PART A

CONTACT ENERGY LIMITED

Southland Wind Farm

Overarching Substantive Application Document

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1. INTRODUCTION

Contact Energy Limited ("**Contact**" or "**the Applicant**") is applying under the Fast-track Approvals Act 2024 ("**the FTAA**" or "**the Act**") for the approvals necessary to construct, operate and maintain a wind farm (and associated infrastructure) in Slopedown, Southland ("**Southland Wind Farm**" or "**Project**").

The Minister for Infrastructure has decided that the Project is eligible to be referred to an expert consenting panel under the FTAA.[1] Accordingly, this substantive application has been prepared in accordance with the requirements of sections 43 and 44 of the FTAA.

In response to current market conditions and a forecast period of sustained increases in electricity demand over the next few decades, Contact is urgently pursuing the development of a wind farm, comprising up to 55 wind turbines, located on around 58km^2 of forestry and farmland, approximately 50km east of Invercargill, 30km southeast of Gore, and 12km east of Wyndham in the Southland District and Southland Region.

The full Project description is included in Section 7 of this Part A. To complement that Project description, a video overview of the Project has been prepared by professional landscape architecture consultancy *Wayfinder*. This is available on Contact's Southland Wind Farm website and at the following link: https://youtu.be/s6buPYExl0w.

The Southland Wind Farm is likely to generate approximately 1,200GWh of renewable electricity annually, about twice the energy demands of the nearby Fonterra Edendale dairy manufacturing plant, or enough electricity to power 150,000 households. The Project will contribute strongly towards achieving the New Zealand Government's commitment to double the overall volume of electricity from renewable sources by 2050 and transition to a low-emissions future. As such, the Project will provide significant national and regional benefits.

Contact is applying for all necessary approvals to authorise the Southland Wind Farm Project. The required approvals include:

> Resource consents that would otherwise be applied for under the Resource Management Act 1991 ("**RMA**");

> Concessions that would otherwise be applied for under the Conservation Act 1987 ("**Conservation Act**");

[1] The decision is appended to this document.

- Wildlife approvals that would otherwise be applied for under the Wildlife Act 1953 ("**Wildlife Act**");
- An archaeological authority that would otherwise be applied for under the Heritage New Zealand Pouhere Taonga Act 2014 ("**HNZPT Act**"); and
- Approvals that would otherwise be applied for under the Freshwater Fisheries Regulations 1983 ("**Fisheries Regulations**").

Parts B to F of the overall application include a detailed analysis of the Project in respect of the approvals sought; Part B is the substantive application for the RMA approvals and is the most comprehensive application document, akin to a traditional RMA assessment of effects on the environment ("**AEE**").

This Part A does not replicate that detail (or the detail in the expert technical reports included in **Part H**), but instead provides an overview of the application and the rationale for the Project.

2. THE APPLICANT - CONTACT ENERGY LIMITED

Contact is the second largest electricity generator/retailer in New Zealand, with a flexible and largely renewable portfolio of electricity generation assets. Contact is listed on the New Zealand (NZX) and Australian (ASX) Stock Exchanges and has approximately 58,000 shareholders.

Contact commenced operations in early 1996 when it acquired a portfolio of electricity generation assets from the state-owned electricity generator (Electricity Corporation of New Zealand). Contact operates 12 generating stations across the country, and has recently acquired Manawa Energy and its large renewables portfolio. Contact generally produces 80-85% of its electricity from renewable hydro and geothermal resources, and is on track to be 95% renewable by 2027. This includes the nationally important 784MW Clutha Hydro Scheme, and the Tauhara, Te Mihi, Te Huka, Poihipi, Wairākei and Ohaaki geothermal power stations in the Taupō Volcanic Zone with a combined capacity of over 600MW.

Contact is strongly committed to contributing to New Zealand's achievement of its climate change targets and assisting the New Zealand Government in meeting its climate change goals through the development, construction, maintenance, and operation of renewable electricity infrastructure. Contact has committed to net-zero generation by 2035, and to that end has closed over 1000MW of gas-fired power stations since 2010 and reduced emissions by 70% in the last decade. In the past four years, Contact has invested more than $2.3 billion in delivering new renewable generation, and Contact has $1.7 billion of investment in clean energy currently underway or near completion.

