BEFORE AN EXPERT PANEL
SOUTHLAND WIND FARM PROJECT

Under the	**FAST-TRACK APPROVALS ACT 2024**
In the matter of	an application for resource consents, a concession, wildlife approvals, an archaeological authority and approvals relating to complex freshwater fisheries activities in relation to the Southland Wind Farm project
By	**CONTACT ENERGY LIMITED**
	Applicant

SOUTHLAND WIND FARM
TECHNICAL ASSESSMENT #4: LANDSCAPE, VISUAL, AND NATURAL CHARACTER EFFECTS

SHANNON BRAY

18 August 2025

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EXECUTIVE SUMMARY

I. This report is an expert assessment of the potential landscape, visual, and natural character effects associated with the proposed Southland Wind Farm project (Project), located at Slopedown, Southland.

II. The Project comprises up to 55 wind turbines and associated wind farm infrastructure, and grid connection works comprising a 16km-long transmission line and switching station. This assessment has been undertaken to inform the application for approvals under the Fast-Track Approvals Act 2024.

III. The site is broadly located within a productive rural landscape that already accommodates energy infrastructure and exhibits characteristics consistent with rural working environments. The Project is consistent with the rural character of the area, as defined in the Southland District Plan, and the introduction of wind turbines and infrastructure is a compatible and appropriate form of land use within this context.

IV. From a perceptual landscape perspective, the Project is considered to avoid dominance and maintain coherence with the receiving environment. The turbine layout avoids key landform features, particularly the cuesta scarp, and the turbines remain subservient to the landform. The visual catchment is relatively constrained, with the broadest views occurring from the west and northwest. In these views, the turbines are perceived as part of a broader productive landscape and do not significantly disrupt landscape legibility. Views from the south are more limited and fragmented, further reducing potential perceptual landscape effects.

V. In relation to natural character (which is a consideration particularly relevant to the various streams, wetlands and margins considered under s6(a) of the RMA), the majority of the Project site is unremarkable. It is the wetlands and bogs of the 'Jedburgh Plateau' part of the site (where approximately 25% of the wind turbines are located) which has the highest relative natural values. However, this area is currently and self-evidently degraded due to previous and ongoing land use, including historic clearance (including by burning), grazing and pest animal activity. The Project includes mitigation measures such as fencing and protection of a 245ha 'Ecological Enhancement Area' from which stock and feral ungulates (deer and pigs) will be excluded, and long-term pest control over a wider 1400ha of the site

(which encompasses the ‘Ecological Enhancement Area’), both of which are expected to enable significant ecological regeneration. These and other measures described in the Wildlands Report[1] 2025 are anticipated to result in a net positive effect on natural character over the life of the Project.

VI. The assessment also considers the broader national context, including the increasing demand for renewable electricity generation and the need to locate such infrastructure where natural resources to allow that demand to be met are available. The report acknowledges that all renewable energy projects generate landscape effects, but concludes that the location and layout of the Project is comparatively well suited to accommodate such development.

VII. In conclusion, the assessment finds that the landscape, visual, and natural character effects of the Project are acceptable and appropriately managed. Having assessed this Project alongside other similar renewable energy projects, my conclusion is that this Project, on this site, is fundamentally sound. It will have effects on landscape that I consider to be acceptable, notwithstanding that they will be perceived by some to be adverse. But when I consider the adverse effects of this proposal I find them to be lower than many other wind farm and renewable energy projects I have studied.

[1] Southland Wind Farm Technical Assessment: Terrestrial and Wetland Ecology, Wildlands Ecology Ltd

INTRODUCTION

1. My name is Shannon Bray. I am a director and landscape architect at Wayfinder Landscape Planning & Strategy Ltd (**Wayfinder**).

Qualifications and experience

2. I have the following qualifications and experience relevant to this assessment:

   (a) I hold a Bachelor of Landscape Architecture with Honours from Lincoln University (1996) and a Bachelor of Forestry Science from Canterbury University (1994). I am a registered fellow and past president of Tuia Pito Ora New Zealand Institute of Landscape Architects (NZILA), and I was the initiator, a reviewer and signatory to *Te Tangi a te Manu* – NZILA's best practice guidance for landscape assessment.[2] I spent 5 years as chair of the NZILA Environmental Legislation Committee, and I have been awarded by the NZILA for my contribution to landscape assessment policy.

   (b) I have over 20 years of experience as a landscape architect in Aotearoa New Zealand, with a specialisation in landscape assessment.

   (c) My wind farm and energy experience is outlined in **Appendix One**. This details my direct involvement in over 25 wind farms in New Zealand, and my expert observation and research of a further 13. I have also visited wind farm locations in Australia, England, Scotland, Denmark and Germany.

   (d) In addition, I have been directly involved with 13 solar farms in New Zealand, and expert observation of an additional 2 constructed solar farms near Whakatane. My related experience also covers hydro-electricity, transmission and telecommunications.

   (e) My technical landscape assessment experience also extends to land development projects, including residential subdivisions and industrial/commercial development.

[2] https://nzila.co.nz/media/uploads/2022_09/Te_Tangi_a_te_Manu_Version_01_2022_.pdf

(f) Over the past two years I have been assisting Tararua District Council with the development of urban-focussed policies for the District Plan Review. This included authoring a *Growth Strategy* (which involved working with Infometrics and Council to determine appropriate growth scenarios, and then identifying suitable areas within the District to accommodate this growth).

(g) My work covers a broad range of clients and roles. I am a registered independent commissioner and have provided technical support to decision making panels (including in fast-track processes). I regularly prepare expert peer reviews for a range of Councils, I am a member of the Tauranga Urban Design Panel, past member of the Nelson Urban Design Panel, and past member of the governance board of the Auckland Urban Design Panel. I have represented community groups and private individuals who have submitted against development proposals. I have presented evidence at Council Hearings, Environment Court, Boards of Inquiry and through the Fast Track Expert Panel process. I have also prepared reports to inform District Plan policy.

Code of conduct

3. I confirm that I have read the Code of Conduct for expert witnesses contained in the Environment Court Practice Note 2023. This assessment has been prepared in compliance with that Code, as if it were evidence being given in Environment Court proceedings. In particular, unless I state otherwise, this assessment is within my area of expertise and I have not omitted to consider material facts known to me that might alter or detract from the opinions I express.

Purpose and scope of assessment

4. The purpose of this assessment is to assess the potential effects of the Southland Wind Farm project (**Project**) on landscape values, visual amenity, and natural character (including of waterbodies and their margins), to inform Contact's applications under the Fast-track Approvals Act 2024.

5. I have been engaged by Contact Energy Limited (**Contact**) to provide expert landscape evidence on the proposal. My involvement in the Project is relatively recent, beginning in April 2025. The purpose of my engagement was to provide a further opinion on the landscape and visual effects of the

Project – in addition to the work Mr Brad Coombs (Isthmus) has undertaken on the Project – however this is a primary, first-principles assessment, not a peer review of Mr Coombs' assessment.

6. The scope of the assessment includes:

   (a) A methodology section that covers my approach to preparing this evidence;

   (b) A collection of key considerations that are in my opinion relevant to the assessment of the proposal;

   (c) A brief summary of the proposal, noting this is detailed in Mr Coombs' assessment and the application documents more broadly;

   (d) A description of the landscape context, referencing material provided by Mr Coombs but adding my own interpretations where I consider relevant;

   (e) A brief summary of the policy considerations, noting this is largely detailed in the application documents by others;

   (f) An outline of my assessment of the potential landscape effects of the Project (including visual effects that are inherently included in my assessment of perceptual landscape effects, and effects on natural character); and

   (g) Final conclusions and recommendations.

THE SOUTHLAND WIND FARM PROJECT

7. Contact is seeking various approvals necessary for the construction, operation and maintenance of the Project, which includes up to 55 wind turbines and associated infrastructure.

8. A full description of the Project is provided within the AEE. I do not intend to repeat it in this evidence.

METHODOLOGY

Introduction

9. I have been engaged by Contact to undertake a primary assessment of the potential landscape and visual effects of the proposed Southland Wind Farm.

I have not prepared a technical report – my assessment and opinion is provided in the form of this evidence only.

10. As outlined, I am aware that Mr Coombs has also been engaged by Contact to undertake a landscape assessment, and while I have conducted my own independent assessment of the proposal, I do not consider it helpful to the Panel to repeat information unnecessarily. On this basis, I have reviewed Mr Coombs' evidence, and throughout this document I will highlight where I adopt or in some way depart from his findings and conclusions.

11. I also adopt the visual assessment material that has been prepared by Isthmus and is attached to Mr Coombs' evidence. I have reviewed this material and consider it accurately presents the proposal and has been prepared using best practice techniques. I make the important note that the visual material is a suite of tools only and that all visual material contains inherent limitations which I am aware of and have considered in my use of the material.

12. I undertook a site and locality visit on Monday 5th May 2025. This included traversing and landing on the site by helicopter, and then driving the complete perimeter of the site on public roads. I have not visited any privately owned properties (other than the site itself) in the preparation of this assessment. I was accompanied on this visit by Mr Harding (Roaring40s Wind Power) and Mr Drayton (Contact), but I directed the navigation and locations I wished to visit. I then spent most of Tuesday 6th May undertaking my own assessment of the wider Southland landscape, including observing other operational wind farms in the region.

13. During the site visit, I attached a GoPro Hero 13 video camera to the front of the helicopter. This captured the whole trip in high-definition video, which provided an excellent record of the Project Site and which allowed me to effectively revisit the site during the preparation of this evidence.

14. Using the GoPro footage, my team at Wayfinder has developed a video that is designed to assist with the understanding of the Project and how it is located within the site and the surrounding context. The video includes a combination of Google Earth animations, a 3D digital model of the site and surrounds, 3D model of the proposal, and various snippets of video and stills taken from the GoPro footage.

15. The video is not an assessment of effects and is designed to show contextual information only. The visuals contained within the video have been accurately prepared using best practice methodologies (as set out by the NZILA Best Practice Guide for Visual Simulations, BPG10.2) – however they are based on widescreen GoPro footage that has been digitally altered to correct lens distortion. In this regard, whilst the video is useful for building an understanding of the site and its context, it should not be used for analysis of any particular effects.

