SAL, the northern end of the Tararua Range forms a major natural feature and landscape backdrop for Palmerston North City and Tararua District.
- Turitea Reserve in particular, has high visual amenity and is at the very least a high amenity landscape.
- The area of the foothills outside of the Turitea Reserve is a high amenity landscape

Whether the subject site is assessed as an ONFL or a SAL, the question for the Board is whether the windfarm in its proposed form can still meet the sustainable management purpose of the RMA. I note that Mr Baker, planner for PNCC discusses this issue in his evidence⁹

1.3 The Turitea Reserve Management Plan

Overview

The Turitea Reserve comprises two areas: a Local Purpose Reserve and Hardings Park which is a Scenic Reserve. Within the subject site for the proposed windfarm, the largest numbers of the turbines are located within the Reserve, although outside the water catchment area and Hardings Park.

There has been suggestion that the objectives of the TRMP can be met through the mitigation offered by the Eco-Park concept. While the development of an Eco-Park at Turitea Reserve and Harding's Park is part of the Turitea Wind Farm Proposal, it has been made clear that it does not form part of this Application.¹⁰

Experts

The Applicant experts Mr Brown and Mr Wyatt do not discuss Hardings Park and Turitea Reserve within the context of the Reserve Act and the TPMP, although Mr Brown does note "*Turitea Reserve, the adjoining Hardings Park and the northern reaches of the Tararua Forest Park are highly significant, perhaps even outstanding, when viewed from within.*"¹¹

Experts for the Submitters debate the question of the preservation of natural character of Turitea Reserve.

Mr Anstey notes that turbines at the southern end of the windfarm, particularly those in the *Red Rock Knob* group and at the southern end of the *Browns Flat West* group would be very intrusive for recreational users of Hardings Park.

Mr Bray finds the minor landscape unit containing Hardings Park and Turitea Reserve close to being considered outstanding particularly with regard to its geology and ecology. He notes the location of turbines south of Marima by South Range Road would "*have diminishing effects on aesthetic, recreational and ecological values, especially for users of Hardings Park*"¹² but fails to link this back to natural character and the objectives of the TRMP.

Ms Lucas notes that the effects of the proposal on the scenic values of Hardings Park and questions the preservation of the natural character of the reserve.

⁹ Mr Baker Evidence para 68.

¹⁰ From the Summary of Submissions April 2009 downloaded from the MfE website <http://www.mfe.govt.nz/rma/call-in-turitea/turitea-summary-submissions-report.pdf>. "An "ecopark" proposal within the Turitea Reserve has been associated with the Turitea windfarm proposal. This ecopark is proposed to be funded with the payments to be made to Palmerston North City Council from MRP for the use of public land, should consent be granted. Details of the ecopark are still to be developed and it does not form a part of the consent applications addressed by this report."

¹¹ Mr Brown evidence para 72.

¹² Mr Bray evidence para 88.

“The effects of the numerous, large and overlapping structures would be to detract from experiencing the range lands as a landscape feature. Instead the land would for many read as a plinth for the kinetic structures above.”¹³

She states *“The turbines would also affect the visual relationship enjoyed between Hardings Park and the Turitea catchment, as it would be experienced as encircled by turbines and the ridgelines disrupted by earthworks.”¹⁴* And again *“The natural scenic values of Hardings Park would be significantly affected by at least half of the proposed turbines through their location within and around the Park.”¹⁵*

Caucus

- Caucus notes state ‘Wyatt is unaware of case law which would limit development adjoining a Scenic Reserve’.

Summary

Mitigation measures to restore natural landscape values including landform restoration and revegetation are detailed in the Application. Although, based on the expert evidence, it is clear that the proposed windfarm will have an impact on the natural landscape character of the Reserve, this must be balanced against the recognition within the TRMP that one of the purposes of the reserve is ‘renewable electricity generation’ and that windfarms are a legitimate activity within the Reserve.

The Application AEE states *“ The development of the Eco-Park will further add to the existing values of the Turitea Reserve (and Harding’s Park), and provides a further benefit to the key values the Reserve seeks to protect.”¹⁶*

Given that eco-park concept cannot be offered as mitigation as part of this application, and cannot at any time offset the impact of the proposal on scenic values, I support the expert evidence of Ms Lucas and Mr Anstey that the proximity of the proposed turbines within the Turitea Windfarm would have significant adverse effects on the natural scenic values of Hardings Park.

2 METHODOLOGY AND ASSESSMENT TOOLS

2.1 Landscape Units

Overview

As previously noted, no full regional landscape assessment has been completed. No landscape assessment has been undertaken for TDC. PNCC has completed stage 1 of a district landscape assessment that identifies 19 Landscape Units within the city including a description of the landscape character, visual amenity and visual sensitivity of each unit.

¹³ Ms Lucas evidence para 121

¹⁴ Ms Lucas evidence para 133

¹⁵ Ms Lucas evidence para 173

¹⁶ MRP Application and AEE 7.12.5

Experts

Mr Wyatt analyses the landscape in terms of 5 landscape character types or units, areas with similar visual and physical characteristics in terms of topography, geological features, soil, vegetation, and land use. Based on the modified Pigeon Bay criteria, he attributes high sensitivity for units which appear pristine, unique or dramatic (low ability to absorb change) and low sensitivity for units which are common and do not exhibit features that the community values highly (greater ability to absorb change). TDC landscapes are included in his landscape units.

Mr Brown and Mr Bray have mapped landscape units similar to those used by Opus in the on-going PNCC landscape study, although Mr Bray has provided a greater level of detail in mapping what he describes as 'minor distinctive landscape units around the proposed site'.

Mr Bray has also analysed these units in terms of their capacity as a receiving environment for a generalised windfarm, based on a model of what might be considered ideal, and a large part of his evidence is focused on this

Ms Lucas has also provided a series of landscape units and types based on the Palmerston North Landscape study (Attachment 3 her evidence) where landform is used as the basis for landscape analysis. She makes the point that at this stage, the landscape typology is somewhat difficult to read, understand, analyse and apply and the study has not progressed to the point where values have been attached to those units. Ms Lucas has focused on the 'big picture' landscape to complement Mr Brays more detailed mapping and evaluation.

I note that neither Ms Lucas or Mr Bray have extended their mapping of landscape units into the landscape within the TDC.

Caucus

- The Caucus agree that the landscape units in the Wyatt and Bray reports are useful to underpin their own analysis.

Summary

Landscape units are useful tools that group similar landscapes (in the same way one might group turbines) in order to define their values, and assess their sensitivity to change. Without an existing regional or district assessment that has been through a robust process of consultation, the most relevant and current study is the PNCC Opus landscape study.

Mr Wyatt's landscape units are more generalised but extend over a wider area. Mr Bray and Ms Lucas have used the base information from an existing study as the basis for their landscape analysis which in turn allows them to complete their assessment of effects at a greater level of local detail.

2.2 Turbine grouping

Overview

Both Mr Anstey and Mr Bray chose to assess the proposed Motorimu windfarm by identifying and naming clusters or groups of turbines. At the subsequent hearings it eventuated that they had different groupings with different names and this caused some confusion.

In conjunction with Ms Lucas, they elected to share the same grouping and terminology for their assessments of Turitea Windfarm. It appears that a number of PNCC experts have adopted these groupings.

Experts

Mr Bray states *"To assist with describing the potential visual amenity effects of the proposed MRP turbines, I have clustered them into groups that have similar effects. For the most part, the effects that I have assessed are similar or identical for all turbines in the group, or are as a result of the group as a whole. In some situations I have identified specific turbines as being an anomaly to the general pattern of effects described."*¹⁷

Ms Lucas uses the groupings but equally refers to individual turbines when discussing cadastral and territorial boundaries. Mr Anstey notes that mapped groups are more easily identified than individual turbines although *"in the final analysis individual turbines become important"*.¹⁸

Mr Baker notes *"To some extent any points of demarcation are arbitrary but the usefulness of grouping outweighs these limitations."*¹⁹

Caucus

- Anstey, Bray and Lucas believe grouping is a useful and effective tool for broad analysis and hence have shared the group descriptions to assist the court.
- Anstey, Bray and Lucas recognise that the use of this tool has some limitations.
- Wyatt disagrees and doesn't believe these are helpful.