3. PROJECT RATIONALE

New renewable electricity generation is a high priority for New Zealand and for the Government

The world needs immediate action to reduce carbon emissions to stave off the potentially catastrophic effects of human-induced climate change.[2] New Zealand is committed to doing its part and has committed to international targets, including reducing net greenhouse gas emissions to 50% below 2005 levels by 2030, and to 'net zero' by 2050.[3]

Reducing New Zealand's reliance on fossil fuels is critical to meeting these targets. To do so, there is a need to accelerate the rollout of renewable electricity generation and infrastructure for electrification.[4] This Project, and many more like it, are essential to ensure affordable, reliable, and clean electricity supply in the short-, medium-, and long-terms, due to declining natural gas production, rising wholesale electricity prices and risks of supply constraints.[5] Over the long term, the Project will remain vital given the growing demand for electricity as fossil fuels are phased out and the economy decarbonises.[6]

Central government strategic policy reflects that increasing capacity for renewable electricity generation is a high priority for New Zealand:[7]

> The Ministry for Business, Innovation and Employment's ("**MBIE**") latest electricity demand and generation scenario suggests that electricity generation will need to grow between 35.3 to 82 percent by 2050 to meet future demand from electrification. The increased demand will be driven by industry switching from fossil fuel use to electricity (such as for space and process heating) in the short-term, and the electrification of the transport fleet through increased uptake of electric vehicles, particularly from the late 2030s.[8]

---

2 Chapter 3: Human Influence on the Climate System | Climate Change 2021: The Physical Science Basis.

3 Paris Agreement | Ministry for the Environment.

4 Energy and industry | Ministry for the Environment.

5 Gas production forecast to fall below demand | Ministry of Business, Innovation & Employment.

6 https://www.mbie.govt.nz/assets/electricity-demand-and-generation-scenarios-report-2024.pdf.

7 *Meridian Energy Ltd v Tararua District Council* [2025] NZEnvC 44 at [380].

8 Electricity Demand and Generation Scenarios: Results summary July 2024

> A significant increase in renewable electricity generation is required to meet future demand. The MBIE report states that:[9]

> *To meet future electricity demand, and to replace existing plants scheduled for retirement, 9.4GW of new capacity will be required by 2050 in the Reference scenario. As at the end of 2022, MBIE statistics show 9.85 GW of installed capacity, so this represents a gross increase of 95 per cent.*

> MBIE observes that the least-cost solution to meet new demand is onshore wind and solar generation.[10]

> New Zealand has committed to reducing net greenhouse gas emissions to 50% below 2005 levels by 2030.[11]

> In December 2024, the Government published the second Emissions Reduction Plan, which sets out the Government's plan to meet the second emissions budget for the period 2026-2030. Delivering Electrify NZ to help achieve the goal of doubling renewable energy by 2050 is one of the key policies in the Plan.[12]

The Southland Wind Farm would make a significant contribution to increasing capacity for renewable electricity generation. The generation capacity for the Project is intended to be between approximately 230-380MW, depending on the turbine model, with a generation output in the range of 850-1,400GWh/annum.[13]

The Project will also support the emission reduction targets, including by 'breaking even' in carbon terms within only a few years.[14] As explained further in the report included in **Part H** of this application by Concept Consulting (2025), if the Project does not proceed, costs to

---

[9] At page 39. The 'reference scenario' is explained as follows (on pp8-9): "*The Reference scenario is our baseline scenario and considers both current trends and anticipated changes. It is the scenario against which the other scenarios are compared. We assume that economic, technological, and policy trends continue at the pace experienced in recent years. We account for currently implemented and upcoming policies and assume further electrification uptake*." Other scenarios modelled by MBIE (requiring even greater renewable electricity generation) include the 'environmental' scenario, where climate change-related policies require greater and faster reductions in carbon emissions.

[10] At page 2.

[11] Paris Agreement | Ministry for the Environment

[12] New-Zealands-second-emissions-reduction-plan-202630.pdf

[13] This range reflects the generation capacity range of different turbine types. The most likely output is 1200GWh/annum, as noted earlier.

[14] By reference to a recent independent study focusing on the Harapaki wind farm. Isabella Pimentel Pincelli, Jim Hinkley & Alan Brent (14 May 2024): Developing onshore wind farms in Aotearoa New Zealand: carbon and energy footprints, Journal of the Royal Society of New Zealand.

electricity consumers will likely increase by between $1.2 and $2.6 billion and emissions will likely increase by 0.6 to 1.5 megatonnes of carbon dioxide equivalent (MtCO2e).

The Project's location is highly favourable for a wind farm

Significant new renewable electricity generation capacity is needed to power New Zealand and to address pressing environmental risks associated with climate change. As such, the question is not **whether** New Zealand should develop large-scale wind farms, but **where** they should be situated.

The Project Site is an appropriate location for a wind farm for many reasons, including:

> The high quality of the wind resource there;

> Its proximity to existing high voltage transmission infrastructure and in a region with increasing electricity demand;

> That the relevant landowners are willing to host the wind farm (Contact cannot compulsorily acquire land for this purpose);

> That the existing land uses on the Project Site (farming and plantation forestry) are well suited to co-locating a wind farm;

> There are no significant environmental constraints identified in the relevant statutory planning documents; and

> The Project's environmental effects are limited in their extent, can be appropriately managed, and are anticipated by the plans.

