

# Response ID ANON-URZ4-5FQM-E

Submitted to Fast-track approval applications  
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## Submitter details

Is this application for section 2a or 2b?

2A

### 1 Submitter name

Individual or organisation name:  
Ryan Piddington

### 2 Contact person

Contact person name:  
Ryan Piddington

### 3 What is your job title

Job title:  
Strategic Consents Manager

### 4 What is your contact email address?

Email:  
s 9(2)(a)

### 5 What is your phone number?

Phone number:  
s 9(2)(a)

### 6 What is your postal address?

Postal address:  
  
Mercury NZ Limited  
Private Bag 12023  
Tauranga 3143

### 7 Is your address for service different from your postal address?

Yes

Organisation:  
Mercury NZ Limited

Contact person:  
Howard Thomas

Phone number:  
s 9(2)(a)

Email address:  
s 9(2)(a)

Job title:  
General Counsel

Please enter your service address:

The Mercury Building, 33 Broadway, Newmarket, Auckland

## Section 1: Project location

Site address or location

Add the address or describe the location:

Mercury is seeking to repower the Tararua Wind Farm which is located on the foothills of the Tararua Ranges, south of the Manawatu Gorge and north of the Pahiatua Track. The wind farm is approximately 5.5 km to the west of the township of Woodville.

Access to the Tararua Wind Farm is available via Centre Road (Palmerston North side) and Hall Block Road (Woodville side).

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Do you have a current copy of the relevant Record(s) of Title?

Yes

upload file:

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Who are the registered legal land owner(s)?

Please write your answer here:

The registered land owners that will support the repowering of the Tararua Wind Farm are as follows:

• s 9(2)(a)

• Tararua Wind Power Ltd

• s 9(2)(a)

• Massey University

• Hall Block Resources Limited

• s 9(2)(a)

• A J Jackson & Son Limited

Detail the nature of the applicant's legal interest (if any) in the land on which the project will occur

Please write your answer here:

Mercury holds a mix of easements and lease agreements with the relevant landowners that provide the permissions from the landowners required to construct, own and operate the wind farm and associated infrastructure (including any repowering proposal).

## Section 2: Project details

What is the project name?

Please write your answer here:

Tararua Wind Farm Repowering Project

What is the project summary?

Please write your answer here:

The Tararua Wind Farm was constructed in three stages between 1998 and 2007 and includes a combination of 103 Vestas 47 turbines (666 kW) and 31 Vestas 90 turbines (3MW), which produce approximately 563 GWh of electricity annually. The wind farm is nearing end of life and will need to be repowered to ensure that this generation is not lost to the grid.

The proposed project is to repower the existing site with 43 modern turbines. This repowering will maintain the existing 563 GWh of electricity generated by the wind farm and also allow an increase in output of approximately 40% as a result of the larger modern turbines (resulting in the generation of approximately 800 GWh per annum).

What are the project details?

Please write your answer here:

The primary purpose of the Tararua Wind Farm Repowering Project is to deliver reliable low carbon renewable electricity for Aotearoa New Zealand. The project seeks to consent replacement all of the existing turbines on the site with 43 new turbines that will have a maximum blade tip of 180 m. The project will utilise the existing transmission infrastructure with minor upgrades required to enable the increase in output from the repowered wind farm. In effect, the project represents an opportunity to replace ageing technology at the Tararua Wind Farm and more efficiently utilise the internationally-recognised wind resource for renewable electricity generation.

The repowering of the Tararua Wind Farm will not only secure the existing output of the site but allow an uplift in generation of around 40% as a result of

new technology. The project will also provide an opportunity to improve the general uniformity of turbines across the wider landscape of the Tararua Ranges.

The activity to which this application relates:

- The decommissioning and removal of 134 existing turbines;
- The installation of up to 43 turbines up to 180 m in height within the project site for the generation of renewable electricity;
- The erection of up to four permanent meteorological masts up to 100 m in height;
- The installation of new underground 33kV electrical and fibre optic cable network between the turbines;
- The establishment of new or widening of existing internal access road network and earthworks; and
- The widening of existing local roads approaching the site from the State Highway.

Describe the staging of the project, including the nature and timing of the staging

Please write your answer here:

One of the aims of the Tararua Wind Farm Repowering Project will be to maximise wind farm productivity while undertaking construction and deconstruction works. This will be achieved by allowing old turbines to run while installing as many new turbines as possible. Instances where this may not be achievable would be where a new turbine is going to be placed in close proximity to an old turbine (which will result in those turbines being removed and electrically bypassed early in the construction process).

Once the new turbines are installed and ready for commissioning, the old turbines will need to be shut down in order to free up electrical capacity. By waiting for the construction stage to be completed, clashes between construction and deconstruction will be minimised or avoided and the wind farm will be producing the maximum amount of electricity possible over the repowering period. This will mean there will be periods of time when the new wind turbines are installed, but not operating, and periods when the new turbines are operating, but the old turbines (which will not be operating) are still installed. By organising the project in this way, we can potentially avoid 12-24 months of lost production to the electricity system.

Overall, construction of the repowering project is expected to take approximately 24 months.

What are the details of the regime under which approval is being sought?

Please write your answer here:

The construction, operation and maintenance of the Tararua Wind Farm Repowering Project will require authorisations under the Resource Management Act 1991 and Wildlife Act 1953, and also require approvals under the Heritage New Zealand Pouhere Taonga Act 2014.

With respect to the Resource Management Act 1991, the project will require all relevant resource consents under the Act including the following:

- Land use consents under s.9 from the Palmerston North City Council and Tararua District Council for the establishment of wind turbines, anemometers, substation / switchyard infrastructure, transmission lines, operations building, access tracks, earthworks, vegetation clearance, temporary construction compounds, and the storage and use of hazardous substances;
- Land use consent under s.9 from the Horizons Regional Council for vegetation clearance and soil disturbance activities, including adjacent to natural inland wetlands;
- Land use consent under s.13 from the Horizons Regional Council for the construction and use of culverts and erosion control structures in waterbodies;
- A water permit under s.14 from the Horizons Regional Council for the diversion of water;
- A water permit under s.14 from the Horizons Regional Council for diverting groundwater during the construction of the wind farm;
- A discharge permit under s.15 from the Horizons Regional Council for the discharge of water and contaminants into land and / or water; and
- A discharge permit under s.15 from the Horizons Regional Council for the deposition of fill to land.