16. Prior to and during the preparation of this evidence, I reviewed the following materials from the previous consenting process under the COVID-19 Recovery (Fast-track Consenting) Act 2020:

    (a) The original Assessment of Environmental Effects prepared by Mitchell Daysh Ltd, updated 5 July 2024;

    (b) The assessment and evidence provided by Mr Coombs (and associated graphical materials);

    (c) The assessment / evidence of Mr Goldwater on ecological matters;

    (d) The assessment / evidence of Mr Clough on matters of economics;

    (e) The assessment / evidence of Ms Anne Steven who provided landscape and visual advice to the Expert Consenting Panel during a previous process for considering an application for resource consents for the Project, under the COVID-19 Recovery (Fasttrack Consenting) Act 2020;

    (f) The Joint Witness Statement between Ms Steven and Mr Coombs that was prepared for that previous fast-track process;

    (g) The decision of the previous Expert Consenting Panel;

    (h) The Cultural Impact Assessment provided by Ngāi Tahu ki Murihiku and the subsequent confirmation by Ngāi Tahu of the resolution of the potential issues raised in that document;

    (i) Various comments made by persons invited by the previous Expert Consenting Panel, as well as media releases by the wider community on the proposal; and

    (j) Other reports and materials from the previous fast-track process.

17. I have also read in draft a number of assessments and other application materials relating to Contact's current application for approvals under the Fast-track Approvals Act 2024, including Mr Coombs' assessment and various reports on the Project's effects on ecological values.

18. I have also discussed the Project with Mr Coombs, Mr Harding, Mr Drayton and the project ecologists which has provided information that has informed my opinions. I have also had Ms Hunter (planner of Mitchell Daysh Ltd) provide information on some planning matters. However, irrespective of these conversations, my opinion remains my own and is based on my own assessment of the proposal and the landscape in which it is proposed to be located.

Other key methodological considerations

19. Before delving into the specific assessment of this proposal, I set out below some more holistic key considerations that I consider relevant to renewable energy projects and assessments of their landscape effects.

Energy demand vs landscape effects

20. As I have outlined, over the past few years, in particular, I have been heavily involved in the assessment of energy sector projects. During this time I have become increasingly aware of the tensions between the growing demand for energy in New Zealand and the need to respond to this with additional generation facilities. During my assessment work, I have been researching and considering the inherent crossover between sections 6(a), 6(b), 7(c) and 7(j) of the RMA – how to balance the protection of outstanding natural features and landscapes, the maintenance and enhancement of amenity values, and the benefits to be derived from the use and development of renewable energy. In a landscape sense, I have been considering at the broad, national scale how we best accommodate our country's demand for energy.

21. To give this some context, the Ministry of Business Innovation and Employment Hīkina Whakatutuki (**MBIE**) recently published a document which explores New Zealand's future energy demands.[3] This document predicts between a 35.3% and 82.0% increase in energy demand by 2050,

[3] Electricity Demand and Generation Scenarios: Results Summary, Ministry of Business Innovation and Employment Hīkina Whakatutuki July 2024. In addition, I am aware of the information prepared for the project by Concept Consulting which discusses the electricity benefits of the project, and I have read the evidence of Mr Clough.

half of which will be provided through electricity. It estimates that between 96.2% and 98.3% of this additional electricity demand will be met through renewable generation methods. The MBIE website, updated 13 March 2025, outlines that approximately one third of this demand will come from households, over a third from industrial sectors, one quarter from commercial sectors and the remainder from various other primary production or transport sectors.[4] Contributing to this demand is population growth, which according to Statistics New Zealand, since 2018 has added the rough equivalent of two cities the size of Hamilton into New Zealand.[5]

22. Converting this to more tangible terms, New Zealand's electricity consumption in 2024 was estimated by MBIE to be around 39,130GWh.[6] Using the percentage growth identified above, this represents a predicted additional growth of renewables over the next 25 years of between 13,813GWh and 32,086GWh.[7] Using this proposal as an example, this represents a requirement for at least an additional 633[8] wind turbines of the same capacity as the proposal, or potentially as many as 1,470 turbines.

23. These figures help demonstrate the scale of potential impact of meeting the New Zealand renewable energy demands through wind alone. There will also be other proposals, utilising different energy sources, such as solar, geothermal and potentially hydro[9] that might also contribute to meeting this demand. All of the calculations above are based on publicly available data. Further information regarding this is discussed in the evidence of Mr Clough.

24. The forecasts are highly relevant to the consideration of landscape effects at a national level, as renewable energy generation, including wind, inevitably results in effects on landscape values. Nationally, as the demand for energy increases, New Zealanders (and international visitors) will need to become more accepting of the inherent landscape effects that renewable energy generation sites create. Such plants need to be located somewhere, and in

[4] https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-statistics-and-modelling/energy-statistics/electricity-statistics
[5] https://www.stats.govt.nz/news/aotearoa-new-zealands-population-passes-5-3-million-people/
[6] Energy in New Zealand 2024, Ministry of Business Innovation and Employment Hīkina Whakatutuki September 2024. I also note the evidence of Mr Clough, in particular Table 1, which places this figure at 43,764GWh.
[7] Calculated as follows: Lower Prediction = 39,130 x 35.3% predicted growth x 96.2% renewable. Upper Prediction = 39,130 x 82.0% predicted growth x 98.3% renewable.
[8] 55 x 7MW turbines delivering a total wind farm capacity of 1,200GWh represents approximately 21.818GWh per turbine. To achieve 13,813GWh a total of 633 wind turbines of the same capacity as the proposal, and to achieve 32,086GWh requires a total of 1,470 wind turbines of the same capacity as the proposal.
[9] I note that there have been no significant hydro-electricity proposals approved through the Resource Management Act. I am involved with the development of the Taheke 8C proposal on the Ōkere River near Rotorua, which is targeted to produce approximately 85GWh per annum. The largest solar farm I am aware of is the Tauhei Solar Park near Te Aroha, covering approximately 182ha and targeted to generate approximately 280GWh per annum.

all cases (wind, solar, geothermal and hydro), the locations are governed by the available renewable resource (alongside other factors such as availability of land, connectivity, constructability and efficiency).

25. In terms of landscape effects, wind generation is often considered to generate the greatest visual effects due to the sheer scale and visibility of turbines; however, hydro projects usually result in significant and permanent landscape change. Whilst solar projects tend to have more localised landscape and visual effects (which can often be mitigated with planting, if required), their demand for space is relatively high (as noted in footnote 8 above).[10] The reality is that all renewable generation options result in some type of landscape effect.

26. In the consideration of landscape effects, particularly in regard to landscape perceptual values, it is widely understood that renewable technologies are more acceptable to most people than fossil-fuel plants,[11] particularly within New Zealand. As such, there is an inherent understanding and widespread acceptance that both wind and solar farms lean further towards beneficial environmental outcomes compared to other non-renewable energy sources, and also against other renewable plants – particularly hydro which usually requires significant modifications to land, waters, and natural character.

27. Part of this is attributable to the renewable and reversible nature of both wind and solar farms (as mentioned in the MBIE reports). Wind farms tend to have a very small footprint (my understanding is that the proposal will have a footprint that is 2-3% of the site area). At the end of its useful life and as part of its decommissioning, the above-ground infrastructure can be removed and foundations buried, leaving just the wind farm tracks (which can be repurposed as farm tracks, or over time rehabilitated with planting). Similarly solar farms can temporarily occupy farms (sometimes co-existing with a reduced farming operation) and be almost completely removed at their end of life. This is unlike larger hydro-electricity proposals and even geothermal plants that may leave residual bores and pipework as well as very long term

[10] Again, using simplistic maths, a total of 49 solar farms the size/capacity of Tauhei would be required to meet the predicted minimum demand, or an area of approximately 9,000ha (or 20,800ha to meet the highest predicted demand).
[11] The Energy Efficiency and Conservation Association ("EECA") publish quarterly insights which regularly confirm New Zealander's preference for renewable energy generation methods. Janet Stephenson from the University of Otago has also published research on "Seven assumptions about public opposition to renewable energies", January 2013. In addition there are numerous publicly available online studies from across the world that point to community preference for renewable energy generation in response to climate change and environmental impacts.

or even permanent changes to geothermal surface features such as geysers, hot pools and steamy ground.

28. Of course, these trends and discussion points do not negate the need to assess and manage the landscape effects of wind farms in specific locations. However, they provide important context in terms of how such effects might be considered, particularly in terms of perceptual and associative landscape values. Ultimately electricity generation is required for people in New Zealand to live in the way we want to live, and the demand for such energy is growing. From my research, the overwhelming preference (this accepting not everyone, but the larger proportion of society) of New Zealanders is for such energy to be generated from renewable sources, which will require the installation of more wind, solar, geothermal and hydro projects across the country. And, as identified, this generation needs to be located where the resource is located. In short – we need renewable energy projects in our landscapes.

29. This context is – and must be – relevant to a fair assessment of landscape effects. The landscape effects on natural values (for example) of a large, intrusive structure that serves no purpose are less likely to be acceptable. Effects must be assessed in their context, and this is typically reflected in the way that planning documents set a particular policy context for renewable electricity generation and other infrastructure.

30. Bringing this back to the RMA (noting again this application will be evaluated in the different context of the FTAA), the position I have reached from the above commentary above is that while an assessment of landscape effects at a site and immediately locality level is, of course, fundamental, so too is benchmarking this assessment against other wind farm proposals in other locations.

31. In my opinion this means ensuring, when a detailed assessment at site level is undertaken, that the rating scale used is benchmarked against other proposals. A “high” rating for this proposal should be equivalent to a “high” rating on another project. I consider it is absolutely possible, and necessary, to compare this project to others recently sought for consent, such as

Waiuku[12] or Mt Munro[13] and determine, in landscape terms, whether it results in better or worse landscape outcomes overall[14].

32. This is not, in my opinion, an assessment of alternatives in the normal sense, but rather accepting the reality that as a country we need wind farms, and that all wind farm proposals will have effects.[15] For such nationally significant infrastructure, the objective is to determine whether – amongst everything that is known about the need for wind farms and the effects they generate – the proposed site is generally a good location for a wind farm compared to other locations, or is it a generally poor location?

Confirmation bias

33. A common issue with the consideration of the effects of proposals such as this is that it places a specific part of a broader landscape in a focussed spotlight. I have experienced on many occasions opposition to projects in previously unknown or non-valued locations.

34. Such confirmation bias partly results from the intense level of scrutiny a particular site gets over other locations in a District or Region. Specialists, such as myself (or ecologists, hydrologists etc) undertake detailed assessments to fully understand the particular site, and in doing, so can often find features that have previously been unknown at a broader study level. Such assessments can then elevate the considered significance of the site above other, similar land areas which have not been studied to the same level of detail (and where such detailed study might result in similar discoveries).