Summary

I have observed that Mr Bray, Mr Anstey and Ms Lucas refer both to turbine groupings and to individual turbines (by turbine number) throughout their evidence and in plans and photomontages. Given the large number of turbines proposed in many recent windfarm proposals, turbine 'grouping' has been adopted as a tool for identifying and describing the turbines and for the assessment of effects in a manner that is useful for experts, lay people, commissioners and the Environment Court. It is sensible to use consistent terminology for the groupings and I do not consider that it has been detrimental to the reliability and impartiality of the assessment process.

2.3	Distance & turbine height also referred to as Viewshed and zone of visual influence
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Overview

Distance from the viewer.

The distance of the nearest turbine to the viewer is commonly regarded as the most significant factor in determining the prominence of a windfarm in the landscape. There is a generally accepted set of criteria for making a judgement about the 'significance' of wind turbines with respect to viewing distance.

The criteria measure the potential effects based on a proposed development, a landscape context, a viewing distance from the nearest turbine to existing dwellings (or existing dwellings and house platforms), public places and roads.

¹⁷ Mr Bray evidence para 153

¹⁸ Mr Anstey evidence para 10.

¹⁹ Mr Baker evidence para 23.

There are several generally accepted sets of tables/matrices setting out the scale of visual dominance, relating visual impacts to viewing distance. They are frequently mapped on a proposal, and may even include a line-of sight determined by topography. These could be seen as a starting point for assessing visual effects.

The most commonly used and accepted in New Zealand as a reference is a table prepared by Boffa Miskell Limited²⁰ that assesses visual prominence by visibility and distance.

Visual Impact in Relation to Viewing Distance.	
Less than 1 km turbines tend to dominate the landscape and the potential for visual effects is substantial.	
At 1- 3 km turbines are highly prominent and the potential for visual effects is substantial	
At 3- 6 km while still prominent and a distinctive feature in the landscape, the potential for visual effects is moderate.	
At 10 km turbines are not prominent in the wider landscape and potential for visual effects is only slight.	
At 20 km , while turbines are distinguishable the wind farm becomes a minor feature in the wider landscape and the potential for visual effects is negligible.	
At 25 km+ turbines and an entire wind farm become difficult to distinguish and a minor feature in the wider landscape so visual effects are not an issue.	
Magnitude	Definitions
Dominant	The feature has a defining influence on the view and is a focus in the view
Prominent	The feature is clearly visible in the view and forms an important but not defining element of the view
Present	The feature is neither dominant nor prominent but is visible in the view.
Negligible	The feature is visible but may go unnoticed as a minor element in the view, or is not visible.

Turbine height.

It has is generally accepted that the larger the turbine, the greater its visual prominence. However landscape experts at the Waitahora Windfarm hearing (Hearing closed in March 2009, decision released April 2009) agreed that there was no significant difference between the 150m height turbine and the 121m height turbine in terms of landscape effects. ie.at this scale, the additional 29m made relatively little difference to their visual prominence.

Experts

Mr Wyatt has mapped the Turitea windfarm with a zone of visual influence plotted at 1.5km, 3.5km, 8.5km and 18km distances from the nearest turbine and configured for a 150m high turbine These distances have been used as a guide for the following reasons:

²⁰ Prepared by Boffa Miskell Ltd following an assessment by Allan Rackham of the Meridian wind farm at Te Apiti (on a clear day) when it was partially operating. It has been used for Te Waka Hawkes Bay, West Wind and with minor variations for Tararua Stage 3

- **Highly visible** – Visual impacts at distances closer than **1.5km**. Turbines visible at this distance will usually dominate the landscape, and visibility will only be reduced through screening by vegetation or nearby buildings.
- **Visually evident** – Visual impacts at distances between **1.5km and 3.5km**. Turbines visible within this distance range have increased visibility and are evident, and potentially dominant in the landscape. Landscape is less effective at screening wind turbines unless it is close to the viewer, although the degree of visual intrusion will depend on the landscape sensitivity and the sensitivity of the viewer.
- **Potentially noticeable** – Visual impacts at distances between **3.5km to 8.5km**. Where the entire wind turbine is visible and lighting does not alter the visibility of the tower versus that of the rotor, the degree of visual impact will again depend on the landscape sensitivity and the sensitivity of the viewer. However, the turbines will not dominate the landscape, and both foreground vegetation and intervening landforms can reduce the degree to which they are noticeable.
- **Visually insignificant** – Visual impacts at distances between **8.5km – 18km**. At these distances the turbines are a very small element in the landscape and are often hard to discern. In all but exceptionally clear lighting conditions they are imperceptible.

Both Mr Anstey and Mr Bray use the previously discussed Boffa Miskell Ltd table although there is some disagreement between them whether it was developed to assess turbines 95 or 110m high.

Mr Bray notes that it has become more widely accepted that the first distance zone stretches as far as 2km, not 1km, especially when proposed turbines are higher than those assessed for this matrix. He quotes recent New Zealand case law to verify this.

The Court in Project West Wind determined (for 125m high turbines - similar dimensions to those proposed for Turitea) “*We accept that for distances of less than 2km there is the potential for turbines to be visibly prominent with potential adverse visual effects to be significant. Where multiple turbines are the viewing focus, effects may be significant and adverse up to 3km.*”²¹

And in Motorimu (for 79m high turbines) “*Even taking a very cautious approach to the various rules of thumb which the landscape witnesses have applied, it is apparent from the landscape evidence that, for those living within 2kilometres of the proposed wind farm, there is real potential for the additional turbines to become a visually dominant feature of the environment and to have a high degree of adverse effect on visual amenity.*”²²

Caucus

- Wyatt, Bray and Anstey find these helpful.
- Lucas believe that such bands are unhelpful because of the variation in landscape context.

Summary

Experts acknowledge that the distance zones are not definitive but are a continuum, that they should be used as a guideline only and are provide a starting point for assessing visual effects.

²¹ W031/2007, Para 142

²² W067/2008, Para 222

I do not find the differences between the two sets of figures so great as to make them incompatible. However I do suggest that the Board is guided by the most recent Environment Court decisions because of their relevance to the New Zealand, the local landscape (in the case of Motorimu), the proximity to local residences and the size of the turbines (in the case of Project West Wind). This would 'recalibrate' the distance zone and acknowledge that the potential for visual effects is substantial at a viewing distance of less than 2km and may be significant and adverse up to 3km viewing distance.

Most usefully although not identical, Mr Wyatt²³, Mr Baker²⁴ and Mr Anstey²⁵ (using figures supplied by both PNCC and Becas for the applicant) have estimated the number of residences within a 3-3.5km viewshed and based their assessments on this data.

I note that the proposed turbines for Turitea would be the tallest in the Manawatu landscape with other windfarm turbines having the following heights: 55m at Te Apiti; 63.5m at T1 and T2; 110m at T3; 66m at Te Rere Hau and 79m at the consented but unbuilt Motorimu.

2.4 Visual Prominence

Overview

Other factors may be considered in respect of assessing visual prominence. The table below was compiled by Isthmus.²⁶ and used by Gavin Lister in his evidence for the Waitahora Windfarm hearing in March 2009

Factors Influencing Visual Prominence of Wind Turbines

(based on 150m high turbines) from base to blade tip)

Factor	< Less Prominent	More Prominent >
Orientation of views:	Focused away from site	Focused towards site
Complexity of intervening landscape	Seen beyond complex foreground landscape (increased depth perception)	Seen across open simple, open landscape (decreased depth perception)
Screening	Screening behind trees	Clear views
Visual anchoring	Towers set back from edges of hills.	Full extent of tower seen proud on ridgeline
Relative Elevation / Vertical Separation	Turbines below viewpoint	Turbines above viewpoint - especially in close proximity
Number & extent of turbines visible	Few	Many
Light conditions:	Low contrast with backdrop sky (eg when the light is behind a viewer)	High contrast with backdrop sky (eg when the wind turbines are silhouetted against the light)
Atmospheric conditions:	Hazy	Clear
Rotor orientation:	Side on	Front on

²³ Mr Wyatt evidence Table 6, page 60

²⁴ Mr Baker evidence Table 2 page 25

²⁵ Mr Anstey evidence Table 1, page 36

²⁶ Gavin Lister. Table 5 in his evidence for Waitahora Windfarm Hearing March 2009

EECA have produced a table of 'good practice' referring to turbine design, placement and location²⁷. The following generalisations can be made in terms of reducing visual effect:

- All turbines in a wind farm should be of similar size and style.
- Blades should always rotate in the same direction.
- If the site is flat, a regular layout along straight lines is preferred to a random scatter of turbines. This does not hold for variable terrain.
- Light colours - pearly grey and white - have been found to be most appropriate colours for all parts of the turbines in Northern Europe, where they tend to be seen against a sky
- Background. If the background is other than sky, darker colours may be appropriate.
- Distance and scale of the landscape is a major consideration. In an open or grand landscape, wind farms can be of minor intrusion. However, the human eye is often drawn to 'artificial' vertical features, regardless of distance, making them seem bigger than they really are.