These matters are addressed briefly in turn below.

Wind resource

The wind resource at the Project Site is very attractive, with strong, consistent winds. Due to the quality of the wind resource at the site, Contact expects the wind farm to be generating *some* electricity for about 92% of the time:

> In assessing the suitability of the wind resource at the Project Site Contact considered wind characteristics including mean wind speed, inflow angle, turbulence intensity and wind shear;

> The elevated site, exposure to the prevailing westerly winds, and the low occurrence of extreme wind speeds are all favourable for the installation of a wind farm at this location;

- The site allows wind turbines to be located at elevations from approximately 380m to 630m above sea level. Wind speeds increase with height above sea level at a rate of approximately 7% per 100m. Generally, the greater the elevation of the site, the greater the average wind speed, and therefore, energy output from a wind turbine; and
- Wind monitoring at the site using a fixed 80m mast, two mobile wind lidar units and a 30-year reference data set has reinforced the quality of the wind resource at this location.

Proximity to existing infrastructure

The Project Site is well located to the port, roads, transmission lines, and other infrastructure needed to construct and operate a wind farm:

- In the New Zealand context, the port-to-site route is reasonably straightforward. The route from South Port in Bluff to the site has largely been verified by the transport of wind turbine components to the Kaiwera Downs wind farm project, with the larger turbine components being considered for the Project requiring very few public road modifications; and
- There is a 220 kV Transpower transmission line in close proximity of the Project. That line (the North Makarewa to Three Mile Hill line) is currently one of the most underused high-voltage lines in the region and has capacity to take electricity from a new large wind farm, even taking into account the Kaiwera Downs Stage 2 wind farm, currently in construction and which will connect to this line.

Proximity to increased electricity demand

As noted above, a significant increase in renewable electricity generation is required to meet New Zealand's future electricity demands. A recent discussion document issued by Transpower[15] addressing the urgency of increasing renewable electricity generation activities to consenting authorities (including for projects under the FTAA) outlined that there is a tightening of the balance between supply and demand of electricity due to a faster than expected decline in gas availability for electricity generation.[16]

Transpower has forecasted that New Zealand is expected to dip below one of its key security standards (the New Zealand Winter Energy Margin) as early as 2026. This is a key measure of

[15] Building the renewable generation we need to deliver New Zealand's energy future. A discussion document for consenting authorities, Transpower, July 2025.

[16] OMV, which operates the Maui gas field, has confirmed that the field is approaching the end of its productive life: Will Maui gas field close next year? - NZ Herald

whether New Zealand has enough energy to power the country during winter and is expected to remain tight over the next five years, before deteriorating over the remainder of the decade. This analysis is based on the current consented generation that is committed to being delivered and shows a clear need for an increase in renewable electricity generation in New Zealand.

The Southland region is a particularly good location for new renewables because it is generally a net importer of electricity, as illustrated in the following table showing the volume of electricity consumed within the Southland region as against the volume of electricity generated within the Southland region:

Table 1: Volume of electricity demand and generation within the Southland Region.

Year	Electricity Demand (GWh)	Electricity Generation (GWh)
2020	6,146	5,414
2021	6,115	5,486
2022	6,189	4,359
2023	6,211	4,665
2024	5,745	5,299

Moreover, demand for electricity is forecast to grow in Southland as core industries reduce their reliance on fossil fuels and convert process heat and other energy needs to electricity.[17] Transpower has identified that the Otago-Southland region has many industries with considerable potential to decarbonise, which would increase electricity demand:[18]

> "***In contrast to most regions, Otago-Southland has many industries with considerable potential for decarbonising their businesses***. *Decarbonising industry can increase electricity demand, either by converting directly to electric heating or converting to biomass, which is also often paired with partially electrifying processes (such as heat pumps for low temperature heat). Funding from [the Government Initiative to Decarbonise Industry] has*

[17] Murihiku Southland Electrification Development Plan | Transpower

[18] Transpower's Transmission Planning Report 2023, page 364; Transmission Planning Report 2023

generated interest in decarbonising industry in Invercargill; this would increase the load at the Invercargill grid exit point.

The Otago-Southland region is also attracting interest from new electricity-dependent enterprises such as data centres and hydrogen production. Otago-Southland is attractive due to access to renewable energy and a favourable climate (for cooling)" (emphasis added).