35. There are, of course, times when the discovery of such details necessarily prompts the requirement for a review or reconsideration of policies or published maps. But, in my opinion, any such attempt to reclassify or redefine areas of landscape that are already described or mapped in policy

[12] Recently declined consent by an EPA Panel, noting five turbines were identified by the Panel as requiring removal for landscape reasons even if the remainder of the proposal was granted.
[13] Recently granted consent by the Environment Court, noting four residential dwellings within 1.5km of the proposal that would experience a high level of landscape effects.
[14] Recognising, of course, that all landscapes are different and a direct comparison is not possible. Rather the comparison should be through how effects of the proposal are benchmarked.
[15] I also note the Project Hayes decision (Maniapoto Environmental Society Inc and Others v Central Otago District Council C103/2009 at [762]) that stated *"Of more concern to us about the [first instance] Commissioners' majority decision is that there appears to be an unexpressed premise that a wind farm must be remote from houses. We consider that citizens of working landscapes in rural New Zealand beyond a range of about three to five kilometres from a windy site may need to get used to the idea of a wind farm within their sight, if the site is not within an outstanding natural landscape or protected by another nationally important matter in Section 6 of the RMA."*

must be undertaken in the broader context, in comparison to other potential features across the landscape, and ideally through a public process.

36. In the consideration of landscape, confirmation bias is particularly prevalent due to the use of visual materials and simulations which focus on the particular site, usually centred on the proposal within it. The inherent limitations[16] of such materials (such as the video) then do not capture broader views to potentially more significant landscapes or features, and can warp the consideration of landscape scale.

37. My approach to landscape assessment is to spend at least as much time observing the broader landscape as I have the particular site. Only this way can I truly understand its context and any particularly unique characteristics.

Rural character

38. Related to my commentary above is the appropriateness of renewable energy projects in the rural landscape. Throughout many of the projects I have been involved in, particularly solar but including wind, submitters raise concerns about how the proposal will alter the character of the rural landscape and the enjoyment they derive from it.

39. Nearly all of the regionally or nationally significant generation projects I am aware of in New Zealand are located rurally (excepting smaller, micro-generation sites that can be located on buildings). The scale requirements simply rule out the development of such plants in urban areas, and to date the economic and other challenges with the development of offshore wind proposals off New Zealand's coastline have yet to be overcome.[17]

40. However, to understand the effects of renewable (including wind) projects on the rural landscape, it is important to have a clear understanding of the meaning and interpretation of *rural character*. What does it mean to suggest a landscape is rural, and how does a wind farm fit within such a definition?

41. Broadly speaking, *rural character* is a construct to define the landscape character, or landscape amenity value, of a rural environment. It is a

[16] Mr Coombs includes on the last page of his Graphic Attachments notes on the use of simulations. I extend this warning in that photographs, visualisations, 3D digital models and video all have inherent technical limitations and processes which can skew perspective and reality. Such tools also focus the mind directly towards the proposal, such that even when used correctly – in the field – the focus tends to be towards the site, rather than of the broader context.

[17] I am aware of the advances of national policy in regard to offshore energy development, and the current investigations being undertaken off the south Taranaki coastline for the installation of a 900MW offshore proposal (https://southtaranakioffshorewindproject.com/#:~:text=South%20Taranaki%20Offshore%20Wind%20is,industries%20in%20the%20Taranaki%20region).

technical term that has gained wider use in more recent years as development and urban sprawl puts increasing pressure on the rural landscape. However, there is no national definition for the term, although it is referred to several times in the Southland District Plan (SDP)[18] and a broad interpretation is provided (in GRUZ-P2) as follows:

> *The dominant character of the District's rural working landscapes includes reasonable separation between dwellings to maintain privacy and a sense of openness, the clustering of dwellings with other farm buildings and structures, a generally low background noise level but with some intermittent and/or seasonal noise from rural activities, clean air but with some significant short term and/or seasonal odour associated with farming activities.*

42. Also relevant to consider are what activities are permitted or otherwise encouraged (including through policies) by the relevant district plan in rural areas.

43. I undertook an exercise to search for the term 'rural character' online, and it yielded a variety of results. However, many descriptions share a commonality that it encapsulates the particular elements of an area that make it recognisable as rural rather than urban or wild. These elements will change depending on the nature of the area being considered and vary according to the personal perceptions of people exploring the concept. However, generally speaking, rural character is used to describe the character of a landscape where the amenity is largely derived from an outlook dominated by production activity. In contrast, wild areas or wild landscapes tend to be considered as those that have unconstrained natural habitat (typically covering expansive areas), and urban areas are those that contain a high density of built forms and infrastructure.

44. Importantly, in my opinion, production activity does not necessarily have to be pastoral related. Whilst there are vast rural landscapes across New Zealand dedicated to farming animals for meat or dairy, there are also orchards (apples, citrus, kiwifruit), extensive forestry plantations focused on building materials, grape plantations that produce wine, and other alternative production such as maize, seeds, hemp, biofuels and energy. These are all

[18] Particularly within policy relating to GRUZ such as GRUZ-P2 & GRUZ-P3.

rural based activities, and all contribute to rural character. This concept is distinctly captured in the SDP in the description of the GRUZ (noting both my comments above regarding the requirement for renewable energy to be in the rural environment, also noted in the SDP).

45. Aligned with such production are ancillary built forms that include farm sheds, production facilities, transmission infrastructure, roading and housing. Although not as densely arranged as might be found in an urban landscape, such built forms feature in all rural landscapes. Further, many crops depend on structures such as fenced paddocks, support frames, canopies or even greenhouses.

46. Additionally, many rural landscapes change over time. Particularly prevalent in more productive soils typically used for cropping, such change is a fundamental premise of and expected response to good land management. Changes in farming systems, market demands for products, access to irrigation, and climate change all contribute, and can manifest as small incremental or seasonal changes (such as crop rotation), or more widespread change (such as deforestation, conversion to dairy, or increasing grape production).

47. Renewable generation is also a form of production. Rather than using the soil and/or water resource, wind generation harnesses the wind resource to create a product that is used and valued by people. As identified, it has a need to be in the rural landscape and located in places where the wind resource is sufficiently strong enough (which is typically on elevated landforms) and it is an increasingly recognisable activity across the country.

48. My experience is that it is all too easy to suggest that renewable generation and wind farms are at odds with the rural character of a landscape. However, I am of the opinion that, if appropriately sited, they are inherently connected with it, and much more comfortably located in such production landscapes than in wild, remote landscapes or even in urban landscapes. At a conceptual level, they represent the use of the environment for the benefit of people, in the same way as farming operations.

49. Such considerations go to the heart of the definition of landscape, which is discussed to some level of detail in Section 04 of *Te Tangi a te Manu*. Rural character is heavily associated with associative values – "*places where my food or my wood come from*" – and how this contributes to our sense of

wellbeing and identity (particularly as a country).[19] In my opinion, it is reasonable to draw similar associations with landscapes where our energy comes from, given such energy, particularly renewable energy, is one of our fundamental needs.

50. Additionally, rural landscapes across the country already contain energy infrastructure. This does not exclusively manifest as generation plants, but does include the New Zealand national transmission network as well as local distribution lines.

51. This understanding of the fundamental principles of what constitutes rural character and rural landscapes further contributes to a baseline which I consider is of relevance to this proposal. That is, in my opinion (and remaining subject to appropriate assessment at the detailed, site-specific level), renewable generation plants, including wind farms, are generally more appropriately suited to placement in productive rural landscapes in New Zealand than in other landscapes.

Natural character

52. The term *natural character* was borne out of s6(a) of the RMA, with the preservation of the natural character of the coastal environment, wetlands, lakes and rivers and their margins defined as a matter of national importance. Where I address the concept of, or effects on, natural character throughout this evidence, I am referring specifically to these areas defined by s6(a) and mapped by the project ecologists.

53. Unfortunately, the RMA does not provide any interpretation of the meaning of the term. However, as detailed in Section 09 of *Te Tangi a te Manu*, there has become relatively widespread acceptance of the interpretation that "*natural character is an area's distinctive combination of natural characteristics and qualities including degree of naturalness*".

54. The New Zealand Coastal Policy Statement (2010) lists examples of matters that contribute to natural character of the coastal environment, as follows:

[19] I have prepared submissions on national policy and legislation on behalf of the New Zealand Institute of Landscape Architects that discuss how as a country we leverage our productive rural landscapes and our "green" image (contributed to by renewable energy) to the world, both in terms of our identity as New Zealander's but also in how we market our products, tourism and our film industry.

Policy 13(2): Recognise that natural character is not the same as natural features and landscapes or amenity values and may include such matters as:

1. *natural elements, processes and patterns;*
2. *biophysical, ecological, geological and geomorphological aspects;*
3. *natural landforms such as headlands, peninsulas, cliffs, dunes, wetlands, reefs, freshwater springs and surf breaks;*
4. *the natural movement of water and sediment;*
5. *the natural darkness of the night sky;*
6. *places or areas that are wild or scenic;*
7. *a range of natural character from pristine to modified; and*
8. *experiential attributes, including the sounds and smell of the sea; and their context or setting.*

55. It is generally accepted that such matters can be loosely translated to consider natural character in terrestrial locations. Section 9.21 of *Te Tangi a te Manu* goes on to explore how to assess natural characteristics and qualities, broadly grouping the above matters into two categories: the physical natural elements and processes (both biotic and abiotic), and how such elements and processes are perceived and experienced.

56. Importantly, the consideration of natural character includes developing an understanding of the natural processes occurring in that environment, including how a landscape might be changing or evolving – with or without human interventions. In this regard, it is important to not overlook factors that might present as an area being inherently natural but which are in fact heavily influenced by human activity. I have observed efforts to protect the current state of specifically valued areas or landscapes only for such areas to respond to such protection by transitioning to a new state[20]. Ultimately, landscape is dynamic and its current state may be a response to a certain set

[20] I worked recently on a new wastewater plant proposal in Tongariro National Park (a World Heritage Area), that needed to replace a failing plant below the Chateau. Our intent was to completely remove the old plant and allow the landscape to regenerate back to its original state, but the soil had become nutrient heavy, and so actually removing it would have resulted in a landscape developing so-called naturally, but not to what it originally was or what surrounded it.

of conditions or activities that, if altered, will result in very different outcomes and characters developing.

57. Therefore, in my opinion, the consideration of the physical natural processes associated with natural character must be on how the landscape would inherently change, rather than how it presents in its current state based on the current activity that takes place across it. In my opinion, for an area to display high natural character, the processes which keep it in that state must also be natural[21].

58. Additionally, such perceptions and experiences need to be contextual. The significance of an area's natural character is influenced by its setting and context, its relative uniqueness, and the way in which it might be experienced. Accepting that there is no upper limit to how widespread natural character might be,[22] this does not mean areas identified as having high or outstanding natural character are simply because they are the most identifiable or the largest visible.