The Tararua Wind Farm Repowering Project will also require wildlife permits pursuant to the Wildlife Act 1953 in relation to the monitoring and management of avifauna mortalities on the project site, as well as the potential relocation of lizards on the project site.

The project may also require an archaeological authority under the Heritage New Zealand Pouhere Taonga Act in relation to the potential discovery of previously unidentified heritage sites within the project site.

If you seeking approval under the Resource Management Act, who are the relevant local authorities?

Please write your answer here:

Manawatu – Whanganui Regional Council (Horizons)  
Palmerston North City Council  
Tararua District Council

What applications have you already made for approvals on the same or a similar project?

Please write your answer here:

No applications have been made for this project.

Is approval required for the project by someone other than the applicant?

No

Please explain your answer here:

No, no approvals other than those listed above are the required for the project.

If the approval(s) are granted, when do you anticipate construction activities will begin, and be completed?

Please write your answer here:

Consenting: 2024 - 2025

Detailed Design/procurement: 2025 - 2026

Financial Investment Decision: 2026

Construction: 2027

First Power: 2028

Handover: 2029

### Section 3: Consultation

Who are the persons affected by the project?

Please write your answer here:

Manawatu-Whanganui Regional Council

Palmerston North City Council

Tararua District Council

Rangitāne o Manawatu

Palmerston North International Airport

Massey Aviation

NZICPA

Aviation Operators

Detail all consultation undertaken with the persons referred to above. Include a statement explaining how engagement has informed the project.

Please write your answer here:

Meetings have been held with all the above key stakeholders to outline the scope of the project and to understand any concerns they have around the project or their preferred approach to ongoing engagement. Mercury has established relationships with these parties, which have been built through the ongoing operation of the existing wind farm and the construction of the nearby Turitea Wind Farm.

A Memorandum of Understanding was entered into with Rangitāne o Manawātū in 2008 in relation to the construction of the Turitea Wind Farm and establishes a platform for an enduring relationship between Mercury and Rangitāne o Manawātū. The MoU is currently being reviewed to ensure it remains relevant in the context of today's environment and includes the Tararua Wind Farm Repowering Project. With regard to the aviation stakeholders, discussions have been held to understand the aviation constraints on the site. These constraints have informed the design of the wind farm and will continue in shaping and developing the set of proposed conditions to accompany consent.

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Describe any processes already undertaken under the Public Works Act 1981 in relation to the land or any part of the land on which the project will occur:

Please write your answer here:

No processes under the Public Works Act 1981 have been undertaken, or are proposed to be undertaken, in order to facilitate the Tararua Wind Farm Repowering Project. Mercury holds all necessary property approvals to enable access to the site for construction and operation of the wind farm.

### Section 4: Iwi authorities and Treaty settlements

What treaty settlements apply to the geographical location of the project?

Please write your answer here:

The only treaty settlement relevant to the Tararua Wind Farm Repowering Project is the Rangitāne o Manawatu Claims Settlement Act 2016.

The Rangitāne o Manawatu Claims Settlement Act 2016 records the acknowledgements and apology given by the Crown to Rangitāne o Manawatu in the Deed of Settlement and gives effect to certain provisions of the Deed that settle the historical claims of Rangitāne o Manawatu with respect to breaches of Te Tiriti o Waitangi. In addition, the Act provides for cultural redress - including protocols for conservation and a statutory acknowledgement by the Crown of the statements made by Rangitāne o Manawatu of their cultural, historical, spiritual, and traditional association with certain statutory areas and the effect of that acknowledgement, together with deeds of recognition for specified areas.

The statutory acknowledgement areas close to the project site include:

- The Manawatu Gorge Scenic Reserve; and
- The Manawatu River and its tributaries.

Under section 29 of the Rangitāne o Manawatu Claims Settlement Act 2016, the Crown has acknowledged the statement of association made by Rangitāne o Manawatu of their particular cultural, spiritual, historical, and traditional association with the Manawatu Gorge Scenic Reserve. The statutory acknowledgement notes that as Rangitāne o Manawatu develop their capacity they look forward to the future and the time when they are fully engaged

in upholding the principle of kaitiaki over the Manawatu Gorge Scenic Reserve.

In addition to the above, the Act also acknowledges the statement of association made by Rangitāne o Manawatu of their particular cultural, spiritual, historical, and traditional association with the Manawatu River and its tributaries (which the wind farm is in the catchment of). The Manawatu River is of immense historical, cultural, spiritual and traditional significance to Rangitāne o Manawatu and was the main route for travel and communication for Rangitāne o Manawatu.

No lands of interest are affected.

Are there any Ngā Rohe Moana o Ngā Hapū o Ngāti Porou Act 2019 principles or provisions that are relevant to the project?

No

If yes, what are they?:

Are there any identified parcels of Māori land within the project area, marae, and identified wāhi tapu?

No

If yes, what are they?:

Is the project proposed on any land returned under a Treaty settlement or any identified Māori land described in the ineligibility criteria?

No

Has the applicant has secured the relevant landowners' consent?

Yes

Is the project proposed in any customary marine title area, protected customary rights area, or aquaculture settlement area declared under s 12 of the Māori Commercial Aquaculture Claims Settlement Act 2004 or identified within an individual iwi settlement?

No

If yes, what are they?:

Has there been an assessment of any effects of the activity on the exercise of a protected customary right?

No

If yes, please explain:

Upload your assessment if necessary:

No file uploaded

## Section 5: Adverse effects

What are the anticipated and known adverse effects of the project on the environment?