Transpower also forecasts peak demand from the region (excluding the aluminium smelter at Tiwai Point) to grow from 556 MW in 2023 to 900 MW by 2038.[19]

Limited environmental / planning constraints, and manageable effects

The location chosen for the Project is particularly well suited to enabling a wind farm with manageable effects. There are limited environmental or planning constraints:

- The Project Site is not in a remote area providing a wilderness experience, with high conservation or natural values, and it is proximate to the necessary infrastructure required for a wind farm;
- The Project Site is not located in an area identified as an outstanding natural feature or landscape in any of the applicable statutory plans or policy documents;
- The distance between turbines and people's dwellings is unusually large for a wind farm in New Zealand. The closest dwelling is 2.3km from the nearest turbine,[20] and the closest town is Wyndham (with 579 inhabitants), located approximately 12km to the west. In contrast:[21]
    - For the Mount Munro Wind Farm (recently granted consents by the Environment Court), 16 dwellings within 2km of the nearest turbine had Moderate-High, or High, potential visual effects. The closest town, Eketāhuna (approximately 500 inhabitants), is located 5km to the south.[22]
    - For the 'West Wind' Wind Farm in Wellington, eight dwellings were closer than 1km from a turbine,[23] with more than 100 within the 1-2km range.

---

19 At 363.

20 There are only 8 dwellings within 3km of any turbine.

21 Acknowledging that there are factual differences between the project, including the size and number of turbines.

22 *Meridian Energy Ltd v Tararua District Council* [2025] NZEnvC 44 at [2] and [232] - [233]. Mount Munro Wind Farm

23 *Meridian Energy Ltd v Wellington City Council* EnvC Wellington W031/07, 14 May 2007 at [113].

- For the Motorimu Wind Farm, at least 45 dwellings were within 2km of a turbine (three within 1km) and about 191 dwellings were within 5km. The Linton Military Camp near Palmerston North is located approximately 7.5km to the northwest.[24]
- The Turitea Wind Farm is located approximately 10km from the urban area of Palmerston North, with approximately 87,000 inhabitants.[25]
- The Te Apiti Wind Farm is located approximately 2.8km west of Ashhurst (with approximately 3,200 inhabitants).[26]

> The increased distance from most dwellings and population centres helps minimise potential effects on residents, including from construction noise and dust, operational noise, and 'shadow flicker' effects. Distance can also be relevant to changes in visual amenity, albeit that a change in view does not, of itself, constitute an adverse visual effect given the various subjective factors in play.

It is inevitable that a wind farm will have adverse environmental effects to some degree. The legal analysis appended to this **Part A** provides guidance on how the panel must consider those effects under the FTAA. The well-suited location of the Project Site, coupled with the extensive refinement work and engagement by Contact to date, has ensured that the adverse effects are limited. As described in detail in Sections 5 and 6 of **Part B** of the application documents, Contact has carefully managed the adverse effects of the Project such that:

> Te Rūnanga o Awarua, Hokonui Rūnanga, Te Rūnanga O Oraka Aparima and Waihōpai Rūnanga ("**Ngāi Tahu ki Murihiku**") and Te Rūnanga o Ngāi Tahu ("**Te Rūnanga**") consider that, should the consents be granted, the cultural and te taiao effects relevant to them have been appropriately avoided, remedied, mitigated, offset and compensated.

> As a result of a comprehensive offsetting and compensation package, the Project will deliver significant positive ecological/biodiversity benefits to the Wind Farm Site and the local area.

> During the previous consenting process, the Department of Conservation ("**DoC**") and Contact reached agreement as to the proposed resource consent conditions – and with further minor refinements, those conditions have been carried through to this process.

---

[24] *Motorimu Wind Farm Ltd v Palmerston North City Council* EnvC Wellington W067/08, 26 September 2008 at [18], [22] and [220] - [221].

[25] Board-of-inquiry-decision-and-final-report-turitea-wind-farm-proposal.pdf

[26] *Meridian Energy Ltd v Wellington City Council* EnvC Wellington W031/07, 14 May 2007 at [41].

> The landscape, visual, and natural character effects of the Project are acceptable and appropriately managed. While the subjective views of some residents may differ from the expert opinions, the Project's adverse effects in this regard are less than those of many other wind farm projects.

Are other locations preferable?

During the previous consenting process there was some suggestion that there were other well-suited locations in the area which may be available and preferable, with lesser adverse environmental effects.

Contact has not identified any preferable and available site. The alternatives assessment carried out by Contact is explained in Section 7 of **Part B** to these application documents; Contact is urgently seeking consents for the Southland Wind Farm in this location, and would not be doing so if better options were available.

Further work has been carried out in support of the Project following the previous consenting process

As noted above, an application for resource consents for the Project has previously been considered – and declined – by an expert consenting panel under the COVID-19 Recovery (Fast-track Consenting) Act 2020 ("**Covid Fast-track Act**").

Contact has reflected carefully on the decision of that panel. Contact strongly disagrees with the panel's conclusions, for numerous reasons summarised below (and outlined in its appeal to the High Court, which will now be withdrawn in order to proceed with this application). However, Contact has carefully scrutinised the panel's decision and carried out further work to address the key points of concern that the panel highlighted. That work, summarised below, has provided further certainty in respect of the actual and potential effects of the Project, and how those effects will be managed.