59. Finally, an assessment of the *effects* on natural character needs to also reference the above considerations, as they may result in positive enhancement of natural processes even if the outcome is significant land use change. As identified, maintaining the status quo of a landscape does not necessarily align with the continuation of existing processes or activities which may actually be resulting in adverse environmental or ecological outcomes. Intervention with such processes that inherently prevent natural progression, particularly of indigenous flora and fauna, should, in my opinion, be considered a positive outcome even if this results in a change to the current identified natural characteristics of a place.

Landowner rights vs community outcomes

60. Throughout many of the projects I have worked on there has been an inherent tension between the activities wanting to be undertaken by a landowner (or developer on the land), and the desire for the community for the land to be retired or protected from all activity. Such tension goes to the heart of the RMA, environmental law, and property rights, and is an example of the different ways people interpret and connect with landscape.

[21] Pest animal and plant control, in my opinion, is an intervention that focusses on retaining natural processes as much as possible. Grazing land for production purposes is not, in my opinion, a natural process.
[22] Te Tangi a te Manu, section 9.31 page 215.

61. In a rural environment, such tensions can be more prevalent. Rural landowners have an investment in their land and require a productive income from it. There are, of course, many regulations and controls – which continue to be reviewed – that might place restrictions on the use of certain areas (such as riparian zones) or certain activities. However, often, opponents to certain proposals wish to seek not only the halting of the proposal, but also additional outcomes that are perceived to be of wider benefit to the community (but not necessarily the landowner) – usually the promotion of natural regeneration and enhancement.

62. Taking this concept to its extreme conclusion is the consideration of withdrawing all production activities in rural landscapes across the entire country, allowing them to revert to their pre-clearance natural state. Clearly, this is not a plausible concept – we need production activities to sustain human life and a functioning economy. Indeed, there is no current obligation for rural land owners to do anything more than what is regulated, with such regulations considered in terms of how best to balance production and private property rights with natural values. In my opinion, the argument that a proposal should not go ahead because the proposed site would be better converted to the restoration of natural values is not a generically valid request.

63. Rather, my approach from a landscape perspective is to understand the current activities taking place and identify whether these are consistent with the legislation and policy that governs such activities. It is then to assess the proposal within this context and consider whether the outcomes "point the needle in a better direction" – in other words, does the proposal result the reduction of the existing, permitted adverse effects on desirable landscape values or does it extend or exacerbate them? The baseline of effects must be drawn at the existing permitted activity being undertaken, and not the result of an arbitrary desire to remove such activities.

Factors that influence the perception of wind farms in a landscape

64. Throughout my experience of assessing wind farms, and particularly observing those that are operational, I have developed a range of factors that I have observed can influence how the wind farm is perceived within a landscape. This includes developing an understanding of how such factors, and the combination of certain factors, might result in a wind farm being more or less visually prominent, and in this regard how it might be perceived to be

more or less appropriate in any particular landscape (or for any particular viewpoint within that landscape).

65. I have provided the list of factors in **Appendix Two**, and note that it is not exhaustive – there may be other particular curiosities or features of a proposal that have a particular impact. However, in my experience, the list has provided me with a solid set of factors that help understand and describe how a proposal will likely interact and/or integrate with its proposed location.

EXISTING ENVIRONMENT

Landscape context and perspectives

66. I acknowledge and understand the significance of the Southland landscape, including the site and immediate surrounds, to Ngāi Tahu ki Murihiku. I have reviewed the CIA and have an understanding of the historical events and activities that are part of their long association with the Murihiku Region and which attribute value to it. Such values are experienced by tāngata whenua at both a broad scale (Te Taurapa o te Waka) and at the site level (with the acknowledgement of areas of identified and as yet undiscovered wāhi tapu).

67. Likewise, I have read various comments made by members of the community through the previous process and through media releases, including their responses to the potential landscape and visual amenity impacts as they perceive them. In addition, I have read the evidence of Anne Steven (from the previous COVID-19 Recovery (Fast-track Consenting) Act 2020 process).

68. As outlined, I have undertaken an extensive site and locality visit in order to inform my assessment. I have also reviewed the evidence of Mr Coombs relating to the description of the Existing Environment and broadly endorse his physical and values-based descriptions. In the interests of keeping my evidence concise, I do not repeat any of these descriptions here, however I would like to reinforce and enhance some areas that have particular relevance to my assessment.

69. All of these materials and resources helped me build up an understanding of the landscape context.

Land use and features

70. Isthmus have prepared a simple map, the *Slopedown / Mokoreta-Pukemimihau Landform Diagram*, which is useful at establishing a common

understanding of the location of the key features of the landform on which the Project is located.

71. At the broad level, the Project site is part of a *cuesta* landform, one of a series in the Southland Syncline. A cuesta has two key parts, the *dipslope* – a gently inclined landform that has been elevated through tectonic plate movement; and a *scarp* – a steep cutaway slope formed as the top of the dipslope is pushed upwards. The dipslope of this landform has a generally north-westerly aspect, and like many cuesta the scarp is defined by a sharp ridgeline. The scarp and the majority of the ridgeline are located outside of the Project site.

72. Towards the southwest of the dipslope, the landform flattens out somewhat to a plateau covering an area of more than 600ha, and typically ranging in elevation from 520 – 630m above sea level. The portion of the plateau within the Wind Farm Site is approximately 530ha in area and is covered with a mix of exotic grassland and low stature indigenous vegetation, and also contains a number of fen and bog wetlands (in various condition) as identified and mapped by the Project ecologists.

73. Northeast of the plateau is a steep-sided gully that contains Southern rātā-Kamahi forest.

74. The *Landform Diagram* also highlights some other notable landform peaks and features.

Southland Regional Landscape Assessment (1997)

75. Mr Coombs refers to the Southland Regional Landscape Assessment (**SRLA**) prepared by Boffa Miskell in 1997[23]. I have also reviewed this document.

76. Of particular relevance are the following comments prepared by the author in regard to the wider landscape around the proposal site[24] (my emphasis added):

> *Some balances must be found, whereby the most valued natural characteristics of these broad landscapes are protected* ***whilst the viability of farming and other enterprises that underpin many of***

[23] https://www.southlanddc.govt.nz/assets/Planning-Resource-Consent/Reference-documents/Boffa-Miskell-Southland-Regional-Landscape-Assessment-1997.pdf
[24] Ibid, S7 page 8

the characteristics of the land cover is maintained. *For example, unreasonable constraints on agricultural activities in the high country may prove to be highly counterproductive for landscape protection if all landowner support is lost.*

77. This echoes my earlier key considerations about the tensions between landscape protection and enhancement, versus the need to farm and use land resourcefully and efficiently. The direction from this study is towards protecting the *most valued characteristics*, not the broad landscapes.

Southland/Murihiku Regional Landscape Assessment (2019)

78. Mr Coombs also refers to the Southland/Murihiku Regional Landscape Assessment (**SMRLA**) prepared by Boffa Miskell in 2019. It is my understanding that this report was commissioned to assist with development of landscape policies within the collection of Councils across the Southland area, but that it has not been formalised or formally adopted by Southland District Council.

79. Section 5 (page 160) of the SMRLA addresses the specific values of the Slopedown / Mokoreta – Pukemimihau landscape feature and *promotes* it as outstanding. However, similar to Mr Coombs, I have some concerns about the methodology used to reach the conclusions, or more specifically, the mapped area identified in the SMRLA report.

80. The SMRLA is relatively light on detail with respect to the methodology by which it has been undertaken. However, section 3 (page 3) identifies that "*this landscape study is a review of this existing information, while assessing all of the region's landscapes within one comprehensive, up-to-date study*"[25]. Whilst it identifies that aerial and ground-based site visits were undertaken, it does not detail to what extent, nor whether it included any detailed, on-site investigations. My own experience from undertaking broad level, regional studies is that it is simply impossible to "ground-truth" observations, and that undertaking site visits on private land is typically unviable.

81. The relevance of such methodology plays out in the detail of any mapping that is undertaken. Usually the detail around mapping, and particularly where the line should be drawn, becomes subject to discussion and assessment

[25] The existing information referred to includes a 1993 Landscape And Ecology Study, a 2007 Coastal Study, a 2006 Landscape Capacity Study and a 2011 Scenic Zones Assessment – all undertaken by the same firm.

through public submission and discussion, a process which has not been undertaken in regard to this report.

82. Mapping is a challenging exercise that requires the understanding of the core values of the feature that contribute to it being outstanding, and then determining what physical attributes on the ground contribute towards those values.

83. In the case of the promoted 'Slopedown/Mokoreta – Pukemimihau ONF', the considerations discussed in the SMRLA primarily point to the geological features associated with the Southland Syncline (particularly the prominent ridgelines and valleys), together with a variety of native vegetation characteristics. The report identifies that the promoted ONF has "*primarily been mapped according to the extent of native vegetation*", noting this includes where such vegetation "*extends onto the plateau top where existing vegetation* ***predominantly remains intact***". It also notes the exclusion of exotic plantation forestry from the promoted ONF (my emphasis added).

84. Notwithstanding my comments earlier regarding confirmation bias, I have difficulty translating these values and mapping processes to what has actually been mapped within the report. This is based on my own observations having had the benefit (unlike the authors of the SMRLA report) to access the site, the comments provided by the project ecologists,[26] and what is visibly evident in aerial imagery.

85. The exclusion of pine forestry, and also evident from the mapping, the exclusion of pastoral land, demonstrates that the focus of the promoted ONF mapping is on indigenous forest values, with the exclusion of parts of the landscape used for production.

86. I find this interesting, as in the first instance I would consider the geological values of the feature to be the primary driver for mapping – the defined ridgeline, the steep sweep of the scarp, and its repeating nature as a lineal series across the landscape. These features are highly legible and notably permanent, not subject to changes in landuse or landcover.

[26] In particular, I refer to the Terrestrial and Wetland Ecology Assessment, paragraphs 85 to 87.

Figure 1: Image from Helicopter GoPro noting the difference in vegetation quality on the scarp feature (to the right) and the farmed plateau (which contains poorer quality vegetation, tracks and multiple clearings).

87. Irrespective of this, there is, in my opinion, a marked difference between the quality of native vegetation on protected (non-privately owned) land, and that which is privately owned and grazed – the latter distinctly showing degradation in the cover, not just through ongoing grazing regimes but also extensive tracking and clearings (refer Figure 1).

88. My opinion is that the mapped area in the SMRLA report includes large swathes of the landscape where the native vegetation is not *intact.*[27]

89. My observations from traversing the site by helicopter and from my drive around the Project site using the local roads was that the most outstanding values are derived from the scarp face that weaves around the southern side of the Project site. The scarp itself has highly legible geological forms, instantly recognisable to me as part of the cuesta syncline forms. But its form is further reinforced by the apparent quality of the forest canopy, and its

[27] The Oxford English Dictionary defines *intact* as "*not damaged or impaired in any way; complete*". Collins has a similar definition: "*not altered, broken, or impaired; remaining uninjured, sound, or whole; untouched, unblemished*".

contrast to the surrounding productive landscapes both above and below the scarp face.