Please describe:

### 1. BACKGROUND

The Tararua Wind Farm Repowering Project is to be located on the Tararua Ranges in the Manawatu Region. The existing Tararua Wind Farm was constructed in three stages between 1998 and 2007 and is a combination of 103 x V47 660kW and 31 x V90 3MW machines, providing approximately 563GWh of electricity annually. The existing wind farm is nearing end of life and will need to be repowered to ensure that generation supply to the National Grid is not lost. The proposed project is to repower the site with up to 43 modern turbines.

The Tararua Wind Farm Repower will involve the decommissioning of the 134 turbines currently on site and the construction, operation and maintenance of up to 43 turbines. Each turbine will have a maximum height of up to 180 m above ground level (to blade tip). Ancillary infrastructure will include new internal access roads, upgrading or widening of existing internal access roads, and permanent meteorological masts.

Based on the site characteristics and the potential turbine options available, the Tararua Wind Farm Repowering Project could potentially have an installed generation capacity of approximately 220 MW and generate in order of 800 GWh of electricity per annum, a 40% uplift in the current generation from the site.

### 2. EXISTING ENVIRONMENT

The site known as the Tararua Wind Farm is contained within an irregular rectangle defined by Fitzherbert East Road and the Manawatu River to the northwest, the Manawatu Gorge Scenic Reserve and Gorge Road to the north and northeast, and the Pahiatua Track to south. North Range Road traverses through the site, the road alignment coincides with the boundary that defines the administrative areas of the Tararua District Council and the Palmerston North City Council. The original wind farm was constructed between 1998 and 2007 and is a combination of 103 x V47 660kW and 31 x V90 3MW machines, providing 563GWh annually. The wind farm is a regional icon and is fully integrated with the adjacent farming activities.

The Tararua Wind Farm Repowering project is to be established within the footprint of the existing Tararua Wind Farm and will utilise the existing transmission, substation and operations and maintenance facilities of the existing wind farm (with minor upgrades required to enable the increased output).

Tararua Wind Farm lies on a peneplain and associated ridgelines ranging in altitude from 320m a.s.l. to 544m a.s.l. The area is exposed to strong winds and high rainfall. It is a Class 1 wind site. This high peneplain / ridgeline is subject to prolonged westerly gales, morning fogs and periods of persistent cloud. Rainfall usually falls into the range of 1,200-1,800 mm p.a. increasing to the south with altitude. Rainfall is evenly spread throughout the year. Snowfalls in winter occur on only a few days.

The predominant current land use in the area is farming and the majority of the site is in improved pasture and season crops for stock fodder.

### 3. EFFECTS OF THE PROJECT

#### 3.1. POSTIVE EFFECTS

The construction and operation of the Tararua Wind Farm Repowering Project will generate a number of positive effects for the local and regional community, as well as New Zealand. These include:

- Securing the existing use of renewable energy resources on the site into the future. In this regard, the Tararua Wind Farm has been a world class wind farm since its commissioning in 1998 and the project will enable the more efficient use of the site / resource;
- Continuing the diversification and increase of New Zealand's electricity supply. In this regard, wind generation currently only contributes 8.4% to the national supply in an average year of which the current Tararua Wind Farm contributes 15%;
- Repowering the site would secure the 15% and allow an additional 6% increase to New Zealand's wind energy production;
- The current wind farm generates enough electricity to power over 75,000 homes or 280,000 electric vehicles each year, the repowered site would increase these numbers to 100,000 homes and 380,000 electric vehicles;
- The fully repowered site would displace over 700,000 tonnes of CO<sub>2</sub>e per year if the equivalent power was generated from coal and over 300,000 tonnes of CO<sub>2</sub>e if generated from gas;
- The employment of approximately 200 FTE workers at the peak of construction,
- Increase the proportion of electricity generated in New Zealand from renewable energy sources, supporting our country's decarbonisation and climate policy ambitions;
- Once the wind farm is commissioned, a community fund will be established to support local initiatives and clubs in the regions.

#### 3.2. VISUAL AND LANDSCAPE

Mercury is working with Isthmus on the visual and landscape effects of the Tararua Wind Farm Repowering Project.

Overall, it is considered that the repowered wind farm would not have significant adverse cumulative effects on the characteristics and values of the Ruahine and Tararua Ranges relative to the existing wind farm. Rather, the repowering project would likely have positive effects on the skyline in terms of:

- The effects of larger wind turbines would be balanced by the positive effects of fewer turbines in the landscape overall (i.e. lower density) and greater consistency of appearance; and
- The standardising of the Tararua Wind Farm would also result in a reduction in the visual clutter of the skyline and help remedy the skyline's aesthetic cohesion and continuity.

Potential adverse effects on the physical landscape would be minimised by the accommodating nature of the topography, the farming land use and the re-use of existing ancillary infrastructure.

Whilst it is recognised that wind farms inevitably bring change to the rural environments in which they are located, the potential visual amenity effects are unlikely to be significant for the following reasons:

- The nearest existing wind turbines in most cases are already the larger V90 model;
- The increase in prominence or visibility of upgraded wind turbines will be offset by the reduced number and more consistent appearance of wind turbines;
- The existing wind farm has established a degree of acceptability of wind turbines in the environment; and
- There is reasonable separation from the wind turbines to the nearest dwellings.

In effect, a repowered wind farm would provide greater generation capacity from the same footprint and would be a more efficient use of the landscape.

#### 3.3. ECOLOGICAL EFFECTS

##### 3.3.1. TERRESTRIAL VEGETATION & HABITATS

Mercury is working with Boffa Miskell on the terrestrial ecology effects of the Tararua Wind Farm Repowering Project.

The study area is approximately 1,420 ha in area of which 1,310 (92.5%) is in improved pasture or exotic tree lands and shelterbelts. The remaining 105 ha (7.5%) is made up of scattered fragments of shrublands and seral forest, typically in incised gullies on the fringes of the site with more extensive scrub and forest areas extending up the eastern slopes to the south of the site.

Overall, there are fourteen plant communities and associated habitats that were described. Of these, three forest types meet the Horizons One Plan Schedule F criteria for significance. These areas of forest lie on slopes below the main ridgelines and with careful layout design will be avoided as far as practicable. Mitigation will be applied as necessary to any residual terrestrial ecology effects.