Experts

Mr Bray introduces additional criteria to be considered in his evidence in paragraphs 105-145. For ease of use of the Board, I have organised them into a similar format to the Table above. These factors have been used in recent case law.²⁸

Factors to be considered	< Less Prominent	More Prominent >
Views of Partial turbines Depends on personal preference	Some viewer find partial views, eg just part of the blades, dissect the landform and can interfere with the visual coherence of the skyline, particularly if it has a strong lineal characteristic.	
Views of overlapping turbines	Turbines that occupy their own space	Turbines that overlap
Expanse of view	Wide angle of view to landscape	Narrow angle of view focuses viewer attention
House and curtilage layout	Orientation living room, outdoor living areas and curtilage away from turbines	Orientation living room, outdoor living areas and curtilage towards turbines
Shadow flicker and blade glint		Turbine located to shield sun in early morning or late afternoon

He notes that while vegetative screening may make views less prominent, it may also be considered undesirable if the dwelling is located or designed for important views or outlooks.

Ms Lucas alludes to a number of these factors in her evidence on Effects of Windfarm although more in reference to views from public places and roads than from residential properties. Of particular note is her reference to the factors of light and atmospheric conditions and the transient values of the ranges.

“The value of the slopes and skyline to the Tararua Range through different light conditions is widely recognised. The differing effects at sunrise and sunset, the differing effects when faces are in sunlight and in shadow, the differing effects when clouds gather, when swathes of mist move over, when fog lifts. From around the

²⁷ EECA Guidelines for Local Authorities: Wind Power August 2004.

²⁸ John Hudson in his evidence for Project West Wind W031/2007

districts, the view to the Range provides an important measuring place to 'read' conditions, to get the feel of the day or night."²⁹

Caucus

- The Caucus has made no determination on the use of these factors in the assessment of visual prominence.

Summary

Based on the summary of submissions, most of these factors have been raised in some form or another by residents and submitter groups. They have been discussed in evidence at other windfarm hearings and I am of the opinion that they are acceptable issues for consideration in the assessment of effects.

2.5 Perception Studies and Focus groups

Overview

There is an established methodology used to assess the visual and landscape impacts of a proposal but the significance of the effects can only be determined with reference to those considered to be affected, their values and the wider community values.

In his evidence Mr Brown notes that much of the landscape assessment in New Zealand has been undertaken without input from the community. He says "*the desire for wider public participation in the assessment process has been expressed in the past by the Environment Court, as well as the need to provide a more substantive basis for judgements about landscape values and the effects of development proposals on such values.*"³⁰

Experts

Mr Brown references the body of research undertaken in New Zealand based on repeated "Q Sort" testing of public attitudes which provides guidance about the values held by the New Zealand public and how these might be applied to the landscapes affected by the Turitea Wind Farm (as opposed to specific perceptions of wind farms). Public preference testing has lead to consistent preference for key values or traits such as naturalness, 'NZness', strong landscape structure and patterns, memorability and visual diversity. Recent Q sort study findings are detailed in Appendix B of his evidence.

Mr Wyatt draws heavily on community perception studies of wind turbines within the landscape undertaken in Australia, England, Wales, Scotland and the United States, and to a lesser extent in New Zealand, United States. All support a similar level of acceptance.

He notes that the recent results of a survey (Research New Zealand, March April 2009) are within a few percentage points of the figures in Australia, the United Kingdom and from America. More specifically, the level of support for the Turitea Wind Farm for residents within a 15 kilometre radius of the project area, (the most sensitive location) is 60%.

²⁹ Ms Lucas evidence para 140.

³⁰ Mr Brown evidence para 24

Mr Wyatt also notes that *“although no specific research has been undertaken in New Zealand into the visual impact of wind farms after construction, overseas studies suggest that levels of acceptance by people living in the vicinity of wind farms actually increase after construction, and that this in fact strengthens with proximity. In other words, these studies (predominantly in the United Kingdom) support the view that familiarity increases acceptance of, and support for, wind turbines in the landscape. This figure is usually in the order of 10%.”*³¹

Mr Bray references the concept of aesthetic coherence and amenity values as a determinate in the level to which people appreciate a landscape. He provides references to some of the more recent New Zealand research on public perception of windfarms in his Appendix 4 and concludes *“Commonly people..... fiercely oppose windfarms in their neighbourhood, despite strong claims suggesting that they support the idea of wind energy.”*³²

He goes on to note *“It is therefore accepted that wherever a windfarm is proposed to be located, there is likely to be some level of local opposition, for the very reasons outlined above. The reality is that the potential effects on visual amenity from this proposal are going to be adverse to some people. As such, my evidence assesses the significance of such effects on an adverse basis, and considers that reduced turbine visibility is preferable to increased visibility.”*

And

*“Such an approach is consistent with discussions in recent windfarm cases where decisions have sought to minimise potential effects on visual amenity. In Project West Wind it is apparent that the applicant, and then the Court, went to considerable lengths to limit such effects, including the deletion of turbines in close proximity to residences.”*³³

The Project West Wind decision summarised:

*“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.”*³⁴

Mr Anstey has had the advantage of not only having access to Mr James Baines, Palmerston North City’s expert on social impact assessment, but also assisting him with focus group meetings within local communities. He identifies three local communities of interest, the Pahiatua-Aokautere Road area group, the Turitea Valley / Ngahere Park group and the Kahuterawa Valley group. He notes that much of what local individuals and their communities had to say verified the significance of the amenity values of the foothills, the Turitea Reserve and the Tararua Ranges. He also states that these foothills communities are particularly concerned about the potential effects of turbines located in this landscape.

Mr Baine’s evidence discusses the results of a wider survey targeted a households living within 5km of an existing windfarm notes in the context of landscape and visual

³¹ Mr Wyatt evidence 5.12

³² Mr Bray evidence para 106.

³³ Mr Bray evidence para 108, 109

³⁴ W031/2007, para 139

effects *"It appears that consideration of landscape values is an important factor influencing residents' attitudes to further wind farm development."*³⁵

His overall conclusion, based on the input of over 500 residents of Palmerston North is that *"residents of Palmerston North are not rejecting windfarms, but they are beginning to reject the idea of more windfarms nearby."*³⁶

Caucus

- Perception studies are useful and Anstey, Bray and Lucas believe that these are only of limited use for visual amenity assessments.
- Wyatt believes that these show a difference between wind farms and other forms of development in the landscape.

Summary

Reviewing the evidence, it is clear that a wide range of studies/tools/methodologies have been employed to assess perceptions on landscape and amenity values and attitudes to windfarm development. While I accept that there is an established body of work testing public attitudes and preferences, it is my opinion that a study based on a specific proposal in a specific location, with reference to the specific community and those residents most likely to be affected must carry the most weight. For this reason I prefer the evidence of Mr Anstey and Mr Baines over that of Mr Wyatt and Mr Brown.

Although I acknowledge Mr Wyatt's statement that post construction studies overseas suggest that familiarity increases acceptance of and support for windfarms, I note that the social impact analysis undertaken by Mr Blaine is of a community that is familiar with both the concept and the reality of windfarms. Turitea windfarm is after all the fifth windfarm proposed in the region.

2.6 Those considered to be affected

Overview

Those considered to be affected fall into three groups: the wider public, those travelling on roads and residents. These groups largely determine the viewpoint selection.

The issue of wider public views and views from roads is covered in the subsequent section 2.7 Viewpoint Selection. However the analysis of residents considered to be affected deserves some consideration due to the proximity of the proposed Turitea windfarm to Palmerston North and in particular its proximity to areas of residential growth, both urban and rural residential outside the CBD but close to Massey University and located between the city and the subject site. Strategic plan

The number of houses, and thereby the number of residents has a further 'flow-on' impact on local travel and the quantity of vehicle movements in the vicinity.