90. Translating this to the SMRLA maps for the promoted ONF that the report identifies, I consider the mapped area of the promoted ONF is too broad and would be better confined to the scarp face where the combined geological and vegetation values are more pronounced. This is the outstanding component of the feature (ie the cuesta landform), and it is this that is experienced by most people at ground level.

Broad landscape context

91. I find it useful to always take a step back from the site and immediate locality of a proposal such as this and get a sense of the broader scale context. As I identified, I spent a day exploring and observing the wider Southland landscape (which I have visited many times previously) to get a sense of the overall characteristics and patterns. In my opinion, it tends to be these broader level experiences that most people connect with and remember (the way in which Marlborough is known for its grapes, Hawke's Bay for its apples, Fiordland for its natural landscape).

92. My key takeaway was the level of organisation within the landscape, particularly the distinct clarity between farming operations on flatter sites, and the presence of native vegetation on the range of steep scarps across it. There was a sense of order to the farms, a feeling that this was a landscape that was efficiently used and overwhelmingly productive. Having seen attempts to dairy farm the naturally dry MacKenzie Basin or pastoral farm steep erosion-prone country in Hawke's Bay, I found the use of the landscape to be well considered with an apparent high degree of kaitiakitanga (to borrow such an eloquent and deep-rooted term from te reo rangatira).

93. Notably, I experienced this in the retention of the vegetated slopes – clearly too steep to be of productive use, and best preserved for their existing natural values. But such character also came across in the arrangement of vegetation across pastoral land, often protected around waterways. There is, in my opinion, a sense of harmony between the productive rural landscape and those natural features within it that have been retained.

94. Within this was a definitive understanding of the broader area being a productive, working landscape. This was not only evident in the presence of

land-based farming and forestry, but also the associated industries that go with them. The Fonterra processing plant at Edendale is highly visible and unmistakable in its identity, its connection to the surrounding pastoral activities. Equally is the presence of the Agrifeed and Wood Processing industrial buildings northeast of Invercargill, clearly located and connected to land use.

95. The energy landscape is prevalent also. Aside from the notable presence of wind turbines at Kaiwera Downs, White Hill and Flat Hill, scattered across the landscape are a range of transmission facilities. Some of these of course connect to the aluminium smelter at Bluff, widely known as one of the biggest electricity consumers in the country.

96. The existing wind farms in particular reinforce a connection to the more blustery aspects of the landscape, and the high presence of shelterbelts across the plains. Southland is evidently a windy place – indeed the wind-blown trees across the southern coastline are part of the identity of this area.

97. The proposed site sits at the edge of this landscape as it transitions towards the 'Catlins', but in my opinion is strongly connected to it. Although the topography begins to ruffle, reflecting the more rugged, wild nature of the Catlins further to the southeast, the land use retains the sense of organisation and order. The farmland to the south of the scarp, alongside the Mokoreta River and adjacent to Wyndham Station Road and Slopedown Road exhibits a similar characteristic of having been cared for, the steep scarp feature adjacent to the site retained for natural values, and the small pocket valleys across the northern slopes all vegetated with riparian plantings. What can be farmed well, is, and what cannot be has been retained in a near natural state.

98. The exception is the presence of exotic plantation forestry, which is more extensive in the locality of the site than across the plains. But this too reinforces notions of production and use.

99. In my opinion it is someway southeast of the site before the unique characteristics of the Catlins become evident. These are driven by much more dramatic folds or striations in the topography, the greater presence of natural vegetation (notably through the Catlins Forest Park), and the greater sense of connection with a wild coastline. Whilst the proposed site is the start

of a transition towards this squally landscape, in my opinion it firmly retains the sense of productive character from the plains.

100. In this respect, I have no hesitation in describing the site and locality as part of a productive, working landscape. This is not to say it does not exhibit natural characteristics – as identified, the scarp is a feature (worthy in my opinion of being elevated to a status of outstanding) that exudes both natural geological and vegetation values. But more broadly, including the areas of the Jedburgh Plateau and northern dipslope upon which the Southland Wind Farm is proposed, I consider the overwhelming character is derived from human activity and use.

Visual catchment

101. Mr Coombs has not specifically provided a description of the visual catchment of the proposal site (including of the proposal – that is, where turbines might be visible from), other than the detailed work included in his Appendix D (Dwelling Inventory) and as depicted in the set of visualisations and photographs. I often find it useful to provide a brief outline of potential views to provide a general sense of the extent to which landscape effects might be experienced.

102. With this in mind, I was surprised by the generally restricted nature of the potential viewing catchment. Typically, wind farms are located on bold, high landforms that are visible from far-reaching locations, but this site is less visually exposed than many others I have seen. There are locations where it might be visible from long distances away (such as Bluff), but in terms of effects I find the visual influence area to be relatively confined.

103. Notwithstanding this, the most prominent and broader views towards the site are from the west and northwest. These are captured in Mr Coombs' viewpoints 1-5, 11, 12, 13 and context photographs 14 and 15. In many of these views, the site appears as a broad sequence of hills that forms the background, but with the distinctly legible roll of the scarp (Figure 9, Viewpoint 1 also illustrates this feature as part of the series of similar forms, repeating the pattern from the north). Pastoral farmland can be seen in such views extending up the northern dipslopes, the dark forms of native vegetation further defining the scarp ridgeline.

104. From the south, views of the proposal are much more restricted, generally focussed on small defined portions of the broader landscape. Mr Coombs'

viewpoints 6-10 all narrow to particular compositions, but all equally display the strong contrast between pastoral farming across the valley floor and native vegetation extending up the steep slopes.

105. What is not evident in the imagery, but visible on the ground, is the extent of farmland to the south of the viewer – extending up the flatter dipslope of the next cuesta sequence. Referencing my earlier comments about how people tend to broadly experience the landscape and its overwhelming patterns, my observations are that the vegetation pattern only extends to the skyline, and that it is a different landscape beyond.

106. To the north and east, the site essentially vanishes from view, screened by intervening landforms, including the cuesta containing the Kaiwera Downs wind farm. Some limited visibility may be possible from some locations, including some residential dwellings.

107. In this regard, the visual catchment can be broadly considered, in my opinion, as falling within two key areas. The west (and northwest), end-on to the proposal and where the broader sequence of landforms is visible, and locations to the south where the landforms are seen as discrete views.

POLICY CONTEXT

108. Mr Coombs provides a detailed overview of the relevant policies and directions. I have reviewed these myself and will adopt his evidence in this regard. I note that I have already provided a review of the SRLA and the SMRLA.

109. None of the provisions within the District Plans are surprising or particularly out of the ordinary from other District Plans I have worked with. The relevant landscape provisions relate to the consideration of rural amenity and rural character. I do note policy GRUZ-P1 of the SDP that recognises the *benefits of using rural land in providing for growth and development*, and the general introduction to the GRUZ which seeks to *provide for land uses such as renewable energy generation*.

ASSESSMENT OF LANDSCAPE EFFECTS

Introduction

110. As I have stated, I have undertaken a primary assessment of the proposal and its potential effects on landscape. However, I am also conscious that Mr

Coombs has provided extensive, detailed evidence across all aspects of the proposal and I do not wish to unnecessarily repeat what he has outlined.

111. In this regard, I take the position that, unless I outline in the following section a contrary or advanced opinion to Mr Coombs, that I accept and endorse his evidence. To this end, my evidence predominantly focuses on the broader strategic appropriateness of the proposal, particularly in regard to the key considerations I laid out earlier.

112. It is important for me to note that although I may not specifically cover a detailed effect or outcome (including the detailed assessment of effects as experienced from private dwellings), this does not mean that I have not considered such effects in my overall weightings and conclusions. I am, for example, well familiar with the potential effects of the night lighting, engineering slopes on roads, turbine colour, placement of the meterological masts, etc, and have considered these.

Effects on rural character

113. I have stated my conclusion that the proposed site is a productive, working, rural landscape that includes some natural features. Those natural features are predominantly experienced through the legibility of the landform, particularly the scarp (and the distinctive skyline it creates from many viewpoints), and the pattern of native vegetation on both the scarp and within river valleys. The remainder of the landscape, including the plateau, is utilised for productive activities like the broader plains to the west. I have outlined how I consider the site maintains a stronger connection to these plains (including visibly) than it does to the more wild Catlins landscape to the southeast.

114. I have outlined my views on the connection between wind farms and the rural landscape. Wind turbines have a functional need to be located rurally if we are to met the predicted energy demands (an important consideration under SDP policy), and they represent a productive use of the landscape. I have also outlined that the broader characteristics of the landscape include energy generation and transmission, and that wind is a prevalent and dominating feature.

115. I have observed wind farms located within cities (such as Copenhagen), close to cities (such as Makara, near Wellington), and those that are remote (such as in the Highlands of Scotland). In my opinion, the proposals that are

best understood are located where there is clear energy demand and where there is evident production activity. They appear to connect in the sense of providing to the community, even if they are essentially plugged into a national grid. In my opinion, there is a clear connection in this landscape – one that is focussed on production, not just in terms of land-based activities, but through the highly visible presence of processing plants for milk, timber and animal feed, in proximity with the Tiwai Aluminium smelter – and alongside the urban centres of Invercargill, Gore and various smaller settlements.

116. In this regard, I reach the conclusion that this proposal, in this landscape context, fundamentally aligns with the concept of rural character. This association is further endorsed by the descriptions and policies regarding rural character in the SDP which seek to enable renewable energy and production activities within the rural environment. It is connected to and enables those activities within the landscape that give it its unique characteristics.

Effects on natural character

117. Earlier I provided an overview of the interpretation of natural character and how I consider effects on such character need to be assessed. I have also loosely described the degraded nature of the vegetation on the plateau, including those areas mapped as wetlands (and so relevant to s6(a) of the RMA), concluding that it is not *intact*, not pristine.

118. I have reviewed the evidence of Mr Goldwater, and I have discussed with him and his colleagues the nature of the bog and fen wetland features across the plateau, and the broader range of vegetation including its significance.

119. Mr Goldwater's evidence is, unsurprisingly, prepared from a scientific basis. His focus is on areas, numbers and direct species of impact, as it needs to be. However, natural character focuses on such effects not so much from a quantitative perspective, but rather how such loss or change manifests in terms of experiential value, naturalness and character.