##### 3.3.2. HERPETOFAUNA

Boffa Miskell have undertaken lizard surveys on the site and found no lizards or indications of lizards being present.

##### 3.3.3. BATS

A desktop review considered the extensive bat monitoring that has been undertaken in the Manawatu Gorge to the north and at the Turitea Wind Farm to the south. At these sites no bats were recorded.

An onsite bat survey was undertaken and the results repeated the findings of those at the Manawatu Gorge and Turitea. No bat activity was recorded during this survey within the Tararua Wind Farm site. Given this, it is not considered that any bat mitigation strategies will need to be implemented as part of the operation of the wind farm.

##### 3.3.4. AVIFAUNA

Previous avifauna surveys have been carried out locally for the Te Rere Hau and Turitea Wind Farms to the south, and the Manawatu Highway Project to the north. These combined studies established a baseline for the studies undertaken at the Tararua Wind Farm. Site investigations focused on bird

activity, distribution and behaviours within the site that could be used to predict turbine risk.

Four methods were used for bird observations, combined these resulted in the identification of 35 bird species, of which 13 species are introduced, and 22 were native.

74% of all birds observed were introduced species. Of the native birds recorded, the most common were grey warbler (213 or 2.61% of observations), welcome swallow (198 or 2.43% of observations), paradise shelduck (192 or 2.36% of observations), silvereye (183 or 2.24% of observations), and pipit (148 or 1.82% of observations). In terms of their conservation status,

- 14 native bird species were not threatened,
- 1 was Threatened – naturally critical (black-billed gull)
- 1 was Threatened – nationally vulnerable (Caspian tern)
- 2 were At Risk, declining (NZ pipit, red-billed gull)
- 3 were At-Risk, naturally uncommon (black shag, little black shag, rifleman)
- 1 was At-Risk, recovering (bush falcon)

NZ Falcon were seen and heard on a number of occasions during the monitoring programme, and at 19 different locations. They occurred either singly or as a pair suggesting they may breed locally. NZ Falcon were not observed in the preconstruction bird monitoring suggesting that they have moved into the area during the course of the operation of the current wind farm. Looking to studies of similar (analogue) species of falcon in the UK which are far more numerous, the collision risk for this group of raptors (hunting birds) is generally found to be very low, at least in part because falcon have a very high avoidance rate.

Currently, in New Zealand, post construction collision studies have been carried out at four wind farms, with a fifth underway. Falcon were observed at two and were likely present in low numbers or rarely, at several of the others. No mortalities of falcon have been recorded to date during post construction studies at these sites.

In light of the above, it is considered that the Tararua Wind Farm Repowering Project can operate in a manner that is not detrimental to existing native bird populations on, and around, the project site.

### 3.3.5. WETLANDS

Wetlands have been identified within the site boundary by Boffa Miskell. One small original wetland was identified at the south end of the project site. This wetland is likely to be avoided through project design.

The lack of original wetlands within the project site was expected as the project site does not have the geo-morphological features necessary for wetland formation. With that one exception, it has been concluded that all other mapped wetlands were induced by land clearance, conversion to pasture and stock activities. Prior to land clearance, all would have been gravelly seeps merging into small cobble bottom streams beneath a forest canopy.

It was also confirmed from the avifauna, lizard, and freshwater studies that these features do not provide significant habitats for indigenous fauna.

Therefore, the wetlands identified within the project site have very low ecological values.

Whilst there are low value natural wetlands within the site, these will be avoided as far as practicable (although it is also recognised that the technical design of the wind farm means that it is not practicable to avoid all such effects). Wetland effects will be further minimised through the implementation of stormwater, erosion and sediment control measures. In addition, potential adverse effects will be remedied by regressing exposed areas as soon as possible following construction work.

Appropriate culvert design and construction methodologies will be employed to ensure no impediments to fish passage are created by the proposal; and potential sediment runoff associated with the proposed construction works will be appropriately managed by way of an Erosion and Sediment Control Plan which will include measures such as minimising soil disturbance and diverting clean water.

### 3.4. SHADOW FLICKER AND BLADE GLINT

There are no standards for the assessment of shadow flicker duration limits for wind farms in New Zealand. As such, and consistent with other resource consents for wind farms in New Zealand, the Australian Environment and Protection Heritage Council, Draft National Wind Farm Development Guidelines would be recommended as the basis for consent conditions. These standards have a recommended exposure limit for both the theoretical worst-case scenario and realistic case scenario.

The maximum shadow flicker exposure for the theoretical worst-case scenario shall not exceed 30 hours per year and the maximum shadow flicker exposure for the realistic case scenario shall not exceed 10 hours per year. The final constructed wind farm will be designed to comply with these requirements.

Blade glint can be produced via the reflection of the sun's light from the surface of a turbine blade. However, modern turbine blades are generally coated with non-reflective paint to prevent the occurrence of blade glint. However, resource consent conditions will be proposed to require the turbine blades to be coated with non-reflective paint.

It is also noted that the existing wind farm has not been subject to any shadow flicker or blade glint complaints since it was commissioned.

### 3.5. CONSTRUCTION

All construction activities associated with the establishment of the Tararua Wind Farm Repowering Project will be undertaken in accordance with an Environmental Construction Management Plan ("ECMP"). The intent of the ECMP will be to ensure that all construction related activities are undertaken in a manner that ensures that potential adverse effects are avoided, remedied or mitigated, and that sediment control is undertaken in accordance with the Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region 2016 (GD05).

The construction of turbine hard stand areas will require the importing of structural concrete, reinforcing steel and aggregates to the site. Aggregates will be delivered to the site and stockpiled within the concrete batching plant confines, which will incorporate measures to contain dust and sediment laden run-off. There is some potential for aggregate to be sourced on site, predominantly for use in the construction of access roads.

