Analysis of Submissions Regarding Proposed Mount Munro Windfarm

Produced by Second Nature Psychology Limited, for Mount Munro Protection Society Inc.

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**Author note: Mount Monro Protection Society Inc engaged the services of Second Nature Psychology for the purpose of briefly collating and presenting information pertaining to Meridian's windfarm proposal at Mount Munro. There is acknowledgement that this document does not replace an in-depth review of social impacts. This document is not to be published, reproduced, or otherwise used without author consent. Lastly, this document does not contain or reflect personal views or beliefs of that of the writer, Kate Steadman, Clinical Psychologist.*

Introduction

The number of proposed windfarms in New Zealand, and worldwide is increasing. Most will agree that the pursuit for more sustainable and renewable sources of energy is admirable and necessary. However, as population numbers increase and more remote areas are populated, finding suitable sites for renewable energies is challenging. With that comes increased negotiations to manage the tensions between the need for more sustainable and renewable energies, and social and environmental impact. Some residents near Eketahuna on the border of Tararua and Wairarapa New Zealand believe the social impact of the proposed windfarm is insurmountable and have therefore opposed an application by Meridian Energy to commence a new wind farm on Mount Munro. This document presents the concerns, views, and support of those who presented submissions in response to the application by Meridian to place a windfarm on Mt Munro. This document presents the data in the form of Thematic Analysis, and provides a review of existing evidence on windfarm impacts on local communities through a brief discussion. Industry and community knowledge is applied to explore the possible

psychological impacts of the proposed windfarm as well as brief commentary on appropriate approaches going forward.

Submission themes

Seventy-three submissions (63 apposing, two neutral, and eight in support of Meridians application) were provided for review. The data was analysed using Thematic Analysis to identify themes amongst submissions and present a cohesive document reflecting the presented views. This is followed by a psychological review of the submissions and identification of relevant themes in the discussion section.

Traffic during construction. There is concern amongst submissions that the increased traffic during construction of the windfarm will pose an increased risk to child safety (school pick-ups and drop offs), rapid deterioration of the road, increased difficulty to farming operations (e.g. moving livestock across the road), increased noise and subsequent disturbance of peace, disruption to recreational activities, and increased exposure to dust and vehicle emissions.

Of all the themes presented in the submissions, the identification of or number of negative impacts arising from traffic increase alone is perhaps the most significant. The remaining themes can somewhat be tied to the impacts of increased traffic, and so there is acknowledgement that this theme carries significant weight and cross-over with other themes outlined below.

Farming operations. Several submissions outlined their concern regarding their ability to partake in their usual farming operations. *"Farms very close to the wind farm may not be able to access areas for topdressing or weed control due to limitations when flying close to turbines."* With this is also concern for water availability and quality not only to people but to livestock and general health of streams and river *"Streams they (Meridian) classify as intermittent are not, they supply year-round, and help maintain the health of the Kopuaranga river and the farms between the watershed and the main river."*

Dust. There was unanimous concern for the impacts of dust, air pollutants and the impact this may have on water quality. This is given most nearby individuals rely on water

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collected from their roofs and stored in tanks on their properties. Comment was also made on the impact of dust on housing, crop and garden cover, and general cleanliness of properties.

Proximity of windfarms to residential dwellings. More than 30 dwellings are situated within 2km of the proposed Mt Munro windfarm with reported potential for further subdivision. However, residents are concerned about the possibility the growth in the area will slow or stop completely due to the area becoming less appealing for future residents. This includes the concern that property values will subsequently decrease due to the presence of the windfarm and the associated disturbance. Submissions showed that those who purchased land or property recently in the area would likely have chosen to purchase elsewhere had they known about the proposed windfarm.

Visual pollution and Flicker. Many individuals expressed concern regarding the visual pollution of the turbines themselves and the disruption this causes to their enjoyment of the landscape, as well as the impact/ disturbance caused by flicker (shadow and light flicker). Interestingly, visual pollution was most closely tied to cultural concerns amongst submissions where the disruption of the visual natural landscape was reported as incongruent with cultural values regarding the natural beauty of a landscape. The concerns regarding flicker were mostly reported as 'sudden or unpredictable' and therefore contribute to a sense of unease or inability to relax in response to visual unpredictability. There is understanding here that this may relate to an individual's values around peace and the elements that come with the value of peace i.e. predictability, quiet, constant, and calm.