Experts

Expert evidence differs on residents considered to be most affected and the number of houses in close proximity.

³⁵ Mr Baines evidence 5.3.3

³⁶ Mr Baines evidence 9.1.9

Mr Wyatt, as part of his 'seen area' analysis, maps the zone of visual influence (ZVI). The mapping identifies where a development will be screened by topography, based on 10m contour data and allows him to account for intervening landform between the viewer and turbines. As it does not account for screening by vegetation, minor topographic changes and buildings, all of which may also reduce visibility from many locations, he regards it as a conservative estimate as to the potential extent of a structure's visibility.

He presents the visibility of the proposal from four zones³⁷:

- (a) Zone A: One or more turbines is visible in its entirety;
- (b) Zone B: The entire swept path of the blades of one or more turbines is visible;
- (c) Zone C: At least half the swept path of one or more turbines is visible;
- (d) Zone D: Any part of the blades of one or more of the turbines is visible.

Briefly summarised, the ZVI assessment results demonstrate that indicative viewpoints should be within the 3.5km viewshed zone, and then in the 3.5-8.5km viewshed zone. Due to the surrounding topography, there are no areas from which viewers can see more than 79 of the proposed turbines in their totality.

Based on his ZVI assessment, Mr Wyatt shows the number of residences within the 3.5km viewshed.

Participatory and Non-participatory houses

Distance from house to nearest turbine	Participatory houses	Non-participatory houses	Total
1.5km	12	50	62
1.5-3.5km	2	481	483
Total	14	531	545

Mr Baker provides some detail on Palmerston North city residential development within proximity to the subject site. He notes the urban residential growth on residentially zoned land at the end of Pacific Drive and assumes this will proceed. He also assumes the further intensification of the rural-residential areas within a 3km radius of the site on the basis of his analysis of past growth trends, knowledge of potentially developable land in the area and the overlying rural residential zoning of the land in the Auokautere area and Turitea and Kahuterawa Valleys.

Mr Baker includes a 'potential houses' column indicating approximately 106 further houses could be developed in the 3km range either as of right or ones that would likely be consented by PNCC. I am unsure of the validity of this approach without knowing whether he is including house lots that have been purchased but are not yet built on, subdivision plans that have been consented but not yet developed or areas of land that are zoned for rural residential development but have not yet been subdivided.

Houses within 3km

Area Total within 3km	Existing houses	Potential houses
Pahiatua Track area	62	31
Turitea/Ngahere area	149	67
Kahuterawa Valley/Greens Rd	45	8
Total	256	106

³⁷ Mr Wyatt evidence Figure 23, page 41.

Mr Anstey provides more detailed information on the numbers of houses within a wider viewshed.

Estimate of numbers of houses at various distances

Distance from house to nearest turbine	Number existing houses
Within 1.5km	50
1.5km-3.0km	200
3.0-4.0km	140
4.0-5.0km	280
5.0-6.0km	430
Total	1100
In addition there are Mr Bakers 106 potential houses in the 0-3km and an unknown number outside that distance.	

Ms Lucas points out that strategic planning within PNCC has involved encouraging expansion of the built city across the Manawatu River toward the Tararua Ranges to avoid the Class 1 soils and flood-prone lands in other directions. She notes that from within new residential areas such as Pacific Heights, some 2.17-3km from the site with clear views to the proposed turbines, are 700 further sections to be sold.

Caucus

- Caucus made no comment on those considered to be affected

Summary

I noted a number of empty lots in Pacific Heights and the Ngahere Park development on my brief site visit. In the material supplied to me there is evidence from one resident³⁸ who owns a property in Ngahere Park but has not yet built on it. It is my opinion that the potential for a number of additional houses within 3km of the site must be considered, although there is not sufficient evidence to quantify this with any accuracy.

Despite the discrepancies in resident numbers, what is 'agreed' between experts is that there at least 250 houses within 3km of the nearest turbine and over 500 houses within 3.5km of the nearest turbine with the potential to be highly prominent potentially dominant in the landscape.

2.7 Viewpoint selection

Overview

The viewshed or zone of visual influence assists in identifying appropriate locations for selecting representative viewpoints.

Windfarms by definition contain large structures and are located on high, prominent points such as ridgelines: it is standard practice to assess a range of representative viewpoints from public places such as schools, recreational areas, parks and local roads. Residential viewpoints are most commonly selected from those properties considered to be most affected, and generally focus on views from indoor and outdoor living areas and the curtilage.

³⁸ Mr D Pringle

Experts

In his initial report, Mr Wyatt selected a total of 10 viewpoints as representative of publicly accessible places and roads within the viewshed. By the time his evidence was prepared he had assessed an additional 4 viewpoints. Viewpoints including Massey University, Waterloo Park, Awapuni Racing Club, Taraua College, Fitzherbert Avenue and Ngahere Park Road. He assessed 25 residential viewpoints selected either through consultation with landholders on the public open days or based on their location, and orientation. Priority was given to residences with the greatest potential visual impact within the 3.5km viewshed.

Mr Baker disputes the selection of viewpoints and argues that they are not representative of public views in terms of the number of viewers and the distance from the nearest turbine. He notes that only 2 of the initial 10 viewpoints (and 2 of the final 14) are within 3km of the nearest turbine.

Mr Anstey assesses a number of the residential viewpoints selected by Mr Wyatt. He notes that although Mr Wyatt has chosen a range of the potentially most adversely affected properties nearest to the turbines, there are additional houses further out from the hills, but within 3km, that have very full views of the proposed wind farm.

Both Mr Bray and Mr Anstey note that people in rural communities live in working landscapes: they enjoy all parts of their properties, and can have extensive views over the landscape from a number of locations within the property.

Mr Bray completed extensive field work and visited over 25 properties within 2km of the proposal to make an assessment from outdoor living spaces around the house. Due to the size and expanse of the proposal, the range of landscape types it covers, and the number of residences in close proximity to the proposal, he has confined himself to assessments from more generalised viewpoints.

Caucus

- The Caucus accept that there is a practical limitation on the amount of viewpoints that can be chosen and assessed and particularly those that are then simulated in photomontages. They are a useful tool.
- They agree that there was a fair representation of viewpoints in the assessment of effects undertaken.

Summary

However the proposed Turitea Windfarm does create logistical difficulties for determining what viewpoints are selected and how many to select, particularly given the extent of the subject site, its proximity to the city and residential development and the grid layout of Palmerston North's CBD and alignment of major streets to the line of view to the Tararua ranges.

There is no case law that I know of that sets a standard for how many viewpoints should be selected. In my opinion Mr Wyatt has employed the best technology available to identify those considered to be affected and selected representative viewpoints on that basis.

The primary purpose of a visual simulation is to portray, in as realistic manner and context as possible, a proposed activity, modification or change in the viewed landscape. Visual simulations are not “real life views” – they are, however, useful tools to assist in the assessment and decision making processes. The more accurately the simulation, the better informed and more transparent judgments on effects can be made.

3.81 Photomontages

Overview

Photomontages illustrate a two dimensional view of a proposed activity from a particular viewpoint as depicted in a photograph – not as it would appear as a three dimensional image as seen in the field with the human eye.

There is some discussion within the profession that visual simulations in the form of photomontages are inadequate in their ability to show the full effects of wind turbines in terms of turbine movement and the three dimensional arrangement of turbines in the landscape. They can never fully replicate the range of light and atmospheric conditions that occur throughout the day or over a year which in turn influence the clarity and perception of objects within a landscape. Nor can they reflect the changing viewpoint of a viewer turning their head, turning their body, moving around a site or moving through the landscape.

NZILA is currently drawing up best practice guidelines for visual simulations (in the form of photomontages). An Advice Note from the Landscape Institute (UK) acknowledges that while attention has tended to be focused upon the use of 50mm focal length lenses (or its digital equivalent) for most situations, they do not prescribe a single camera format in all situations. It is more important to ‘capture’ and represent the relevant field of view.

Experts

Mr Wyatt has provided a detailed description in his evidence of the photomontage preparation.³⁹ I understand that some of Mr Wyatt’s photomontages have been digitally altered from the original photographs to enhance the contrast between sky and landform due in part to the prevailing weather and atmospheric conditions on the day that the photographs were taken. This has been noted on the images and is discussed in his evidence.⁴⁰

Caucus

- The Caucus agreed that the Wyatt explanation of the use of a 90mm lens was helpful
- They agree that photomontages should reflect the horizontal and vertical scale of distant objects in the landscape. The photographs seem accurate in scale and the montages are useful.
- Bray has some concern re technical accuracy of the simulation.