Where practical existing internal access tracks will be utilised throughout the project site. Some of the internal tracks may need widening and realigning for the larger turbines. Access to each turbine is necessary and new internal roads will be required to access the new locations. During construction, these tracks must be capable of accommodating 'oversized' vehicles and associated loads.

- Fill from earthworks will be disposed of onsite in areas that are:
- Outside ecological protection areas and sensitive environment areas identified
- Typically located in small depressions near ridgelines and / or on broad ridgeline features with limited surface water catchment above;
- Situated in an area of stable ground; and
- Located near an area of surplus cut materials.

The key measures for minimising the potential environmental effects or working in or near watercourses include installing temporary diversion measures and ensuring machinery is not stored in or near watercourses. The necessary design and construction controls for structures within watercourses to ensure that appropriate fish passage, erosion control, and pest management occurs will be employed whilst ensuring that all instream works are kept to

a minimum to avoid as far as practicable any discolouration of the waterways.

A temporary concrete batching plant will also be established within the project boundaries and situated to minimise the potential adverse impacts for the nearest neighbours. A standby batching plant will also be available as a backup. It is envisaged these batching plants will be located next to each other. This will provide a concrete supply source close to the construction work.

The concrete batching plant will receive raw materials from offsite. Raw materials will be stored in separate bays or storage tanks in relation to the preparation of concrete on site.

### 3.6. TRAFFIC EFFECTS

In light of the recent construction of the Turitea Wind Farm by Mercury, the transport route to site is well known. The increase in turbine size may require additional road widening in some locations.

Prior to commencement of construction work a Temporary Traffic Management Plan will be provided to the relevant roading authority ensuring all specific legislative requirements in accordance with the New Zealand Guide to Temporary Traffic Management (NZGTTM), Worksafe Guide to Keeping Healthy & Safe While Working on the Road and Roadside and National Code of Practice for Utility Operators' Access to Transport Corridors.

The community will be kept informed of construction operations to encourage maximising safety and minimising disruption.

### 3.7. NOISE EFFECTS

#### 3.7.1. CONSTRUCTION NOISE

Plant machinery associated with the construction of the Tararua Wind Farm Repowering Project will include earthmoving equipment to prepare the roads, hard stand areas and turbine foundations, the operation of the concrete batching plants, possible pile driving and cranes to erect the turbines. Construction activities will be carried out in such a way as to comply with the provisions in NZS 6803:1999 Acoustics –Construction Noise. A Construction Noise Management Plan ("CNMP") will be submitted that will demonstrate how compliance with construction noise levels will be achieved.

#### 3.7.2. OPERATIONAL NOISE

The wind farm will be designed and operated to be compliant with the requirements of NZS6808:2010 Acoustics – Wind Farm Noise.

The current Tararua Wind Farm is compliant with its noise conditions under its resource consent. The new repowered wind farm will not be expanding the current footprint and will replace the turbines with modern turbines which are quieter. As such the noise effects are unlikely to be any greater than the current noise effects from the current operating wind farm.

### 3.8. HERITAGE AND ARCHAEOLOGICAL EFFECTS

No archaeological or historic sites are recorded for the site and none were discovered during the construction of the original wind farm.

### 3.9. CULTURAL EFFECTS

Consultation with Rangitāne O Manawatu is ongoing and Mercury will continue to engage to understand the potential cultural effects of repowering the site. However, it is noted that the existing wind farm on the site was considered acceptable by Rangitāne O Manawatu as part of the consideration of previous consent applications.

### 3.10. EFFECTS ON AVIATION

The Horizons One Plan recognises Palmerston North Airport as being of regional importance (along with the Tararua Wind Farm). It specifies that the Horizons Regional Council, Palmerston North City Council and Tararua District Council must ensure that adverse effects on infrastructure and other physical resources of regional or national importance from other activities are avoided as far as reasonably practicable, including by:

- Ensuring that new activities that would adversely affect the operation, maintenance or upgrading of infrastructure are not located near these activities;
- Ensuring that there is no change to existing activities that increases their incompatibility with existing infrastructure; and
- Notifying the owners or managers of infrastructure of consent applications that may adversely affect the resources that they own or manage.

Engagement with Palmerston North Airport and the aviation operators has been ongoing with feedback regarding flight path site constraints informing the design of the repowered wind farm. Engagement will continue to inform conditions of consent to ensure the height and layout of the wind farm is constructed and operated in minimise adverse effects to their operations.

## 4. SUMMARY

The Tararua Wind Farm has been in operation for 25 years and is regionally significant infrastructure. It currently provides around 560GWh per annum to New Zealand's electricity system each year and it is critical that it can be repowered at end of life to ensure New Zealand does not move backwards in terms of security of supply and renewable generation.

Repowering the site with larger, new wind turbines will allow an uplift in generation of approximately 60MW and will allow for a more efficient use of the wind resource. This uplift will come while being able to use the existing transmission infrastructure (with minor upgrades) and without increasing the project footprint.

As the site has been operational for a long time, the impacts and effects of the wind farm are well known. The majority of adverse effects from the installation of 43 new turbines will largely be offset by the removal of the 134 existing turbines.

Upload file:

Tararua Repower Indicative Layout.PNG was uploaded

## Section 6: National policy statements and national environmental standards

What is the general assessment of the project in relation to any relevant national policy statement (including the New Zealand Coastal Policy Statement) and national environmental standard?

Please write your answer here:

The national policy statements and national environmental standards of relevance to the Tararua Wind Farm Repowering Project include:

- National Policy Statement for Renewable Electricity Generation ("NPSREG");
- National Policy Statement for Freshwater Management ("NPSFM");
- Resource Management (National Environmental Standards for Freshwater) Regulations 2020 ("NESF");

The National Policy Statement on Indigenous Biodiversity does not apply to the Tararua Wind Farm Repowering Project as clause 1.3(3) of the NPS states that "nothing in this National Policy Statement applies to the development, operation, maintenance or upgrade of renewable electricity generation assets and activities and electricity transmission network assets and activities. For the avoidance of doubt, renewable electricity generation assets and activities, and electricity transmission network assets and activities, are not "specified infrastructure" for the purposes of this National Policy Statement."