Effects on the ecological values of the Jedburgh Plateau

An overall theme of the Covid Fast-track Act panel's decision was its concern about the potential effects of the Project on the Jedburgh Plateau. Those concerns were, to a large extent, based on the views expressed by one of the ecology peer reviewers it appointed to consider the application. They included:

> A lack of confidence in the accuracy of the wetland and vegetation mapping at the Jedburgh Plateau, and subsequently of the assessment of effects on those habitats;

- A concern that habitats – including wetlands and streams in particular – at the Jedburgh Plateau but outside the Project footprint would be adversely affected by changes in stormwater flows and drainage patterns; and
- A related concern that residual effects on the wetlands and terrestrial habitats at the Jedburgh Plateau could not properly be offset or compensated for, because the effects are beyond the 'limits of offsetting'.

Impacts on wetlands and indigenous vegetation have been ‘front of mind’ for Contact and its expert advisors through the development of the Project. Significant effort was put into mapping habitat types, considering potential effects, and making refinements to the Project design to reduce those effects.

Throughout the Covid Fast-track Act process, Contact's expert consultant ecologists (Wildland Consultants (“**Wildlands**”), led by Nick Goldwater and Dr Kelvin Lloyd) sought to explain and give the panel comfort regarding the overall accuracy of their wetland and vegetation mapping, and their assessment of effects on wetlands and vegetation. Contact's final proposed conditions included requirements that:

- Following detailed design, further mapping vegetation of (and adjacent to) the Project footprint be carried out to confirm the direct effects of the Project;
- Consideration then be given to any modifications that could be made to the Project footprint to avoid or minimise effects on important habitat types; and
- The final direct impacts comply with the limits on clearance (or 'caps') specified in the conditions for each relevant habitat / vegetation type.

Since the Covid Fast-track Act decision, Wildlands have carried out additional 'ground-truthing' of their mapping work, focussing on the Jedburgh Plateau. Wildlands have also made use of very high-resolution aerial photography, specifically commissioned for this purpose, in order to inform that mapping and analysis.

That additional work has resulted in only minor changes to the vegetation mapping on the Jedburgh Plateau, which confirms the overall accuracy of the previous mapping. That further work allows Contact to be even more confident in the accuracy of the vegetation mapping, especially on the Jedburgh Plateau.

That said, Contact has retained the conditions requiring that further mapping of the Project footprint and adjacent areas be carried out once detailed design is completed, and that further consideration then be given to Project footprint changes to avoid or minimise effects on key habitats.

The ‘caps’ on clearance of key habitat / vegetation types have also been retained in the proposed conditions, including a 2.5ha cap on clearance of wetlands. The caps provide both a further safeguard in respect of the accuracy of the mapping that has been carried out, and certainty in respect of the overall effect of the Project on habitats, including on the offsetting and compensation measures.

Contact has also carried out further work has since the Covid Fast-track Act decision in respect of potential effects on wetland habitats at the Jedburgh Plateau that are outside the direct Project footprint. Contact engaged Williamson Water & Land Advisory to prepare a hydrological design report (included as Report 10 in **Part H**) assessing flow conditions in specific areas adjacent to wetlands, and recommending engineering measures to minimise impacts on wetlands from the Project works. A conceptual design has been prepared, which includes a combination of culverts and bunds to maintain hydrological connectivity and prevent the loss of water. Based on the preliminary design as described in this consent application, Williamson Water & Land Advisory anticipates only a very small area (0.09ha) of wetland beyond that directly impacted by the Project footprint will be adversely affected in hydrological terms. This hydrological model will be revised and updated as part of detailed design to inform the most appropriate design of culverts and bunds to mitigate the effects on wetlands on the Jedburgh Plateau.

Mr Goldwater and Dr Lloyd have updated their reporting on terrestrial and wetland ecological values and effects in light of the additional work that has been carried out; their assessment is Report 5 in **Part H**. They conclude that effects on ecological values, including those of the Jedburgh Plateau, will be appropriately addressed through the comprehensive effects management scheme that they have recommended.

That effects management scheme includes offsetting and compensation measures to address residual effects. Mr Goldwater and Dr Lloyd are firmly of the view that residual effects on the Jedburgh Plateau can appropriately be offset and compensated for, and in particular that the habitats present are not beyond the ‘limits of offsetting’ in terms of their 'irreplaceability’ or ‘vulnerability’.

Contact also engaged Roger MacGibbon (of Tonkin + Taylor) to carry out an independent expert review of terrestrial and wetland ecology matters, with a particular focus on the Jedburgh Plateau (Report 7 in **Part H**). Mr MacGibbon endorses the methodology followed by Wildlands, the conclusions reached by Mr Goldwater and Dr Lloyd in respect of effects, and the proposed effects management measures. He specifically records his view that the wetlands on the Jedburgh Plateau are neither irreplaceable or vulnerable; his opinion is that “*the offset and compensation measures proposed will fully and appropriately address the ecological effects and can be expected to result in an overall net benefit to biodiversity*”.