120. The key points I take away from the existing quality of vegetation across the plateau are the long term impacts that have resulted from decades of fires, clearance, vehicle access, stock access, and pest animal browsing (particularly feral pigs and deer). Mr Goldwater describes the impacts of such activities and pests as resulting in diminished habitat, compacted soils,

inhibition of seed growth and poor biodiversity (he notes survival of unpalatable plants over a more natural diversity).

121. Mr Goldwater, and the various reports he refers to, also discusses the inherent significance of the rātā-kāmahi forest, despite its degradation (and not being present on the plateau), and the presence of native cedar forests mostly outside the wind farm site boundary.

122. I have discussed the dynamic nature of landscapes, and in particular how true natural character can be inhibited by human activity. It is clear from Mr Goldwater's evidence that activities associated with human intervention across the site, and particularly the plateau, are significantly inhibiting regeneration capability.

123. I evidenced this for myself. On my site visit to the plateau I witnessed the movement of stock, the presence of vehicle tracks, and the presence of pest animal bones (feral pigs and hedgehog). The almost toparised clipping of the vegetation at just below waist height was clearly the result of grazing, evident in the chewed and broken ends to plant branches.

124. To me, this was not a natural landscape. It was one attempting to regrow despite all being thrown at it, but fundamentally controlled by human activity. Within it I could make out more significant areas of more resilient vegetation, these captured in the mapping by Mr Goldwater (and replicated in Mr Coombs' evidence), however I could easily see the degradation occurring to the wetlands as a result of stock and pest-animal grazing.

125. Beyond this farmed land, noting that this land has been farmed for more than 100 years, the bolder taller vegetation within the Department of Conservation estate was more evident. I understand that this too is compromised by pest weeds and animals, but to the general observer its contrast to the struggling scrub was unmistakable.

126. My understanding is that part of the proposal of the wind farm is to undertake a pest animal control programme across a large area of the plateau for the life of the wind farm. I have no doubt that such change will bring about fundamental change to the vegetation cover, and to the character of this plateau.

127. Mr Goldwater has informed me it will take many decades for the wetlands to regenerate (I know myself that rātā growth is slow, but with centuries-long

lifespans), but that such generation would be a natural process, and the wetlands would ultimately dry up and revert to forest. He identifies in his evidence the variety of bird species, all of which are seed dispersal experts, and the presence of a seed source across the wider landscape.

128. On this basis, in assessing effects on natural character I cannot be drawn into discussions about the protection of the current state. Rather, the prospect of removing or greatly restricting those human induced activities which are inhibiting natural processes to take place is far more appealing. With the proposed mitigation measures in place, the proposal points the needle in a direction of significant and meaningful rehabilitation.

129. The "cost" of achieving this more natural outcome is in the loss of some habitat (131ha in total, less than 2% of the total site area, 57ha of which is native and approximately 2ha is bog or fen wetland[28]). But, in the comparison of the lifecycle of the wind farm (in the region of 30-60 years, depending on renewals, and which is almost completely removable) against the longer term rehabilitation (several hundred years), I consider such cost to be relatively low. In time, the wind farm will be removed (when other energy sources inevitably become available and more cost-effective), and the rehabilitating land will be able to naturally recover the whole site, and from a much better starting point due to all of the pest control efforts proposed.

130. My conclusion on the effects to natural character are that they will be overwhelmingly positive. Without doubt, what features and attributes that currently exist across the plateau will evolve, the landscape will change. But such change will be driven by more natural, indigenous processes, a landscape regaining its inherent natural character, rather than one defined by the activities of people.

Perception

131. In my overview of key considerations, I pointed towards research that identified the majority of people favour renewable energy generation over other sources. Nevertheless, having a general positive disposition towards an activity is often fine until you discover it is going to be undertaken on your doorstep. Even then, I have worked on many projects where potential perceptual effects on dwellings have the potential to be high, but where such

[28] Terrestrial and Wetland Ecology Assessment Table 4a, Paragraph 158.

effects are accepted by the neighbour because of their inherent support of the activity proposed.

132. In this regard, I deviate somewhat from Mr Coombs' evidence where he identifies whether potential visual effects will be adverse, neutral or positive. In my opinion, adversity can ultimately only be determined by the person affected. In my opinion, the role of the landscape architect is only to determine the nature and severity of the potential change, so that people can make their own judgement; Mr Coombs likewise acknowledges this, and I note that he has gone further to undertake a proxy-type assessment to assist the Panel and to make sense of the proposed conditions of consent that require Contact to offer mitigation to certain landowners.

133. As I have alluded to with the inclusion of my list of factors in **Appendix 2**, understanding how the arrangement of the landscape and turbines can impact perception results in a better judgement of how effects might be generated. I note Mr Coombs briefly covers similar factors in his evidence.

134. At first glance, a 55 turbine, large-format wind farm has the potential to be dominating. But in my opinion, in this instance there is a wide culmination of factors that results in this not being the case.

135. I start firstly with the visual catchment I described earlier – the broadest views of the proposal site are experienced from the west. Mr Coombs describes the effects from these views (Viewpoints 1-5, 11, 12, 13, and context photographs 14 and 15) as mostly between *moderate-high* and *low* (as mentioned, I do not endorse his use of the descriptor "*adverse*").[29]

136. In more distant viewpoints where the form of the scarp is more visible (such as Viewpoints 2 & 3), there is a clear, tangible set back of turbines from this feature. I consider that the composition of the turbines is respectful to the landform, refraining from visually detracting from the prominent form. Even from closer locations, such as Viewpoint 4, where a large portion of the ridgeline is still visible, the turbines are visually set back from the scarp feature.

137. This perception of setback also appears in closer viewpoints to the west (Viewpoints 12 & 13), where it is apparent from the visualisations that they are recessed in the background of the ridgeline. I note this is also reflected in

[29] I have excluded viewpoint 5 from this "west" catchment as location in close proximity to this viewpoint display characteristics more closely associated with those to the south.

Mr Coombs' assessment of residential properties in this area, such as properties 5, 11, 21 and 25 which are assessed as having *moderate-low* to *low* visual effects. I concur with this assessment.

138. Directly to the west, the cluster of properties east of Wyndham (such as 23, 27, 39, 40, 42, 46 & 51) have slightly more open views, and as such Mr Coombs rightly assesses these with slightly more elevated effects – but all (with the exception of 23) reaching a maximum rating of *moderate*. I also consider property 23 is of the same rating, not *moderate-high* as Mr Coombs has assessed, as the views towards the proposal are compromised by foreground vegetation and farm sheds.

139. In this respect, I reach the conclusion that perceptually the wind farm will be somewhat insignificant on the landscape when viewed from the west. It will, undoubtedly, be visible, but in my opinion it does not fundamentally alter the character or underlying sense of what this landscape is.

140. From Viewpoint 5, which is more to the southwest than the other viewpoints and portraying the view of a traveller heading east along Wyndham-Mokoreta Road, it is evident that the experience of the scarp is changing. Rather than seeing a long linear skyline (as per the aforementioned viewpoints), the landform begins to break up, and the scarp feature becomes more prominent. However, it is very clear that the turbines sit well back from the ridgeline, notable because many of them are only partially visible.

141. Across this part of the landscape the foreground pastoral landscape is extensive, and with many dwellings located on higher knolls such views across it will be relatively open and in most directions. In this context, although the wind farm sits somewhat high behind the scarp, it is relegated to the background. This is further exacerbated by the variety of activity and landuse that competes for viewer attention across the ground level.

142. Nevertheless, I concur with the rationale of Mr Coombs to identify the clustering of properties in this area (such as 1, 2, 3, 7, 8, 10, 13, 14 & 16) as being in the *moderate-high* rating level, mostly due to their largely elevated positions and broad open views. Whilst I consider such a rating to be somewhat conservative, it reflects that such properties will experience a change to the landscape they currently experience. Other properties rightly score lower ratings due to their specific orientation and intervening screening.

143. As I have identified, from the south, the view is somewhat different. The nature of the surrounding landforms hones in the perspective, and in all situations only a small cluster of turbines is ever visible at any one time.

144. As the road continues between the scarp to the north and the various elevated landforms to the south (Viewpoints 6 & 7), the landscape character becomes more divided – pastoral in the foreground to middleground, and native vegetation up the steep background scarp. This creates a crisp, legible skyline that is clearly evident in Mr Coombs' images. The key question, therefore, is how the visible turbines might change the appreciation of such a view and how it is perceived.

145. In my assessment I am drawn to several things that significantly diminish the dominance of the turbines and relegate them to a deeper backdrop than the scarp feature. I outline these as follows:

    (a) The proportions of the turbines visible are clearly cropped by the skyline feature (particularly evident in Viewpoint 7, the turbines on the left of the image). Although in some instances this would result in a sweeping effect, the overall cluster makes it immediately clear to the viewer that the turbines are set back on a landform behind the skyline, one that is sloping away from the viewer. Although they may pierce the skyline, they are subservient to the ridgeline and not on it. In my experience, a much more dominant turbine would be located on the front face, rather than partially obscured behind.

    (b) The number and scale of turbines is very small in comparison to the extent of skyline visible. Even in Viewpoint 9 where there is a larger number of turbines visible, there remains a strong legibility and coherence of the skyline resulting from its dark appearance in comparison to the sky beyond. In this instance I do not find that the turbines interrupt the skyline; it remains bold and crisp, reinforced by the vertical scale and boldness of the scarp that as a single bold form, in my opinion, dwarfs the individual turbines.

    (c) There remains, in my opinion, a strong connection between the turbines and the boldness of the pastoral, working landscape. Although separated by the steep scarp, as I alluded to earlier, the wider patterns of the landscape can be observed by people who move through it. These patterns reinforce that the forest on the scarp is not part of a

more extensive vegetated forest that sprawls unseen to the north – it is known to exist on the scarp feature of the cuesta. To me, the turbines are in a different landscape, one that cannot be seen beyond the main visible realm.

(d) The turbines are not uniform in relative height, and as such it is evident they respond to the underlying topography of the site.

(e) The turbines avoid the bolder, more prominent landforms, giving them space to remain legible.

(f) Each turbine has visible space and separation, such that its more graceful movements are mostly uninterrupted by clutter.

(g) And, finally, I am of the opinion that the proposal reinforces the feeling of remoteness in this part of the landscape. The turbines stand alone, seen independent of tracks and connections. In my opinion they do not display industrial-like characteristics, but rather connect to more natural forms and sculptural values.

146. With these factors in mind, I reach the conclusion that there are somewhat limited effects on perceptual landscape values when viewed from the south. Certainly from the south the proposal will be visible, but I do not consider it will overly dominate the bold landforms and crisp skyline – the turbines will remain subservient to it, set behind and at an appreciably smaller scale.