In addition, the National Policy Statement on Highly Productive Land does not apply to the Tararua Wind Farm Repowering Project as the land use classification for the project site as identified by the New Zealand Land Resource Inventory does not consist of LUC Classes 1, 2 or 3. The project site therefore does not meet the criteria for highly productive land and therefore, the NPSHPL is not considered to be of relevance.

A general assessment of each of the relevant national policy statements and national environmental standards that are relevant to the Tararua Wind Farm Repowering Project is summarised below.

#### National Policy Statement for Renewable Electricity Generation

The sole objective of the NPSREG seeks to provide for the development and operation of new and existing renewable electricity generation activities, such that the proportion of New Zealand's electricity generated from renewable energy sources increases to levels that meet or exceed the Government's national target for renewable electricity generation.

The Tararua Wind Farm Repowering Project is consistent with the NPSREG, particularly with regard to Policies A, B and C1 which seek to ensure decision makers:

- Recognise the benefits of renewable electricity generation activities;
- Acknowledge the practical implications for achieving an increase in the proportion of electricity generated from renewable sources; and
- Acknowledge the practical constraints associated with the development, operation, maintenance and upgrading of new and existing renewable electricity generation activities.

In this regard, the development of the Tararua Wind Farm Repowering Project will provide additional renewable electricity generation capacity and contribute to security of renewable electricity supply, and assist in displacing greenhouse gas emissions that would otherwise be released by the generation of electricity through non-renewable processes.

It is also noted that potentially suitable sites for wind farms are reasonably limited and that infrastructure required to harness the wind resource will inevitably have some adverse effects on the environment. These practical implications are recognised in the NPSREG and it is noteworthy that the site is already utilised for a wind farm and has previously been acknowledged as appropriate.

The practical implications and locational constraints associated with the development of renewable electricity generation activities are recognised in Policy C1 of the NPSREG. There are a number of factors that influence the identification of a site as being suitable for the development of a wind farm – not least being the quality / consistency of the wind resource and proximity to transmission infrastructure.

The proposed Tararua Wind Farm Repowering Project is considered to be consistent with the stated objective and policy directives of the NPSREG.

#### National Policy Statement for Freshwater Management

The fundamental concept of the NPSFM is Te Mana o te Wai, a concept that refers to the importance of water and recognises that protecting the health of freshwater will protect the health and wellbeing of the wider environment which represents an adoption of a water-centric approach to freshwater management.

The sole objective of the NPSFM follows this concept and seeks to ensure that natural and physical resource are managed in a way that:

- Firstly, prioritises the health and wellbeing of water bodies and freshwater ecosystems;
- Then, the health and needs of people; and
- Then, the ability of people and communities to provide for their social, economic, and cultural wellbeing.

Of relevance to the Tararua Wind Farm Repowering Project is the potential for the construction activities to impact on freshwater resources (including wetlands) via the potential discharge of sediment to surface water bodies (namely sediment during construction) and impacts on natural inland wetlands and streams from the configuration of the roading network and the installation of culverts as necessary. Whilst the wind farm is being designed to avoid adverse effects on these values as far as practicable, the policy expectations of the NPSFM with respect to applying an effects management hierarchy and mitigation / compensation are being followed by Mercury. These mitigation / compensation measures will form part of the consent conditions and management plans proffered as part of the resource consent applications.

Overall, it is considered that with careful design and management of the construction of the Tararua Wind Farm Repowering Project the policy directives of the NPSFM will be achieved – particularly those that set specific instructions for how adverse effects on wetlands and streams which will be managed and prioritised.

#### National Environmental Standards for Freshwater

The NESF regulates activities that pose risks to the health of freshwater and freshwater ecosystems. Of particular relevance to the Tararua Wind Farm Repowering Project are the rules in the NESF relating to activities that may affect natural wetlands and streams. Resource consent will be required for activities associated with the wind farm construction, including earthworks, within, or within 100 m of natural wetlands and the establishment of culverts.

Mercury will apply the effects management hierarchy under the NPSFM to the construction activities requiring consent under the NESF to ensure that potential adverse effects on wetlands and streams within the project site are avoided as far as practicable (which will primarily be via the configuration of the wind farm layout and mitigation planting measures in and around other wetlands and streams on the site). These measures will ensure that any adverse effects are no more than minor.

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## Section 7: Eligibility

Will access to the fast-track process enable the project to be processed in a more timely and cost-efficient way than under normal processes?

Yes

Please explain your answer here:

Consideration of the Tararua Wind Farm Repowering Project under the fast-track provisions will likely result in a more timely and cost-efficient way to confirm the authorisations necessary for the proposed wind farm for the following key reasons:

#### Multi-agency authorisations

Authorisations are required under:

- Resource Management Act (resource consents);
- Wildlife Act (Wildlife Authorisations operations); and
- Heritage New Zealand Pouhere Taonga Act (archaeological authority).

Consideration of the requirements of these various authorisations through one process reduces the risks of delays (applications being considered sequentially) and provides greater visibility of process and clarity of outcomes.

Cross-jurisdictional considerations

Elements of the Tararua Repower are located within the jurisdiction of:

- Horizons Regional Council
- Tararua District Council
- Palmerston North City Council.

The fast-track provisions enable a process similar to holding of a joint hearing ensuring integrated consideration of matters across different jurisdictions.

Project Scale

The Tararua Wind Farm Repowering Project is a complex project that includes not just the installation of new wind farm technology but the decommissioning and removal of the existing wind turbines. If managed appropriately there is an ability to continue to operate part of the existing farm while constructing the new turbines to ensure the generation is not removed from the grid for an extended period of time while the site is being repowered. The wind farm currently supplies 15% of New Zealand's wind energy and it is critical that this generation is not lost to the system.

What is the impact referring this project will have on the efficient operation of the fast-track process?

Please write your answer here:

Tararua Wind Power Limited is a New Zealand Limited Company that is wholly owned by Mercury Wind Limited and is ultimately part of Mercury NZ Limited.