Effects of surplus fill disposal

As in the previous consenting process, Contact's proposed conditions place strict parameters on the placement of excess fill from earthworks around the Project Site (such as avoiding steep slopes, high-value vegetation, and other environmental constraints).

Since the previous consenting process, an iterative process of identifying suitable fill disposal sites has been undertaken, through consultation between Riley and Contact's consultant ecologists. Indicative fill disposal sites are identified in **Figure Project Description-7 (Part G)**.

The final location of fill disposal sites will be determined through detailed design, and subject to the condition parameters. However, fill disposal on the Jedburgh Plateau will be restricted to the eight currently identified sites, providing additional certainty in respect of effects of the Project on the Jedburgh Plateau.

Potential effects on migratory birds, lizards and invertebrates

Additional surveys focussing on birds, lizards and invertebrates have been carried out since the Covid Fast-track Act decision. That additional follows on from discussions amongst the experts during the previous process, and to a large extent was work that Contact and Wildlands were always intending to undertake prior to construction of the Project.

The effects analysis and effects management measures have been updated in light of those additional surveys. The survey results generally reinforced what was already understood about fauna at the Project Site, and the relatively limited refinements to the effects management measures reflect that.

In respect of avifauna in particular, a collision risk model has now been developed for the Project by Bluewattle Ecology based on the results of the surveys that have been carried out (a report on the modelling work is appended to the terrestrial and wetland ecology report (Appendix 6 of Report 5) in **Part H**). The model indicates that the Project will generally pose a low collision risk for avifauna, and that the species-specific collision 'triggers' are unlikely to be met or exceeded.

Together, this additional survey and modelling work provides further certainty that the likely effects of the Project on indigenous fauna are well understood and will be appropriately addressed.

Landscape and visual effects

In relation to the Project's effects on landscape values, a number of the previous Panel's concerns overlapped with issues regarding wetland and other ecological effects, so the

additional ecological work and refinements noted above have helped to clarify and address landscape issues too.

More generally, Contact has asked its expert landscape advisors to reassess the merits of the Project. Brad Coombs of Isthmus, a highly experienced expert, remains of the firm view that the Slopedown 'cuesta' landform is of a scale that can comfortably accommodate a large wind farm, and that the proposed turbines – which will of course be prominent and visible to people in the area – are nonetheless appropriately sited.

Contact has also engaged a second expert, Shannon Bray, not to peer review Mr Coombs' work but instead to undertake his own primary assessment of the Project's landscape, visual, and natural character effects. Mr Bray is likewise very experienced in assessing wind farms and similar renewable energy proposals and has concluded that this Project, on this site, is fundamentally sound, and that its effects are comparatively lower than many other proposals he has studied.

Neither Mr Coombs nor Mr Bray considers that the Project is in a location that may one day be identified by Southland District Council (through a plan change) as an Outstanding Natural Feature ("**ONF**"), which was another issue that arose during the last process. Even if a relevant ONF were identified in the future, Contact's experts consider the Project's effects on landscape values to be acceptable in any event.

Previous refinements to the Project and proposed conditions

The further analysis carried out since the Covid Fast-track decision is additional to the various modifications that Contact made to the Project and effects management measures through the last process to address concerns raised. Those included:

- Refinements to the indicative Project design, and the introduction of the 'caps' on wetland and vegetation clearance;
- Additions to the already extensive ecological offset and compensation package were agreed with DoC, including in particular that Contact will fund intensive pest control over a 10,000ha area in the Beresford Range for the life of the Project to compensate for the residual potential effects on long-tailed bats that remain despite the nine moderate risk turbines being subject to operational curtailment. The overall effects management scheme was agreed with DoC during the previous consenting process, and will have widespread benefits, including in biodiversity, cultural and landscape terms;
- A proposed suite of measures to address adverse cultural effects identified by mana whenua was developed and agreed between Contact and Papatipu Rūnaka ki Murihiku;

- Provision in the proposed conditions for a substantial community fund to support community activities and initiatives in response to clear requests arising from community engagement and comments received;
- The turbine lighting required by the Civil Aviation Authority for aircraft safety purposes was reduced (following an appeal made by Contact) from:
    - Medium intensity red lights on or above the top of the nacelle, as well as an array of three intermediate low intensity lights at around half the nacelle height on all **55** turbines; to
    - Medium intensity red lights on or above the top of the nacelle of only **16** turbines, with no intermediate low intensity lights required;
- The reduction from three different transmission line options and two different grid injection point options to a single and final transmission line and grid injection point option; and
- The removal of quarrying activities from the scope of the application.