147. I note that this is also reflected in the residential analysis undertaken by Mr Coombs, with properties to the south of the proposal (such as 4, 9, 15, 18, 19, 20, 31, 38, 41, 45, 50, 54, 69, 72 & 81) all scoring in the lower rankings of the rating scale (I note property 31 is slightly elevated due to a slightly closer proximity and elevated location). I concur with these ratings that have been provided.

148. As identified, there will be limited views of the proposal from the east and north. I concur with Mr Coombs that perceptual visual effects from such locations will be, at most, *low*. I also agree with his ratings of properties in this area (such as 24, 29, 30 & 32) which all score *low*.

149. Overall, I consider that the proposal will have somewhat limited views on how people perceive and understand the landscape. It will be visible, and it will sit above the scarp feature. However, I consider that it legibly sits behind and subservient to the ridgeline, in an unseen background landscape. The turbine

layout prevents excessive clustering and blade crossover, and the turbines appear reduced in scale in comparison to the bold landforms.

150. Such effects are similar to the consented Puketoi wind farm – which is to be located on a similar cuesta type landform in Tararua.[30] In this instance, the dipslope had a westerly orientation, the scarp facing east, with a strongly defined ridgeline clearly visible from various rural dwellings and the rural settlement of Pongaroa. Unlike in the present case, the cuesta is an identified Outstanding Natural Landscape in the Tararua District Plan. The turbines are to be located in a generally linear pattern along the top of the dipslope, but set back from the ridgeline, and from most viewpoints to the east only a small cluster will be visible at any one time. The vegetation on the scarp would remain intact.

Effects on the scarp

151. As I have identified, I have reservations about the maps that have been prepared by Boffa Miskell in the SMRLA, in that they do not accurately capture where the outstanding values of this cuesta landform are derived. For me, these values are the result of the combination of geological legibility and native vegetation on the scarp, and they do not extend across vegetation on the plateau that is modified and not intact.

152. I also reinforce that the SMRLA has not been through any public process, and so has not had the chance to be refined in the way such studies normally would be.

153. With these points in mind, I consider that I have already covered the potential effects on the scarp feature as part of the discussion on the promoted ONF. My view is that the wind turbines are set back from the scarp edge (this can be clearly seen in the video[31], and as I have described above) and visible turbines are subservient to the landform. In my opinion, the turbines do not alter the fundamental values of the landscape, regardless of whether the scarp is identified as an ONF – that is they do not fundamentally alter the legibility of the cuesta landform, nor do they physically disturb or alter the vegetation values. Indeed, I consider that even its impact on the identification of the feature is inconsequential in that even if the SWF were operational, the

[30] https://www.mercury.co.nz/about-us/renewable-energy/wind-generation/puketoi-wind-farm
[31] Recognising that the video is not a visualisation, but it does accurately demonstrate the positioning of turbines relative to the scarp.

scarp feature and the values ascribed to it would likely be identified through appropriate landscape assessment.

154. In my opinion, I consider the effects of the proposal on the values and definition of the scarp to be acceptable, irrespective of whether it is deemed an ONF.

CONCLUSIONS

155. In conclusion, in my opinion the proposed Southland Wind Farm proposal represents a considered and contextually appropriate response to New Zealand's growing renewable energy needs.

156. The site is situated within a productive rural landscape that already accommodates energy infrastructure and is known to be windy. While the proposal will be visible from various vantage points, in my opinion the layout of the turbines is set back from key landform features, notably the cuesta scarp, and will be subservient to it.

157. I consider that the proposal is consistent with the concept of rural character, and the specific rural characteristics of this landscape. It is located within a landscape that is strongly connected to the productive plains.

158. In my opinion, the proposal offers a significant opportunity to enhance natural character through for example pest exclusion and implementation of pest controls, enabling long-term ecological regeneration. The natural cost of enabling such improvement is in the development of a relatively small footprint of roads and turbine footings – all of which can be removed or remediated at end of life.

159. The beginning of my evidence set out where I consider a baseline of effects needs to sit in terms of the consideration of renewable energy nationally. Having now assessed this proposal alongside the many other projects I have either been involved in or have researched, I reach the conclusion that this proposal, on this site, is fundamentally good. It will have effects on landscape, and it will be perceived by some to be adverse. But in the context that the proposal is for a highly beneficial renewable energy activity, in my view the landscape, visual, and natural character effects of the proposal are acceptable, and lower than many other wind farm proposals I have studied.

Shannon Bray

APPENDIX 1 - SHANNON BRAY: ENERGY PROJECT EXPERIENCE

Professional Qualifications & Affiliations

- Bachelor Forestry Science (B.For.Sc), Canterbury University (1994)
- Bachelor Landscape Archiecture with Honours (B.L.A.(Hons)), Lincoln University (1996)
- Registered Fellow New Zealand Institute of Landscape Architects

Wind Farms

I have worked on behalf of wind farm developers, community groups and Councils. I have also provided advice to panels and have been a Commissioner.
The table below identifies projects involved with to varying degrees as follows:

- Assessment: Completed a Primary Landscape & Visual Effects Assessment and been involved in design decisions.
- Preliminary Assessment: Undertaken a high-level landscape and visual effects assessment (generally to inform preliminary design).
- Hearing/Witness: Appeared as an expert witness in a Hearing.
- Site Visit: Undertaken an accompanied site visit through the operational wind farm.
- Observation: Undertaken research and a specific visit to the locality of the operational wind farm.
- Technical Advice: Provided technical landscape and visual effects advice to the decision making panel.

Operational Projects:

Wind Farm	Location	Capacity	Size	Experience
Waipipi South Taranaki	Waverley South Taranaki	31 Turbines 133.3MW	Hub 95m Rotor ∅ 130m Tip 160m	Hearing Commissioner
Turitea Manawatū	Palmerston N Manawatū	60 Turbines 220MW	Hub 69m Rotor ∅ 112m Tip 125m	Assessment Bol Witness
Te Rere Hau Manawatū	Palmerston N Manawatū	97 Turbines 48.5MW 2-blades	Hub 30m Rotor ∅ 33m Tip 46.5m	Assessment Council Hearing
Mill Creek Wellington	Wellington	26 Turbines 59.8MW	Hub 80mm Rotor ∅ 82m Tip 121m	Assessment
Tararua 1&2 Manawatū	Ashhurst Manawatū	103 Turbines 67.9MW	Hub 44m Rotor ∅ 52m Tip 70m	Site Visit Observation
Project West Wind Wellington	Wellington	62 Turbines 142.6MW	Hub 68m Rotor ∅ 82m Tip 109m	Site Visit Observation

Tararua 3 Manawatū	Ashhurst Manawatū	31 Turbines 93MW	Hub 65m Rotor ∅ 90m Tip 110m	Site Visit Observation
Flat Hill Southland	Bluff, Southland	8 Turbines 6.8MW	Hub 44m Rotor ∅ 52m Tip 70m	Observation
Hau Nui Wairarapa	Martinborough, Wairarapa	15 Turbines 8.65MW	Hub 46m Rotor ∅ 40m Tip 66m	Observation
Harapaki Hawke's Bay	Titiokoura Hawke's Bay	41 Turbines 176MW	Hub 85m Rotor ∅ 120m Tip 145m	Observation
Kaiwera Downs Southland	Gore Southland	10 Turbines 43MW	Hub 77m Rotor ∅ 136m Tip 145m	Observation
Te Āpiti Manawatū	Ashhurst Manawatū	55 Turbines 91MW	Hub 70m Rotor ∅ 72m Tip 106m	Observation
Te Uku Waikato	Raglan Waikato	28 Turbines 64.4MW	Hub 80m Rotor ∅ 101m Tip 130.5m	Observation

Other Projects

Waiuku, Waikato	Technical Advice
Huriwaka, Ruapehu	Assessment EnvCt Witness
Motorimu, Manawatū	Assessment Hearing
Waiatahora, Waikato	Assessment Hearing
Te Waka, Hawke's Bay	Assessment Hearing
Pahiatua, Tararua	Assessment
Mount Munro, Tararua	Assessment
Puketoi, Tararua	Assessment
Southland, Southland	Assessment
Hauāuru Mā Raki, Waikato	Preliminary Assessment
Santoft, Manawatū	Preliminary Assessment
Castle Hill, Wararapa	Site Visit Observation
Pouto Peninsula, Northland	Site Visit Observation
Te Rere Hau Repower, Manawatū	Site Visit Observation
Kaiwera Downs 2, Southland	Observation
Confidential	9 Active Assessments

APPENDIX 2 - FACTORS AFFECTING PERCEPTION OF WIND TURBINES

1. The following is a list of considerations. It is not a checklist and not all factors will apply in all situations. Equally, there may be a situation or context where one factor rises above all others, resulting in a higher level of perceptual effects.

Distance of viewer from turbines

2. The distance of the nearest turbine to the viewer is commonly regarded as the most significant factor in determining the prominence of a wind farm in the landscape.[32]

3. Wind turbines are getting larger, and as such the distance the of visual influence and prominence has been growing. 15-20 years ago, it was considered that the key area of dominance, where effects were likely to be most substantial, was within 1km of the wind farm. Today, in my opinion, that range is around 2-3km. Beyond this distance, in my experience turbines rarely lead to effects that are greater than moderate-high ("significant" in RMA terms).

4. The distances are not definitive, and that the viewing distance should be considered as a continuum rather than zoned. There is no 'magic line' that differentiates effects at 900m from those at 1100m, and it would be inappropriate to attempt to implement one[33]. Such effects must be determined on context. For these reasons, I have previously defended avoiding a methodology that adopts a blanket policy for setback from turbines[34].

5. Of particular reference is historical decisions on wind farm applications. In particular:

    a. Te Rere Hau Repowering Project which was granted consent through the Covid Fast Track process despite the presence of residential properties as close as 470m from the nearest turbine, noting that in this instance the construction of new large format turbines resulted in the removal of existing two-bladed turbines that were already visible from affected properties.

    b. Turitea Wind Farm where turbines nearly 2km away from residential properties were removed from the project by the Board of Inquiry for landscape reasons.

    c. Meridian Energy's Mt Cass Wind Farm where the decision to remove turbines was made on the basis of an assessment of effects on individual properties rather than blanket distances from turbines.

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[32] C85/2008, Para 109: *"We conclude the single most important factor in the dominance or effect on amenity of turbines is proximity."*
[33] Hudson, John, 2008. *Meridian Mill Creek Wind Farm, Assessment of Landscape and Visual Effects. Prepared for Wellington City Council by Hudson Associates Landscape Architects.* Para 1.13
[34] https://www.epa.govt.nz/assets/Uploads/Documents/Fast-track-consenting/Waiuku-Wind-Farm/RFIs/Expert-advice/WWF_LandscapeAdvice_SBray_24-08-09.pdf

6. Whilst proximity to turbines is an important factor, there are also other factors that can influence the potential dominance of turbines, as will be further outlined below.