Mercury is one of New Zealand's largest electricity generators and retailers, providing energy and other services to homes, businesses and industrial consumers throughout New Zealand. Over the last 20 years, Mercury has invested significantly in geothermal power development, and now operates five geothermal power stations in the Taupō Volcanic Zone. In relation to wind generation, Mercury is the largest owner and operator of wind farms across New Zealand – which includes the Waipipi, Turitea, Tararua, Mahinerangi and Kaiwera Downs Wind Farms.

Mercury has an experienced team with years of wind farm development and consenting experience. Mercury builds assets to own and operate for the long term and as such sees its role as a long term member of the community. Applications from Mercury through the fast track process will be to a high standard, and presented with professionalism and a high level of experience, ensuring the efficient operation of the fast-track process.

In addition, the effects of establishing a wind farm are largely known. Expert assessments for the project are currently being advanced by Mercury and it is anticipated that, as a result, the wind farm will be ready to be considered under the fast-track process, the effects are capable of appropriate management by way of conditions recommended by an Expert Panel, and listing the project in Schedule 2A of the Bill will not adversely affect the efficiency of the fast-track process and efficient operation of the process.

Mercury is not aware of any consenting issues that would materially negatively impact on the efficient processing of an application for the Tararua Wind Farm Repowering Project in line with the timeframes and processes set out in the Bill.

Has the project been identified as a priority project in a:

Other

Please explain your answer here:

Tararua Wind Farm is nationally significant infrastructure. All government plans that forecast generation supply into the future assume the energy provided from the Tararua Wind Farm continues. This will only be the case if it is able to be repowered at end of life. If the site cannot be successfully repowered, New Zealand will move backwards against its renewable energy targets.

Accelerated electrification through renewable electricity generation represents New Zealand's best opportunity to meet our international and statutory climate change commitments, including as now set under the Climate Change Response Act 2002.

He Pou a Rangi (the Climate Change Commission) has recommended an economy wide energy target that 50% of all energy consumed, is to come from renewable sources by 2035.

The Commission's demonstration pathway for actions identified as being critical for meeting the 2050 targets, assumes 3.8TWh of currently committed generation projects being built between 2020 and 2024, followed by 1TWh per year of additional wind, solar and geothermal generation from the late 2020s.

The Commission recommends enabling a “fast paced and sustained build of low emission electricity generation and infrastructure by ensuring resource management processes, other national and local government instruments, and settings for transmission and distribution investment decisions, are aligned to the required pace for build”.

To achieve accelerated electrification at the necessary scale and pace, Transpower has estimated that New Zealand will need 20 new grid connected generation projects by 2035, and 30 by 2050. In other words, it would be necessary to build generation greater than New Zealand's largest windfarm every year from the late 2020's to supply an additional 1TWh to meet the 2050 electrification target.

Renewable energy is central to any reduction plan because, unlike other decarbonisation options, the technology is mature, cost-effective and has broad social acceptance, with well understood and mitigable environmental impacts.

Will the project deliver regionally or nationally significant infrastructure?

National significant infrastructure

Please explain your answer here:

Tararua Wind Farm is nationally significant infrastructure as identified in the National Policy Statement for Renewable Electricity Generation. All government plans that forecast generation supply into the future assume the energy provided from the Tararua Wind Farm continues. This will only be the case if it is able to be repowered at end of life.

Will the project:

contribute to a well-functioning urban environment

Please explain your answer here:

To the extent that the site will provide additional reliable and renewable electricity to the National Grid, it will add to the security of electricity supply to New Zealand's urban areas, and in turn, contribute to the overall function and resilience of these areas.

Will the project deliver significant economic benefits?

Yes

Please explain your answer here:

The New Zealand electricity system needs new generation plant to cater for growth, replace old plant, and reduce use of plant with higher cost characteristics. The Tararua Repower Project fits the current strategic priorities for renewable plant which reduce reliance on thermal plant that face rising costs for fuel and greenhouse gas emissions. It provides a range of benefits across the electricity system for Mercury and consumers. The capital expenditure to deliver the project is estimated at \$660 m with approximately \$260 m of this being spent within in New Zealand and locally. The Tararua Repowering Project will create a stream of economic benefits for the owners and the community for years to come. The sources of that benefit are:

- a) Enhanced profitability for those connected with the production of electricity, principally Mercury as plant operator but also landowners who receive rental from the occupation of the windfarm. These are private benefits for the parties concerned, and can be presumed to be beneficial as they are freely entered into;
- b) Benefits, likely of substantial value, from the displacement of thermal generation and avoidance of greenhouse gas emissions;
- c) Benefits for power consumers, through restraint on price rises over time because of less recourse to use of higher cost generation;
- d) Benefits to other aspects of the electricity system, in particular reducing transmission losses compared with some other options for expanding generation, and reducing the probability of power shortages; and
- e) It is estimated some 200 jobs will be provided for during peak of construction.

Will the project support primary industries, including aquaculture?

Yes

Please explain your answer here:

The Tararua Wind Farm currently co exists with the existing farm operations on the site and provides for the diversification of income streams for the landowners. The Tararua Wind Farm Repowering Project will continue this approach and assist the landowners with their primary farming activities on the site.

Will the project support development of natural resources, including minerals and petroleum?

Yes

Please explain your answer here:

The project will allow for the continuation and increase in the use of New Zealand world class wind resource to provide renewable energy to New Zealand. Allowing the repowering with new, larger turbines will allow more energy to be generated from the same project footprint, making it a more efficient use of the ridgeline.

Will the project support climate change mitigation, including the reduction or removal of greenhouse gas emissions?