All of these refinements are still reflected in the Project as now proposed.

4. PURPOSE OF THE FTAA

Contact's expert advisors remain of the strong view that the Project's adverse effects are acceptable, particularly in consideration of the comprehensive suite of measures Contact has committed to in order to address the residual effects on the environment, and the Project is clearly supported by the relevant statutory instruments. In this regard, Contact also draws strong support from the agreements reached with mana whenua and with DoC regarding the Project.

It follows that Contact does not accept the findings of the previous expert consenting panel that considered the Project, as discussed in the appended legal analysis document. As such, Contact considers there to be compelling grounds for the Project to be approved, even if it were considered under the RMA and other environmental legislation relevant to the approvals now sought.

Those grounds are strengthened even further under the FTAA regime, as discussed below.

The Purpose of the FTAA is:

> *'To facilitate the delivery of infrastructure and development projects with significant regional and national benefits.'*

The rationale for the Project is discussed above. In summary, the Project provides a major opportunity to meet the unprecedented electricity demand growth predicted and support the Government's commitment to double renewable energy by 2050 and transition to a low-emissions future. The Project:

> Will produce sufficient electricity to power up to 150,000 households;

> Will break even in carbon terms within a short timeframe;

> Will provide a significant emissions reduction; and

> Will reduce costs to consumers.

Enabling and facilitating the delivery of the Southland Wind Farm Project would demonstrably achieve the purpose of the FTAA, because the Project will deliver significant benefits to the Southland District, Southland Region and New Zealand more broadly. The Project will generate a nationally significant amount of renewable electricity which will help to decarbonise the economy by helping lower wholesale power prices and enabling displacement of fossil fuel-derived energy uses which cause negative environmental effects. The Project will also have significant employment and other economic benefits for local communities and New Zealand more broadly. The Project is clearly an infrastructure project with significant national and regional benefits and is therefore strongly aligned with the purpose of the FTAA.

Detailed analysis to help inform the panel's consideration of the purpose of the FTAA is provided in the legal analysis document appended to this Part A. For completeness, it is important to note that under the FTAA:

> There is no gateway test for a non-complying activity. Section 104D of the RMA is explicitly disapplied. The panel could not decline the application on the basis of a failure to meet the s 104D gateway.[27]

> The limited grounds for decline under the FTAA provide a tolerance for adverse effects, provided they are not out of proportion with the benefits. The panel could not decline the application solely on the basis of a failure to meet an avoidance policy.

[27] As explained in Part B of this application, the Project is in any event consistent with the relevant objectives and policies of the statutory planning instruments.

5. APPROACH TO ENGAGEMENT WITH MANA WHENUA, COMMUNITY, STAKEHOLDERS AND INTERESTED PARTIES

Since the end of 2022, Contact has sought to engage widely, proactively, transparently, and consistently with local communities and stakeholders.[28] The ongoing engagement and strong relationship with Papatipu Rūnaka ki Murihiku, including Te Rūnanga o Ngāi Tahu, and Te Ao Marama Inc is summarised in **Part B**. Contact appreciated the constructive feedback it received through the previous consenting process, and the ongoing engagement with this FTAA process, which has directly helped to shape the development of this Project and the management of effects, including the conditions.

The enhancements made to the Project as a result of the feedback provided to Contact through its engagement processes are wide-reaching and significant, as discussed above in respect of the project rationale.

In this new FTAA process Contact has undertaken the required mandatory consultation in accordance with section 11 of the FTAA. More broadly, Contract has continued its engagement with key stakeholders while awaiting the Minister's decision on the referral application, and in the lead-up to lodging this substantive application.

In particular, Contact has on a number of separate occasions met with mana whenua, DoC, and the Councils, discussed the further analysis that has been carried out since the Covid Fast-track Act decision, and sought feedback on updated proposed conditions. That engagement has again been very helpful to Contact in refining and finalising this FTAA application.

6. CULTURAL VALUES AND EFFECTS

6.1 OVERVIEW

Te Rūnanga o Awarua, Hokonui Rūnanga, Te Rūnanga O Oraka Aparima and Waihōpai Rūnanga ("**Ngāi Tahu ki Murihiku**") hold mana, rangatiratanga and kaitiakitanga over Pawakataka. Te Rūnanga o Ngāi Tahu Act 1996 and the Ngāi Tahu Claims Settlement Act 1998 give recognition to the status of Papatipu Rūnanga as kaitiaki and mana whenua of the natural resources within their takiwā boundaries. In respect of the Project, the entire Mataura River catchment (including the Mimihau Stream) is highly valued and important to

[28] Including: Papatipu Rūnaka ki Murihiku, Te Rūnanga o Ngāi Tahu and Te ao Marama Inc; Department of Conservation; Southland District Council; Southland Regional Council; Gore District Council; Invercargill City Council; Heritage New Zealand Pouhere Taonga; Ministry for the Environment; Waihopai-Toetoe Community Board; local residents; Transpower; Civil Aviation Authority; NZ Transport Agency; South Port.