Summary

I have read Mr Wyatt’s evidence and viewed his photomontages (although not in the field). There appears to be no dispute that the photomontages accurately portray what turbines can be seen from what viewpoints.

³⁹ Mr Wyatt evidence Technical approach 6.4-6.11 and Photomontage preparation 10.8-10.11

⁴⁰ Mr Wyatt evidence 10.11(f)

I agree with Mr Bray that such photomontages are tools, to be used as a guide to support field observations. I observe that the major points of difference between the statements of evidence arise from the interpretation of the effects rather than the photomontages themselves.

It is my opinion that given the size of the subject site and the potential extent of the landscape context that the proposed Turitea Wind Farm is located in, factors such as the viewing distance, the location of the turbines, the number of existing and proposed turbines and their visual prominence will be more important in determining the visual effects than the clarity of the photomontage and the light conditions of the day.

2.82 3D simulations: K2VI (PNCC) and Memory map (Wyatt)

Overview

Three-dimensional simulations, particularly those that can show movement and intervening vegetation better represent what can be seen.

Mr Van Der Leden describes the K2Vi software tool and the 3D modelling of:

- the underlying landform (based on digital terrain data) draped with
- an aerial photograph overlaid with
- cadastral data and containing
- 3D models of turbines, buildings and representative vegetation and people for scale.
- The turbines can be set to rotate at speeds consistent with manufacturers data.
- Viewers can 'fly-through' the landscape.

Mr Anstey notes the limitation of the programme is in its flattening of the vegetation.

Mr Wyatt's Memory Map software creates a similar 'fly-through landscape' with 3D modelling of turbines within the topography but no turbine movement.

Caucus

- The Caucus agreed that both were useful tools and would be useful for the Board of Enquiry.

Summary

I have seen Mr Wyatt's Memory Map but have not viewed PNCC's K2Vi. I can only concur with the Caucus statement that these are useful tools, particularly for their ability to show the full effects of wind turbines in terms of the three dimensional arrangement of turbines in the landscape and turbine movement (in the case of K2Vi). As with photomontages, they can never fully replicate the subtle range of light and atmospheric conditions that influence the visual prominence of the turbines within the windfarm site.

3 Assessment Methodology

Overview

It is difficult to evaluate each expert's methodology given the variation between the focus and scope of assessment.

Experts

Mr Brown and Mr Coombs have focussed their evidence on landscape assessment with specific emphasis on statutory requirements, the identification (or not) of s6 and s7 outstanding and significant landscapes, and the ability of these landscapes to absorb change rather than the assessment of the specific effects of the proposed windfarm on this site.

Mr Wyatt assesses visual effects using factors such as:

- Distance of the viewer from the site
- The nature and sensitivity of the surrounding landscape (based on his landscape units)
- The number of viewers able to see structures on the site from the particular viewpoint. Viewer numbers were classified as high, medium or low, based on the road providing access to the particular viewpoint. State Highways and roads within townships were classified as "high", local connector roads as "medium", and small local roads and other infrequently visited locations as "low".
- The significance of the existing view to the viewers.

Ms Lucas's assessment is focused on the visual and landscape impacts of the proposal on the wider landscape and effects on identified landscape values. She assesses visual effects using factors such as:

- Distance of the viewer from the site
- The nature and sensitivity of the surrounding landscape (based on her landscape units)
- Visual prominence with an emphasis on the factors outlined in 2.3 such as the number and extent of turbines visible and their visual anchoring, views of overlapping turbines, the expanse of view, light and atmospheric conditions and orientation of views.
- The significance of the existing view to the viewers.

Mr Bray employs a different process, assessing how the proposed Turitea windfarm sits within the broad scale ideal, before focussing on effects from more specific viewpoints. He assesses the visual effects of turbine groupings from a range of representative viewpoints including those employed by Mr Wyatt and using his photomontages.

He notes "*Determining the significance of effects of a proposed windfarm requires an analysis of each of the factors listed from a number of viewpoints in the landscape. Factors should not be considered exclusively, but rather an assessment made regarding how the combination of factors affects the potential significance of the*

windfarm in a landscape. It may also require individual assessment taken from dwellings suspected of being susceptible to visual amenity effects.”⁴¹

Mr Anstey reviews Mr Wyatt's assessment of effects using the same range of assessment factors but with a different interpretation.

Summary

I note that Mr Wyatt effectively ‘pre-selects’ the nature and sensitivity of each site (based on his defined high sensitivity for landscape units which appear pristine, unique or dramatic and low sensitivity for landscape units which are common and do not exhibit features that the community values highly) and evaluates the effects on that basis.

In contrast Mr Bray and Ms Lucas define their landscape units by landform and apply the evaluation criteria at the time of assessment of effects.

While evidence from each of the experts shows a slightly differing methodological approach, all of the assessments employ standard terminology and processes, including evaluation with particular reference to the modified Pigeon Bay criteria.

4 Assessment of Effects

4.1 Visual Effects

Road users

Expert

Mr Anstey uses traffic evidence provided by PNCC to show the number of vehicle movements per day using local roads. He therefore disputes a number of Mr Wyatt's assessments which were not considered significant due to low numbers of road users.

Caucus

- Anstey and Wyatt agree that the traffic numbers in the Anstey Evidence are likely to be correct.
- Anstey, Bray and Lucas disagree with the level of impact assessed by Wyatt is his evidence and the AEE.

Public spaces

Expert

Mr Anstey takes issue with Mr Wyatt's claim that there are very limited views of the ranges from Palmerston North. He notes “*There are at least eight major and several minor roads traversing the city that are oriented directly towards the proposed wind farm. There are also many areas, including a number of parks and walkways, along the boundary of the built environment from which the whole wind farm would be seen, as well as existing turbines. Many of these areas are within 6 km of the proposed wind farm.*”⁴²

⁴¹ Mr Bray evidence para 145.

⁴² Mr Anstey evidence para 57

Caucus

- Anstey, Bray and Lucas disagree with the level of impact assessed by Wyatt is his evidence and the AEE.

Residential Impacts

Expert

Mr Wyatt has provided photomontages and assessed a large number of residential properties. His assessment is based on the assumption that:

- An occupant of a residential dwelling will have a high degree of sensitivity to the change in their surrounding landscape.
- Viewer numbers for residential properties are not applicable.
- The selected location for the assessment is one which is most used (i.e. a patio or outside entertainment areas) or is most visually impacted (i.e. a view from second storey window).
- Landscaping may mitigate the visual impact at many residential locations.

Mr Anstey, in his review of Mr Wyatt's assessment notes that:

- Most residents in the local rural residential properties assessed by Mr Wyatt choose to live there, at least in part, for the views.
- In the focus group residents claimed that views to the hills and out to the Manawatu Plains were particularly important.
- In an environment with high natural character values where there are currently no structures in the view any intrusion of large built structures would be significantly adverse.
- Residents are unlikely to willingly mitigate adverse effects with planting when the views to the hills and onto the skyline are so special (and their primary views).
- Most of the properties are 'working properties' so that outdoor activities are frequent. Mr Wyatt does not address the effects of the wind farm beyond immediate dwellings.

Caucus

- The Wyatt scale assesses "More than minor" as being able to be mitigated. "High" is a level of assessment that cannot be mitigated.
- Anstey, Bray and Lucas disagree with the level of impact as "More than minor" in many of the residential assessments and believe that these should be "High" as many of these can't be acceptably mitigated.

Summary

In summary, in the evidence prepared, Mr Anstey, Mr Bray and Ms Lucas disagree in a number of examples with the evidence of Mr Wyatt, both in the interpretation of the level of visual impact and the interpretation of the significance of the effects.

Given the scope of this report, the time available, the body of information and the scale and complexity of the proposal, I can only assess the validity of the expert evidence in generalisations. The differences in interpretation arise not from a philosophical basis but from a greater knowledge of the wider landscape, of the community and its values and the movements of people through the landscape.

With regard to methodology and assessment tools as detailed in section 2.

- Landscape units: the more detailed the landscape unit is, the greater the ability to evaluate subtlety and local nuance in the landscape
- Visual prominence: the zone of visual influence provides a starting point for assessing visual effects. Additional factors influencing the visual prominence of wind turbines cannot be determined on a viewshed basis – they require site-

specific field work and analysis and still may in the end be dependent on the attitude of the viewer.