Benefit of moving toward renewable energies. Many agreed the notion to explore and invest in renewable energies is worthwhile. This is evident across submissions, regardless of whether they are in support of or opposition of the application. However, those in support of the application prioritised this benefit 'for the greater good' over the negative impacts. What this reflects, is that the identified issues and benefits may be similar across individuals, but how they perceive their 'weight', or how they are prioritised is different depending on individual values and perceived impacts.

Lack of detail provided in proposal. Most opposing submissions provided agree there are gaps/ inconsistencies in Meridians planning which creates a sense of stress and anxiety among residents. There are suggestions that attempts to seek clarity from Meridian have not always been fruitful, or information provided has at times been inconsistent which has added

further frustration to the consultation process. This lack of clarity can make it more likely for an individual to assume a defensive and/or distrusting position toward Meridian, and other relevant organisations. Of particular concern was the identification and classification of waterways.

Noise (and the value of Peace and Quiet). This is perhaps one of the greatest concerns presented throughout the submissions reviewed. *"The application places emphasis on meeting standards, however it fails to address noise effect that may meet standards but nevertheless have a very negative effect in the lives of residents."* It is challenging to assess the impact of this as although there are standards and requirements for what noise level is allowable before physical harm is caused, it is more difficult to measure psychological impact of noise. This is largely because the level of noise and the disturbing qualities of the noise will vary based on individual perception and sensitivity (Freiberg et al., 2019). For instance, an individual who experiences sensory sensitivity is more likely to report a noise as distressing than an individual who does not have sensory sensitivity. An individual who places value on silence or quiet may have the belief that this is fundamental to their ability to achieve a sense of well-being. This belief or value placed on silence, is actually very common in rural communities as it reflects the choice these individuals have made to seek out such locations. Throughout the submissions, there was a consistent theme that many residents chose their location to live based on their values around peace, quiet, environment, and recreational activities such as horse riding, cycling, and gardening. Many of the submissions detailed their dissatisfaction with the fact their ability to live out these values will be disrupted which is further anticipated to reduce their sense of wellbeing.

Existing suggested solutions by opposing submissions

There are several solutions offered in the submissions should the proposal go ahead. Those which were commonly presented in the submission are briefly reiterated below. *Note* these suggestions are as they appear in submissions and not edited/ interpreted by the author.*

- Meridian to consider placing an underpass under Old Coach Road to assist farmer stock movements and enhance safety of these movements. Or, consider alternative routes to access the site.
- Meridian to consider extensive planting of residential boundaries to reduce impacts of dust and emissions, as well as reduce construction and traffic noise.

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- On noise, Meridian to reduce operational hours/ time frames, as well as reduce total time for construction.
- Meridian to consider providing financial compensation to mitigate negative impacts of construction (e.g. anticipated reduced property values).
- Meridian to agree to maintain or upgrade roads to ensure standard of roading does not deteriorate beyond current standard.
- Meridian to consider an alternative site altogether given the proximity to more than 30 dwellings of the proposed wind farm site.
- Meridian to ensure a safe drinking water supply to both residents and livestock.
- Meridian to provide absolute certainty of their plans, for this proposal and for any future expansion possibilities.
- Meridian to make modification to homes within 2km of site e.g. double glazing, water filtration, boundary planting.

Discussion

From the outlined themes, and taken with professional knowledge and research on similar projects, it appears there is significant anxiety and stress within community members who oppose Meridian's application. It is natural and common when under stress for individuals to perceive uncertainty as a threat to human safety. This is an evolutionary response and although has negative impacts, is evolutionarily adaptive (Grupe & Nitschke, 2013). Currently however, there is an acknowledgement that humans are faced with a large degree of uncertainty, rapid and increasing changes and this is particularly evident in smaller rural communities. The author specialises in working with individuals and communities in rural areas to improve their mental health and wellbeing. This is carried out mostly through 1-1 psychological therapy, and small group work/ facilitation of personal and professional development programmes. Through this work, there is evidence that farmers and those living rurally are already adapting to significant changes and uncertainty in the industry, and can therefore negatively impact their ability to adapt to further change and uncertainty. This in turn can result in lowered mood, increased worry and apprehension about future change, and overall reduction in well-being. Ultimately, how the stress of change is managed is crucial to maintaining well-being and resilience.