Yes

Please explain your answer here:

By generating an estimated 800 GWh of renewable electricity per year once repowered, the Tararua Wind Farm Repowering Project will act to displace thermal generation and avoid associated greenhouse gas emissions. If that generation was from coal, the equivalent emissions would be in excess of 750,000 tonnes CO<sub>2</sub> per year; if from gas, the equivalent emissions would be in excess of 350,000 tonnes CO<sub>2</sub> per year. A significant expansion in renewable electricity is required for New Zealand to shift key sectors away from fossil fuels in order to meet our domestic and international emissions reduction commitments. Renewable electricity generation is central to that outcome because, unlike other decarbonisation options, the technology is mature, cost-effective and has broad social acceptance, with well understood and mitigable environmental impacts. For New Zealand to meet its Climate Change Response Act 2002 2050 targets and Paris Agreement commitments, development of renewable generation is crucial to our decarbonisation pathway. The renewable electrification of transport and process heat is expected to be the most significant contributor to New Zealand achieving its 2050 net zero carbon target – delivering an estimated 70% of the gross emissions reductions required to achieve the 2050 target (some 22.2 Mt CO<sub>2</sub> -e pa).

Will the project support adaptation, resilience, and recovery from natural hazards?

Yes

Please explain your answer here:

To the extent that electricity generated by the Tararua Wind Farm Repowering Project improves security of supply through fuel diversification, the project will add to local and national resilience and recovery in the event of a major natural hazard event.

Will the project address significant environmental issues?

Yes

Please explain your answer here:

Climate change is a significant environmental issue, the project will help address this issue by contributing to New Zealand's renewable energy targets and its decarbonisation journey.

Is the project consistent with local or regional planning documents, including spatial strategies?

Yes

Please explain your answer here:

The need for new electricity generation infrastructure, and where it should be located, is not addressed in any regional or district wide spatial strategies in the Horizons Region. Decisions regarding the location and form of this infrastructure are effectively left to electricity industry participants to consider for themselves, recognising that locating new infrastructure requires consideration of a complex set of factors (including access to, and quality of, the resource, access to transmission, constructability and roading connections). The resource consenting process also provides a framework for considering the appropriateness of a site for new electricity infrastructure.

The project site consists of land zoned for rural purposes in the Palmerston North City and Tararua District Plans. The site is not subject to any biodiversity overlays in these plans and is setback a suitable distance from adjacent dwellings. The Palmerston North City and Tararua District Plans recognise that renewable electricity generation activities have significant positive effects on the wider environment and that such activities may need to be located in the rural environment. There is also recognition in the Palmerston North City District Plan of the need for wind farms to repower over time. The District Plans also recognise that setting wind farms an appropriate distance from existing dwellings may be necessary in order to maintain the amenity of these dwellings. The repowering project is considered to align with these expectations given that less turbines will be installed and their will be uniformity across the landscape (reducing visual clutter).

In light of the above, and on the basis that the potential adverse effects of the project on the surrounding environment are being appropriately managed, it is considered that the Tararua Wind Farm Repowering Project will be consistent with the objectives and policies of the Palmerston North City and Tararua District Plans.

With respect to the Horizons One Plan (containing the Regional Policy Statement and the Regional Plan provisions), it provides direction on the management of infrastructure that is of 'regional or national importance'. Policy EIT-P3 of the Regional Policy Statement directs that decision makers considering infrastructure activities of regional or national importance that may result in adverse effects on the environment that they must allow minor adverse effects arising from the establishment of new infrastructure.

With respect to more than minor adverse effects arising from the establishment of such new infrastructure, decision makers are directed to take into account:

- The need for the infrastructure;
- Any functional, operational, or technical constraints that require the infrastructure to be located or designed in the manner proposed;
- Whether there are any reasonably practicable alternative locations or designs; and
- Whether any more than minor adverse effects that cannot be adequately avoided remedied or mitigated can be appropriately offset, including through the use of financial contributions.

As noted in the section of the potential effects of the Tararua Wind Farm Repowering Project, Mercury is preparing its application to include ecological mitigation / compensation where necessary in order to satisfy the likes of Policy EIT-P3 of the Horizons One Plan. Given this, it is considered that the project will be consistent with the Horizons One Plan also.

Anything else?

Please write your answer here:

Mercury's view is that the Tararua Wind Farm Repowering project is exactly the type of project that the fast-track process has been designed to enable. Amongst other factors, the project will secure the generation currently been delivered on from this regionally and nationally significant infrastructure. The repower will also allow an increase in generation supporting the development of natural resources (wind), climate change mitigation and addressing significant environmental issues. It is consistent with local and regional planning documents and doesn't include any activity which would make it ineligible.

Mercury requests that the Tararua Wind Farm Repowering project is listed under Schedule 2A. If the project is unsuccessful for Schedule 2A, Mercury requests that it is considered for Schedule 2B.

Does the project includes an activity which would make it ineligible?

No

If yes, please explain:

No. Mercury confirms that the Tararua Wind Farm Repowering Project does not involve any of the activities listed in Clause 18(a)-(l) of the Fast-track Approvals Bill.

Section 8: Climate change and natural hazards

Will the project be affected by climate change and natural hazards?

No

If yes, please explain:

The primary risks to the Tararua Wind Farm Repowering Project from climate change and natural hazards are from extreme rainfall events and seismic events. The project site is not subject to any other natural hazard overlays.

Mercury will ensure that any potential risks are managed by:

- Undertaking robust design and site management, including permitting, operation management, monitoring and reporting (and the incorporation of contingency in sediment control design etc);
- Ensuring turbines and associated infrastructure are appropriately located to ensure they are away from possible estimate zone of tectonic ground surface deformation;
- Conducting regular auditing of conformance with internal standard and consent requirements; and
- Independent review by third party experts.

With respect to climate change, it is noted that the project site is a Class 1 wind resource and expected changes in weather patterns over the life of the project are not forecast to impact on the viability or efficiency of the project.

Therefore, it is considered the project is not subject to significant risks associated with climate change and natural hazards.

## Section 9: Track record

Please add a summary of all compliance and/or enforcement actions taken against the applicant by any entity with enforcement powers under the Acts referred to in the Bill, and the outcome of those actions.

Please write your answer here:

Nil

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## Declaration

Do you acknowledge your submission will be published on environment.govt.nz if required

Yes

By typing your name in the field below you are electronically signing this application form and certifying the information given in this application is true and correct.

Please write your name here:

Ryan Piddington

Important notes