- Community values: perception studies of a generic community are useful but current, site specific data gathered from informed communities must by definition carry more weight.
- Viewpoint selection and consideration of affected parties: local data is important; the greater the level of detail, the more accurate the identification of the user groups and their needs.

In the matter of assessment of visual effects, Mr Wyatt has produced a thorough and detailed assessment, and has supplied an excellent set of representative photomontages to assist in the assessment and decision making processes. However I prefer the evidence of Mr Bray and Mr Anstey due to the greater level of specificity in their assessments. I note that Mr Anstey has had the advantage of working with PNCC and having access to expert data.

Given the number of residential properties within 3-3.5km of the nearest turbine, the potential for visual impacts ranging from *more than minor* to *severe* is significant.

Given the proximity of the city and its orientation towards the Tararua Ranges, the visual effects of the proposed wind farm will be *more than minor* when viewed from a number of public viewing points.

Mr Bray and Mr Anstey note in their evidence where the removal of specific turbines would mitigate effects on both a local and district scale. This is an avenue for the Board to explore.

4.12 Access, Earthworks and Vegetation Clearance

Overview

Most windfarms in New Zealand are located on prominent (and often steep) sites. The visual impact of the earthworks required to create access to the site and to locate ancillary buildings and structures can be substantial. Unlike the existing adjacent windfarms, the bulk of Turitea windfarm is located in an established reserve with natural landcover rather than in a pastoral landscape. There will be additional impacts resulting from the removal of vegetation in an environment where natural revegetation can be slow.

However it is noted that access through the site is via an established track along a relatively flat and open ridgeline and the bulk of the turbines within the reserve are located along that track.

Experts

Earthworks at the Turitea Wind Farm to provide for both roads and pads have been designed so that they are primarily cut in to the existing ground surface to minimise visual impact. Mr Wyatt notes that the road and associated earthworks will remain largely hidden from view, and therefore minimise any visual effects to the extent that they are at worst no more than minor.

Ms Lucas is concerned that the legibility of landform and vegetation patterns would be adversely affected by the proposed earthworks (and large structures).

Caucus

- The Caucus agree that roading and other associated infrastructure are unlikely to have significant visual effects from vantage points beyond the Reserves.

Summary

Construction of the windfarm will undoubtedly create short-term impacts, particularly with the widening of the existing main track and the construction of access to the turbines located on ridges below the main track. Expert evidence, supported by personal observation, is that effects of earthworks and vegetation removal will be contained within the Turitea Reserve and mitigated over time by the proposed revegetation.

4.2 Cumulative Effects

Overview

The issue of cumulative effects, particularly the potential landscape and visual effects arising from wind farm development, is the subject of debate in much recent case law. There is general agreement that the existing RMA legislation has the means to deal with cumulative effects including the potential effects of wind farms that have been granted consent but have not been constructed.

The difficulty lies in the identification and assessment of the potential cumulative effects and the significance of incremental changes, be they:

- The number of turbines within the site ie when the total number of turbines is 'enough'⁴³,
- Simultaneous visibility - the total number of turbines (windfarms) in the landscape viewed in a single field of vision or glance.
- Successive visibility - the total number of turbines (windfarms) in the landscape viewed in successive views from a single viewpoint, and
- Sequential visibility - the sequence of views of turbines/windfarms experienced while moving through the wider landscape, such as along a highway.

In the case of Turitea windfarm note the following plans showing existing and consented windfarms in the region for the use of the Board (in descending order of scale):

- Figure 2.4: Surrounding Windfarms (MRP RC Application page 18)
- Map 1: Manawatu Windfarm Context (PNCC Evidence: Jeff Baker Appendix 1)
- Attachment 1 & 2: (TAG and FOTR evidence Di Lucas Attachments Part 1)

Experts

It is Mr Wyatt's opinion that as there are no existing turbines on the site the proposal will not give rise to cumulative effects within the site. He states that are few public viewpoints from which Turitea turbines will be able to be seen, either simultaneously or sequentially, in conjunction with turbines within one or more of the existing or consented wind farms. At the same time he notes that Turitea will be located in an "energy landscape"⁴⁴ with very few locations that will have views of Turitea, from which existing or consented turbines cannot already be seen.

He concludes *"The cumulative impact of the proposal is in my opinion minor or less. This is primarily because of the limited number of locations from which cumulative*

⁴³ Environment Court decision on *Motorimu Wind Farm Ltd v Palmerston North City Council* (W067/08): This case deals with an appeal to the Council decision to only grant consent to 75 out of 127 turbines in a new wind farm. The potential adverse landscape and amenity effects (particularly cumulative effects) of the additional turbines were a key factor in this decision.

⁴⁴ Mr Wyatt evidence, (his quotation) para 12.15 c)

views will be experienced (either simultaneously or sequentially), the distance of even the closest turbines from such viewpoints, and again the high level of community acceptance for wind turbines in all but the most sensitive of locations."⁴⁵

Mr Bray's assessment approach has a strong focus on cumulative effects or at least the potential for cumulative effects given the existing Manawatu landscape context that is the receiving environment. He states "*Collectively, the 366 existing (constructed or consented) turbines in the Manawatu landscape create one of the world's largest, land-based windfarms. Therefore, this proposal for a further 122 turbines has significant potential to create cumulative landscape and visual effects in respect to the existing turbines, and is, in my opinion, one of the integral issues of this proposal.*"⁴⁶

Both Mr Bray and Ms Lucas describe the wider landscape context and existing windfarms. Ms Lucas draws attention to the variety of turbine styles, which "*when viewed together result in additional visual and landscape effects. With obviously differing heights and structure of masts, with differing blade numbers and blade lengths, the scale and character of the turbines vary, they also vary in their relationship within groups, and between groups of differing types.*"⁴⁷

It is Ms Lucas's opinion that the cumulative effects resulting from the proposed Turitea windfarm would adversely impact on the landscape values of the Tararua Range and the enjoyment of the range landscape for many people in the community, giving rise to a 'sense of encroachment or even threat'.

Mr Bray undertakes an analysis of windfarm development in the region and provides a useful summary of the existing (and proposed) turbine design elements.⁴⁸ I direct the attention of the Board to this table in his evidence as it has not reproduced well here.

⁴⁵ Mr Wyatt evidence 16.2 (h)

⁴⁶ Mr Bray evidence para 9

⁴⁷ Ms Lucas evidence para 153.

⁴⁸ Mr Bray evidence page 25. The diagram

Mr Bray concludes that as the landscape has already been developed with a number of windfarms containing a number of existing and consented turbines, it is likely to be sensitive to further development. He concludes that the turbines in this proposal would significantly increase the recurring view of turbines people have in this landscape.

Looking at turbine location within the subject site, Mr Bray concludes that turbine development should be restricted to the main ridgeline, given that the pattern of existing windfarm development is predominantly on the main ridgeline. Turbines on the foothills would be a 'doubling up' of the apparent density of the windfarm, the effect being a greater saturation of windfarm development in this part of the landscape.

Having completed his own assessment, Mr Anstey notes that given the alignment of many of Palmerston North city's roads, there are many public viewpoints from which Turitea and other windfarms would be seen together in the same view. In addition there are numerous residences around the city and closer to the subject site that would be able to see both Turitea and existing turbines. It is his opinion that there would be cumulative visual effects for rural dwellers, especially those in the foothills moving around their properties.

*"The Turitea Wind Farm would double the length of the ranges occupied by Turbines between the Manawatu Gorge and the Turitea Valley. Beyond this is Te Apiti in the north and, potentially, Motorimu in the south. If Turitea and all of the consented wind farms were built there would be substantial cumulative effects. Wind turbines would be a significant feature in the view for many who live on the Manawatu Plains and for the many who travel its highways."*⁴⁹

Mr Anstey reviews Mr Wyatt's evidence and refutes the concept that a new wind farm cannot be cumulative because there is already a windfarm in the same view.

Caucus

Successive and Sequential views

- Anstey, Bray and Lucas believe that the cumulative effects are unacceptable, especially as the Turitea turbines fill the gap on the ranges directly south east of Palmerston North.
- Wyatt believes that this is already a landscape which contains wind turbines and that the cumulative effects are acceptable.