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Investigating the literature on psychological impacts of wind-farms and disruption to rural communities has provided some interesting insights into the experiences of individuals who may live close to, or are regularly exposed to windfarm noise and visual disturbance. A study (Crichton et al., 2014) found that an individual's positive or negative expectation toward wind turbine noise impacted health and mood symptoms post exposure. However, this study also acknowledged it is unclear at this stage as to whether the effects of positive or negative expectation to wind turbine noise can be reversed, for example with the introduction of knowledge of positive or benign health outcomes regarding wind turbine noise to alleviate or prevent negative symptoms reported following negative expectations. With this, there was also the acknowledgement that regular negative material accessed easily on the internet or in the media may make it more difficult for individuals to ignore or recover from the symptoms associated with negative expectations. As mentioned, with increasing uncertainties in farming for example, it can become a question of how much or how long an individual can hold positive expectations toward significant changes that impact their way of being and living.

On-going stress can manifest in several ways, including reduced sleep, increased migraines, or physical ailments (Jeffery et al., 2013). The relationship between psychological and physical health is tightly woven and so one cannot be taken in complete isolation of the other.

Building on this, there is evidence that individuals who live closest to windfarms are more negatively impacted (Freiberg et al., 2019). For example, uncertainty is a significant contributor to stress. Throughout submissions reviewed, the level of uncertainty felt by individuals was clear, and the perceived negative impacts of this are high (and highest for those within 2km of the proposed windfarm). In the absence of clear communication and clear expectations (or essentially certainty) from Meridian, individuals are more likely to overestimate negative outcomes as a mechanism of survival. Evolutionarily, it is of benefit to humans to 'overestimate' risk to ensure we behave in a risk averse manner or take more time and care to consider possible risks, and invest more time and energy in avoiding perceived risks. In modern day, threats to our physical safety are more limited and controllable, but individuals will also respond to perceived threats to their sense of psychological safety. This response is not uncommon, and has been documented particularly in residents within 10km of a windfarm (le Maitre et al., 2024). Therefore, knowing that stress can manifest in physical ill-health as mentioned (Jefferey et al., 2013), negative impacts of interacting with the windfarm

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and windfarm related activities could show up in time as increased doctors' visits to the local GP or increased need on social services. These relationships can appear subtle, but entirely possible.

A significant difficulty is, that although there can be set limits on noise production, hours of operation, number of trees planted, water quality readings, and more. It is more difficult to assess psychological and social impacts as these can be impacted by individual factors in terms of perceptions of stress, tolerance to change and uncertainty, stress management practices, pre-existing mental wellbeing status, and individuals' ability to act on their values/ partake in activities important for maintaining their wellbeing during and after construction. It is important not to gloss over the mention in the submissions of the concern that recreational activities will be negatively impacted through additional noise and traffic, but also that their 'sense' of peace and tranquility will be disturbed. This reflects as mentioned earlier, the value that residents place on 'peace' (or similar) and what it means to them to have this disrupted. Everyone has a set of internal values that guides their decision making, drives them towards particular people activities, work, or places, and ultimately informs who they are as people. When these values are well aligned and executed, it enables people to achieve greater well-being and feel content and centered (Paul et al., 2023). If individuals are unable (to any degree) to behave in a way that reflects their values, then their well-being can become compromised.

Summary

In summary, there are clear themes regarding the concerns presented by those who oppose the application by Meridian to place a windfarm on Mount Munro. The themes were like those presented in opposition of other windfarms both nationally and internationally with particular focus on impacts of, but not limited to; noise, dust (and contamination from this), property values, and disturbance of 'peace'. It was highlighted that some residents are concerned with the lack of detail or certainty provided by Meridian and their development plans for the windfarm. The uncertainty and stress of the application process itself, lack of control, and lack of clear and consistent communication all have negative impacts on individuals in terms of how they respond to stress, and how this may show up physically as well as psychologically. Going forward, if Meridian is to be successful in their application, it would be

of benefit to them to engage the community with clear and transparent communication to alleviate some stress and uncertainty, and to build a sense of trust and openness.

It is well recognised and documented that individuals' communities typically respond more favourably to change when they feel elements of uncertainty are addressed (as much as can be). Providing individuals with an opportunity to be heard, and for their suggestions to be considered is an important process which aids adjusting to significant change (le Maitre et al., 2024). As the number of applications for windfarms increases over time, so too will the need to refine a template for social engagement and mitigation at the very beginning of the application process (Hallan & González, 2020).

For individuals faced with the possibility of having change pressed upon them, it is important to connect with their values and identify ways in which they can express or engage in behaviours that reflect these throughout this process. Ongoing stress management is important in the pursuit of a desired outcome, and also to mitigate the negative impacts of the application process.

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