Number of turbines visible

7. Often cumulative effects are considered as being the effect of one development being proposed in addition to existing (or consented), similar proposals in the same (or sometimes neighbouring) landscape. However, the true meaning of cumulative is simply "increasing or enlarging by successive addition"[35] and is therefore also an applicable term to describe repetitive structures in a view, such as wind turbines in a single wind farm proposal. The number of turbines visible in a view plays a crucial role in determining the prominence of a proposed wind farm in that view.

8. There is no case history that I am aware of to suggest how many turbines suggest a significant effect – of course this will depend on the extent and nature of the view (e.g. vegetation, landform or buildings may screen immediate foreground views)[36]. However, as a general rule, the greater the number of turbines visible, the greater the dominance of the wind farm as a whole entity[37]. But such a consideration must be related to how the turbines are laid out on the landform (i.e.: whether they respond to natural form or topography), the scale of the landform they are to be positioned on, and to what extent this might be visible.

Size of turbines

9. Size of turbines is remarkably difficult to understand – in simple terms they are just big. People don't have innate sense of how tall things are, they are just "bigger than us", and the lack of details on turbines (as opposed to windows on a building) make scale difficult to understand.

10. Experience of viewing turbines will help, although even though I have observed many operational wind farms I still find it remarkably difficult to accurately give a height.

11. Also, different sizes of turbines in the same landscape can also assist – although the perception tends to be less about the size and more about the relationship between each other. In my experience this is also very difficult to accurately assess because turbines are usually inherently placed in landscapes that have rolling topography – they will by default be located at different heights.

[35] The Free Dictionary, www.freedictionary.com/cumulative
[36] Te Tangi a te Manu, Side Note 169 (Page 154) does discuss a reference to 'Te Waka Wind Farm' [2007] NZEnvC Decision W24/07, paragraph 51–53 that discusses a situation where additional wind turbines may lead to "the straw that breaks a camel's back", but neither the guidance or the decision provide a determination of what the number would be in any given landscape.
[37] Isthmus Group Ltd, 2008: "*Waitahora Wind Farm Landscape and Visual Assessment for Contact Energy Ltd".* Table 6, Page 29.

12. Perspective also plays a part – especially where there is a lack of reference features. Smaller turbines up close have the potential to be significantly more dominant than large turbines set back into the landscape.

13. In my experience, the size of turbines is less relevant to perception than form. Turbines of different sizes that have similar proportions, the same number of blades and same colouring, tend to sit together as a family.

Blade cross-over

14. It is has been suggested that turbines that overlap have a greatest visual impact than those seen occupying their own space[38]. The cross-over of the blades creates a discordant effect that draws the eye away from what would otherwise be a gentle 'tumbling and rhythmic motion' between turbines that are provided visual separation. Turbines in close proximity to each other are potentially more likely to have greater visual effects.

Turbine layout

15. The layout of a wind farm on a site can have a significant effect on how the proposal responds to the character of the landscape.

16. Aesthetic coherence is a quality specifically described in the RMA as a factor contributing toward amenity value, and has to do with how people unconsciously analyse a scene in terms of its natural patterns or landscape units.

17. Turbines that are laid out in a pattern that is responsive to the landform tend to be more in accord with their setting, and as such can appear less dominant. Conversely, a turbine layout that conflicts with natural patterns in a landscape view (such as the regular, grid layout of the Te Rere Hau wind farm) can draw more attention toward the wind farm, therefore making it more prominent in the view.

Views of partial turbines

18. Generally speaking, elements of a landscape that are partially screened by foreground elements (such as vegetation, buildings or landform) are more likely to recede into the background (overlapping can be a reference for scale and distance), and as a result have lesser effects on visual amenity. It is therefore perhaps sensible to assume that it is more desirable to have a partial view of a turbine rather than have the view dominated by a whole turbine structure.

19. However, the rotational motion of the blades adds a dynamic motion that some viewers find unsettling if the hub or pivot of the motion cannot be identified – the effect being a "half-rotation", sometimes known as a windscreen-washer effect. This effect can be stronger on skylines that are

[38] W031/2007, Para 109

distinctly lineal, as the blade can have a discordant effect on the coherence of the ridgeline.

20. In the Project West Wind case, the Court acknowledged that the adversity of such effects really became a personal preference of the viewer[39]. There will be some instances where views of complete turbines might be considered more desirable, as opposed to viewpoints where turbines are only partially visible.

Vegetative screening

21. There has been considerable debate as to whether vegetation can be used as an effective means of mitigating the potential effects of turbine or wind farm. The debate has much to do with the likely lifespan of the wind farm (normally 20 years or more), the ephemeral nature of trees[40], and whether introducing plants to mitigate the presence of the turbines might introduce other, undesirable effects such as reduced light or restricting of views[41].

22. Screening can also often be sensitive to small changes in the viewer's location. Whilst a tree might screen turbines from view from one room of the house, it may not achieve the same result from another room. People, particularly on rural and lifestyle properties, often move around their property, and so for screening to be effective it would need to screen the wind farm from numerous locations. It is worth noting that this can be a limitation of photo-simulations, which show the view from a fixed point only. Additionally, decisions on previous wind farm applications suggest caution is needed in considering screen planting on private residential properties to mitigate effects[42].

23. It is fair in my opinion, however, to assume that existing healthy vegetation that acts as effective screening at the time of a wind farm application can be considered, particularly if such vegetation provides an alternative purpose (such as a shelterbelt, area of native vegetation, or established amenity planting around a garden).

Orientation of Viewpoint

24. A key consideration is whether the proposal is centred in the primary outlook from a destination, to the side of such an outlook, or within a secondary view that is subservient.

25. In a New Zealand context, this usually (but not always) means that proposals located to the north and west are more likely to be in a primary outlook, as we tend to orientate our houses (especially in a rural context where there are less constraints to orientation) towards the sun. By default, this usually (but not always) means that proposals to the south of a viewpoint or location are likely to have lesser degree of effects.

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[39] Ibid, Para 110
[40] Ibid, Para 520
[41] W067/2008, Para 214
[42] Notably Turitea Wind Farm considered through a Board of Inquiry.

26. Such perceptions also depend on the activity being undertaken at the viewpoint. Living rooms and family spaces that are orientated towards the view are deemed to experience a greater level of effects than a bathoom or spare bedroom.

Skyline backdrop

27. Some landscape experts have argued that turbines projected above a skyline allows the integrity of the landform to remain legible and dominant.[43] This does come at a cost, in that the effects of turbines against the sky are potentially more adverse because of the contrast. Visual prominence can increase when turbines located on the skyline are directly lit by sunlight, or silhouetted due to backlighting.[44]

28. Submitters on wind farm applications have often cited a preference to locate turbines below the skyline, especially in locations where the skyline is identified as an outstanding or significant landscape feature. This also has the bonus that turbines below the skyline are visible on only one side of the ridgeline. However, it is understood that such locations are generally not desirable from a wind-resource perspective.

Expanse of vista

29. A wide angle of view allows adverse visual effects to be reduced as more features of the landscape can be observed by the viewer. Conversely a narrow angle of view often focuses the viewer's attention, and turbines located in this narrow view are likely to be more dominant.[45]

Elevation of the turbines

30. Generally speaking, landscape elements that are elevated above a viewer are perceived as more dominant than those seen below a viewer. Tall turbines located on high ridgelines above the viewing location are likely to have greater adverse effects than turbines located on lower hills in the distance.

Building design and orientation

31. Assessments of previous wind farm applications have suggested that the orientation of a house away from a proposed wind farm significantly reduces the potential effects of a wind farm on a viewer in the property.[46] The layout of windows, outdoor areas, and extent of eaves can be factors considered in the mitigation of views that might otherwise be significant.[47]

32. However, as has been explored by both Project West Wind and Motorimu Court cases, by our very nature people move around properties, and relying on a house orientation away from the turbines does not necessarily

[43] W058/2006. Para 59 *(and discussed in cross-examination)*
[44] W031/2007, Para 115
[45] Ibid, Para 118
[46] W067/2008, Para 223
[47] W031/2007, Para 120

preclude the occupants having recurring views from important outdoor areas or less infrequently used parts of the house.[48] Whilst building design and orientation may be a mitigating factor, it is important to consider regular land use activities.

Blade movement and orientation

33. Whilst it is commonly considered that blades that are moving have potential for greater visual effect (as the movement attracts the eye), experience has indicated that people generally prefer that once turbines are constructed that they remain in movement. Static turbines have an appearance of being 'under utilised' and/or 'not complete'.[49]

34. Wind turbines appear more prominent when the rotors are viewed head-on rather than side-on. However, turbines automatically align themselves to the wind, and despite there often being a dominant wind direction, there are likely to be times when wind is blowing from different directions. It is generally considered that turbine orientation cannot be considered as a significant factor in determining overall dominance.

Shadow flicker and blade glint

35. Shadow flicker can be a persistent effect of turbines in a landscape, particularly where the orientation of the turbine to the viewer means that it shields the sun from view in early morning or late afternoon.

36. Experts have outlined evidence that suggests that the effect is often calculated to distances of 10 times greater the diameter of the blade.[50] For common New Zealand installations this suggests that shadow flicker is unlikely to be an issue for properties greater than 1km from the nearest turbine.

37. It is next to impossible to calculate the extent to which blade glint may occur, which is a phenomenon caused by sunlight being reflected off the rotating blades of a turbine, creating a flickering effect. While glinting can be detected over long distances (potentially as far as 10km), it tends to be an occasional phenomenon and one that is very sensitive to small changes in the location of the viewer. The standard, widely accepted, method of mitigation is to paint moving parts of turbines with a low-reflectivity paint.

Atmospheric and light conditions

38. Whilst the weather and light conditions play an important part in determining the dominance of turbines in a landscape, landscape assessments generally accept that the assessment of effects should be considered on a clear, fine day when the landscape is most likely to be fully appreciated by a viewer. There are situations where rising or setting sun may increase the

[48] Ibid, Para 519 and W067/2008, Para 224
[49] Gipe, Paul, 1995. *Design as if people matter: Aesthetic guidelines for the wind industry.* Paper presented at American Wind Energy Association conference, Washington DC March 30th 1995.
[50] Garrad Hassan Pacific Ltd, 2008. Shadow Flicker Assessment for the Waitahora Wind Farm. Page 5.

contrast of turbines relative to a viewer, but this is more an effect to be noted rather than judged in terms of significance.