Within the site

- Anstey, Bray and Lucas also believe that there are cumulative effects within Turitea Wind Farm because of the quantity and distribution of the turbines.
- Wyatt does not believe that there are additional cumulative effects, simply because this proposal contains a number of wind turbines.
- Anstey, Bray and Lucas believe that the cumulative effect is exacerbated because of the contrast in style of turbines (height, blade number & blade proportion) between Turitea and the existing and consented wind farms.
- Wyatt disagrees and believes that the increased height and wider spacing actually decreases the visual impact.

⁴⁹ Mr Anstey evidence para 16

- The Caucus agrees that the two bladed wind turbines should not be continued as these have additional adverse effects.

Summary

Without an assessment that effectively identifies the regional and district landscape resource and its value to the community, it might be difficult to establish when 'enough is enough'.

However I note that:

- The proposed Turitea windfarm would be fifth in a sequence of windfarms spread along the Ruahine and Tararua ranges from Te Apiti at the southern end of the Ruahine ranges across Manawatu Gorge to Tararua Stages 1,2 and 3 at the northern end of the Tararuas to Te Rere Hau, Turitea and to the south west, Motorimu which has been consented but is yet unbuilt.
- The three existing and one consented windfarm have a total of 366 existing (constructed or consented) turbines.
- The Tararua Ranges are an important feature and form a backdrop to Palmerston North.
- The size and number of turbines within the proposed windfarm are greater than in other existing Manawatu windfarms.
- There are many public viewpoints from which Turitea and other windfarms would be seen together in the same view.
- There are many residences that would be able to see both Turitea and existing turbines.
- Turitea Wind Farm would double the length of the ranges occupied by turbines between the Manawatu Gorge and the Turitea Valley.

and

- Turitea as proposed would significantly increase the recurring view of turbines people have from the city, or from traveling through the district along major transport corridors.

I agree with Mr Anstey that Mr Wyatt cannot simultaneously claim that 'there are few panoramic views of the Ranges from publicly accessible places'⁵⁰ and 'there are very few locations that will have views of Turitea, from which existing or consented turbines cannot already been seen'⁵¹.

I disagree with Mr Wyatt that the addition or removal of the Turitea Wind Farm will make very little difference to an area in which views of wind farms are common, and that the additional cumulative impact is therefore considered minor. This seems to contradict the very definition of cumulative effects.

I do not support his view that the significance of cumulative effects mitigated by community perception studies that "*have consistently shown a high level of support for the presence of wind turbines in all but the most sensitive of locations.*"⁵²

Social impact analysis, based on the input of over 500 people indicates that residents of Palmerston North are beginning to reject the idea of more windfarms nearby.

⁵⁰ Mr Wyatt evidence para 12.15(b)

⁵¹ Mr Wyatt evidence para 12.15(d)

⁵² Mr Wyatt evidence para 12.15(f)

Submissions received for this application indicate a level of concern within the community that there are already too many windfarms on the Manawatu skyline

Having reviewed the evidence I conclude that overall the cumulative visual effects of the Turitea windfarm proposal will be significantly more than minor.

4.3 Landscape effects

The landscape values of the Tararua ranges, and the foothills between the subject site and the city have been assessed in all evidence and thoroughly covered within the section of the report that covers Landscape Classification.

Summary

Based on the range of evidence presented, it is my opinion that all evidence concludes that:

- the northern end of the Tararua Range forms a major natural feature and landscape backdrop for Palmerston North City and Tararua District.
- Turitea Reserve in particular, has high visual amenity and is at the very least a high amenity landscape.
- The area of the foothills outside of the Turitea Reserve is a high amenity landscape.

The Turitea Wind Farm as proposed would have more than minor landscape amenity effects on the natural character of Tararua ranges and foothills. City. The size of turbines, and their location on the skyline would make them the overwhelming determinant of the character of the foothills and ranges, both within and beyond their immediate setting.

5 Mitigation and Planting

Overview

Experts

Mr Wyatt offers the proposal of vegetative mitigation for residential properties. Planting may be designed to either screen the wind turbines from view, or significantly reduce the visual dominance of wind turbines through filtering views.

He states that appropriate landscape treatments, will in nearly all instances, reduce a visual impact from:

- *more than minor* to a *minor* adverse effect or in some cases to a *de minimis* effect.
- *high* or *unacceptable* adverse effects to a *more than minor* effect that still recognises the significant level of visual impact..

Although he notes that the appropriateness of landscape mitigation can only be assessed on a case-by-case basis, he has provided a Summary Assessment of each

of the 25 representative residential viewpoints⁵³ with the overall visual impact from each viewpoint before and after landscape mitigation. In circumstances where such mitigation may be possible he has provided an indicative sketch has been provided to broadly illustrate the extent to which this could be achieved through landscape treatment.

In previous projects he had been involved with, the mitigation offer has been made following approval of the wind farm, to all affected landowners within 3km of the development. He suggests that the same process is used with Turitea windfarm.

In Mr Anstey's opinion planting is not an appropriate solution for mitigation of effects for a number of reasons: planting may not be practical, planting may not be acceptable to residents and a vegetative screen mitigates effects from a limited range of viewpoints on the property.

He notes that many rural residents choose, at least in part, to live outside the city for the views and would not willingly obstruct their views even to screen views of turbines. And for many residents, views to the hills were their primary views. "There is little point in choosing to live in a rural setting and then walling your house in with trees."⁵⁴

Mr Bray too disputes the use of planting for mitigation of effects. He notes that that given the potential lifetime of a windfarm of 20-25 years, screening vegetation for mitigation cannot be relied on to achieve the required heights in the required timeframe, and that trees are ephemeral, and may be blown over or may die during that time.

He further notes that such trees may have adverse effects on light entering properties with unwanted shading for either the resident or the neighbouring property.

Caucus

- The Caucus agrees that landscape mitigation is not appropriate for public viewpoints.
- Anstey, Bray and Lucas believe that planting is not an appropriate mitigation measure.
- Wyatt disagrees and this method has been used in all cases in which he has been involved.

Summary

There are a number of issues to consider.

- Vegetative mitigation may be an option.
- The appropriateness of the form of landscape mitigation can only be assessed on a case-by-case basis
- Vegetative mitigation cannot be relied upon for permanent long-term mitigation.⁵⁵
- Even if it is possible to mitigate the visual impact of views of turbines from one viewpoint, say within the house, it is not necessarily possible to mitigate them from other well-used areas within the property. The findings of the Court in Project West Wind was that rural residents enjoy the amenity values of their rural lifestyle and by definition that is living and working outside the house and around their property.

⁵³ Mr Wyatt evidence Table 32, page 134

⁵⁴ Mr Anstey evidence para 79.

⁵⁵ W031 /2007 para 520

“ 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.”⁵⁶

The ability to mitigate adverse effects can only be assessed on a case-by-case basis. It may simply not be achievable for some properties for a number of reasons: their orientation, local landform or proximity to neighbours. Even where it is possible, it should be used only if the resident so desires. The final decision of the resident should be whether to maintain their existing views or not, as opposed to the choice between viewing a turbine or viewing a shelterbelt.

In these residential properties, planting should not be used as an enforcement mechanism to mitigate visual impacts and reduce the significance of the final visual effect without the consent of the owner. Planting cannot be regarded as an appropriate mitigation measure for every situation.

6	Other Submissions Received
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Overview

I have reviewed the Summary of Submissions April 2009, prepared by Hill Young Cooper Ltd located on the MfE website with regard to concerns on landscape, visual and cumulative effects.

I direct the Board towards the overview Submissions’ Geographic Location and Location Map ⁵⁷ which shows the general geographical distribution by address of submissions received.

To help assess the reasons for submissions for this summary report, a number of broad categories were created. The table below notes the percentage of submissions that referred to each category. (*The percentages do not add up to 100, as each submission could cover multiple categories.*)

⁵⁶ W031 /2007 para 519

⁵⁷ Summary of Submissions April 2009. Page 10 & 11

'Landscape' related issues fall into at least three of these broad categories. As Ms Lucas notes in her evidence, there is some cross-over re the definition of amenity with submissions between concerns on effects on physical character (Amenity Effects) and concerns on the experiential landscape such as the loss of rural character and a diminishment of lifestyle and enjoyment (Social and Cultural Effects).

Amenity Effects

Appendix 6, the summary of submissions on effects on amenity, includes all submissions which noted issues to do with:

- visual impacts (i.e. location, size and shadow flicker);
- effects on views;
- effects on character;
- noise effects;
- traffic effects;
- waste effects; and
- dust effects.

The summary also notes:

“A number of people stated that the Tararua Ranges are the only distinctive or beautiful part of the region, which is generally flat and does not have many prominent landforms. Most of the submitters that noted this believed that the ranges should be left in their current state, as the proposal would destroy the beauty of the ranges and this distinctive feature.”

and

“A common comment was simply that the turbines are proposed in areas that are just too close to too many residents.”

Social and Cultural Effects

This second largest category of issues included submissions on the effects on people's well-being and livelihood, and recreation and community effects. There are comments in submissions on loss of rural character and a diminishment of lifestyle and enjoyment.

“Loss of lifestyle and enjoyment for residents and visitors was another common theme. Many submitters highlighted that they had specifically moved to the area for its tranquil and rural nature. People often noted that they had worked hard to be able to have their current dream home and that the enjoyment of it would be taken away from them. This was noted to be a stressful and worrying experience. Transmission

lines, turbines and large-scale construction were not considered to be consistent with a rural lifestyle by many submitters.”

The area was noted by a number of submitters as being important recreationally. Horse riding, road cycling, mountain biking, walking, hunting and tramping were all noted as being prominent recreational uses of the area. It was highlighted that recreation will be adversely affected by the increase in heavy traffic on the roads, making it unsafe for recreational road uses. Other submitters stated that the sense of tranquility and “getting away from it all” while recreating would be severely diminished by the large scale and possible noise of the turbines. For this same reason other submitters noted that the proposed ecopark would be an unpleasant place to be.

Regulatory and Strategic Issues

The summary notes:

“A number of people suggested that the proposal was contrary to the RMA; submitters often referred to the principles of the Act or specific parts or sections. Others stated that they believed the proposal was contrary to the district or regional plans and policy statements of the area.”

and

“A small number of submitters thought that the proposal to have turbines inside the Turitea Reserve would not meet the requirements of the Reserves Act.”

Experts

Mr Wyatt noted the broad areas of concern to be:

- (a) is contrary to sections 6(b) and 7(c) of the Act;
- (b) will affect the natural character of the Tararua Ranges skyline
- (c) will dominate and encroach on the living conditions of Turitea residents; and
- (d) cumulative effects on the landscape

He considers that these matters have been adequately addressed and that effects can be mitigated through the adoption of the various measures already discussed in his evidence.

I note that there has been no discussion of loss of rural character, rural lifestyle and recreational amenity in Mr Wyatt’s evidence. Neither Mr Anstey or Mr Bray make comment on issues raised in submissions although Mr Anstey does provide an overview of effects on rural character in ‘Overview of Rural Residential’ and effects on recreational character in ‘The Kahuterawa Recreation Hub’.⁵⁸

Caucus

The Caucus made no collective statement on their response to issues raised by submitters.

Summary

The summary provides a breakdown of submitters supporting or opposing the application, the overall geographical locations of submitters and a map of the locality of submitters in and around Palmerston North. Unfortunately it does not provide data on the submissions of residents in close proximity to the subject site.

⁵⁸ Mr Anstey evidence para 96-102

It is not within my scope (or ability) to analyse the overall submissions in terms of support or opposition from those residents in the community for whom the potential impacts will be greatest. However I note the greatest numbers of submission concerns in any category are around the issue of Amenity effects, and this would be even greater if combined with relevant submissions in the category of Social and Cultural Effects.

A conservative review highlighting words and phrases that focused on cumulative effects such as 'cumulative', 'enough is enough', 'saturated' and 'already too many' shows 122 submissions or in the order of 25% of the submissions received on amenity were concerned about cumulative effects.

From a landscape perspective, the site for the proposed Turitea Wind Farm is unique because of (amongst other things) its proximity to Palmerston North city and its 80,000 residents, its proximity to a large rural and rural residential population on land that has been developed for this purpose as part of the city's growth strategy, and its location on a landscape that is both a focus and a backdrop for the city.

The proposed Turitea windfarm is also the fifth windfarm proposed in the region, not the first. Evidence from community focus groups, social impact analysis and submissions indicates that they are an informed population who are concerned at the impact of the windfarm on their community and their properties.

Given the number of residential properties within 3-3.5km of the nearest turbine, the potential for visual impacts ranging from *more than minor* to *severe* is significant. Planting can mitigate effects but cannot be regarded as an appropriate mitigation measure in every situation.

Given the proximity of the city and its orientation towards the Tararua Ranges, the visual effects of turbines on the skyline will be *more than minor* when viewed from a number of public viewing points.

The Turitea Wind Farm as proposed would have more than minor landscape amenity effects on the natural character of Tararua ranges and foothills. City. The size of turbines, and their location on the skyline would make them the overwhelming determinant of the character of the foothills and ranges, both within and beyond their immediate setting.

Given the size and extent of the proposal, its location as fifth in a sequence of windfarms spread along the Ruahine and Tararua ranges from Te Apiti at the southern end of the Ruahine ranges to Motorimu in the south west, I conclude that the cumulative visual effects of the Turitea windfarm proposal will be significantly more than minor.

I support the expert evidence of Ms Lucas and Mr Anstey that the proximity of the proposed turbines within the Turitea Windfarm would have significant adverse effects on the natural scenic values of Hardings Park.

Appendix 1

Documents reviewed

Documents supplied by	Document	Reviewed	Brief Overview
Resource consent application	AEE with particular reference to Chapters 1, 2, 4 and 6.		
	Appendix K Landscape/Visual, ERM NZ Ltd		
MRP Expert evidence			
	Mr Wyatt (Visual)		
	Mr Wyatt (Rebuttal)		
	Mr Brown (Visual)		
	Mr Brown (Rebuttal)		
	Mr Coombs (Rebuttal)		
	Mr G Pollock (brief scan)		
Submitter Expert evidence			
PNCC	Mr Baker Planning		
	Mr Anstey Visual		
	Mr Baines SIA		
	Mr Anstey Visual,		
	Mr Van Der Leden Visual Simulations		
TAG and FOTR	Ms Lucas Visual		
	Mr Bray Visual		
Horizons	Mr Hindrup Planning		
Horizons for POP	Mr Anstey Landscape		
Summary of submissions			
Caucus report			
Urs Section 42a report			

Appendix 2

Expert Witness Landscape and Visual		Summary Focus of evidence
Mighty River Power		
Applicant Expert witness and rebuttal	Mr Wyatt	<ul style="list-style-type: none"> Overall assessment of the potential visual and landscape effects of the Turitea Wind Farm Rebuttal Mr Anstey, Bray, Baker and Ms Lucas
Applicant Expert witness and rebuttal	Mr Stephen Brown	<ul style="list-style-type: none"> Strategic assessment of the landscape surrounding the subject site. No specific assessment of the effects of the proposed MRP development. Rebuttal Mr Anstey, Bray and Ms Lucas
Applicant rebuttal	Mr Coombs	<ul style="list-style-type: none"> Focus on issue of ONFL's with specific reference to One Plan and rebuttal of Mr Anstey's Sec42a report for Horizons. No specific assessment of the subject site and the effects of the proposed MRP development.
Submitters		
Palmerston North City Council	Mr Anstey	<ul style="list-style-type: none"> Review Evidence provided in support of the application. Specifically review Mr Brown and Mr Wyatt evidence Undertake additional assessments where required to support his conclusions. Engaged with community and focus groups in conjunction with SIA expert.
TAG and Friends of Turitea Reserve	Ms Lucas	<ul style="list-style-type: none"> Focus on overview evidence regarding landscape values and visual effects. Review Mr Brown and Mr Wyatt evidence with regard to landscape analysis and visual effects. Review Mr Bray evidence with regard to amenity values.
TAG and Friends of Turitea Reserve	Mr Bray	<ul style="list-style-type: none"> Broad scale assessment of the existing landscape including detailed analysis of the existing windfarms; Assessment of how the MRP proposal sits within the broad scale ideal; assessment of the more local effects on nearby residences and public views Review of the landscape and visual amenity evidence supplied by the applicant. Emphasis on Cumulative effects throughout.
Horizons	Mr Anstey RE One Plan (Planning, Horizons Regional Council)	<ul style="list-style-type: none"> Proposed One Plan and the landscape provisions set out within it. Key issues raised in submissions. Recommendations to improve clarity and certainty in order to best reflect the intent of the POP.