Ngāi Tahu and forms part of the receiving environment, but there are also other important cultural connections associated with the Project Site, and these are described in the cultural values documents provided to Contact by Ngāi Tahu ki Murihiku, as summarised below.

In developing this Project, Contact has sought to develop genuine relationships, collaborative, respectful partnerships, and mutually beneficial outcomes for mana whenua. Since 2022, Contact has been engaging extensively with Ngāi Tahu ki Murihiku, Te Ao Marama Inc ("**TAMI**") and Te Rūnanga o Ngāi Tahu ("**Te Rūnanga**") including in relation to cultural values matters.

Under the previous Covid Fast-track Act process, Ngāi Tahu ki Murihiku (through TAMI) clearly outlined to Contact the cultural values associated with the Project Site and its surrounds, including through Ngā Hua o Āpiti Hono Tātai Hono and the Cultural Impact Assessment ("**CIA**") prepared by TAMI, and shared with Contact. In those documents, TAMI (on behalf of Ngāi Tahu ki Murihiku) expressed a number of initial concerns regarding potential effects of the Project on those values, and signalled that they should be the subject of further discussions with Contact.

As a result of those further discussions, and the broader engagement processes to date, Contact has been able to understand:

> The cultural values held by Ngāi Tahu ki Murihiku in the Project Site and its surrounds; and

> Concerns regarding the Project's potential effects on those values.

This then informed Contact's response in terms of avoiding, remedying and mitigating cultural effects, and further meaningful engagement with Rūnaka.

Through the CIA and the subsequent kōrero, including following the Covid Fast-track Act decision, the proposed conditions have been extensively consulted on between the parties and amended to address effects, including on taiao and cultural values. Mana whenua-specific conditions have been agreed between Contact and Ngāi Tahu ki Murihiku (and the other tangata whenua entities) and a separate confidential agreement has been reached to address matters that cannot be mitigated by way of conditions.

Ngāi Tahu ki Murihiku, TAMI and Te Rūnanga have previously confirmed that, should the approvals sought in this substantive application be granted with the agreed condition set (TW1-TW11), the cultural and te taiao effects relevant to them have been appropriately avoided, remedied, mitigated, offset and compensated.

This section of this application document provides a summary of the cultural effects of the Project, the consultation and engagement that has occurred, including, where relevant, providing links to the relevant documents from the previous consenting process.

6.2 INITIAL ENGAGEMENT

Contact began engaging with mana whenua in respect of the Project as early as it meaningfully could, in 2022. As the Project is Contact's first development in Murihiku, a key component of its engagement with mana whenua was to first identify and then approach the potentially affected or interested iwi authorities. Contact first approached TAMI and Aukaha (1997) Limited. Amongst other services and kaupapa, these organisations represent Murihiku and Otākou Rūnaka by providing resource management engagement, taiao and cultural advice, and help connect with applicants in RMA and other processes.

TAMI and Aukaha both confirmed that TAMI would lead the engagement with Contact on behalf of Ngāi Tahu ki Murihiku, and TAMI agreed to develop a CIA (Table 1 of the Mana Whenua Engagement Summary from the previous Covid Fast-track consenting process summarises the engagement that occurred between November 2022 and December 2023.)[29]

On 30 May 2023 TAMI entered into an agreement with Contact to provide a CIA to inform Contact's application. Due to time constraints, it was not possible to provide a full CIA on the application at the time of lodgement in December 2023.

Nonetheless, Contact is grateful to TAMI for still being able to provide advice to inform Contact's Covid Fast-track Act application including the Executive Summary – Cultural Impact Assessment[30] and Ngā Hua o Apiti Hono Tatai Hono – Pawakataka[31] that were lodged with the previous application. Both of these helped inform the ongoing engagement with TAMI and Ka Papatipū Rūnaka. The Executive Summary CIA drew out the key findings from the Ngā Hua o Āpiti Hono Tātai Hono assessment and assisted to describe the potential impacts on cultural values and TAMI's initial recommendations to address them.

Ngā Hua o Apiti Hono Tatai Hono provides a site narrative that assists with the context in which the effects of the Project on Ngāi Tahu values, associations, relationships, cultural

---

29 https://www.epa.govt.nz/assets/Uploads/Documents/Fast-track-consenting/Southland-Wind-Farm/Application-documents-/Appendix-X-Mana-Whenua-Engagement-Summary.pdf

30 https://www.epa.govt.nz/assets/Uploads/Documents/Fast-track-consenting/Southland-Wind-Farm/Application-documents-/Appendix-K-Cultural-Impact-Assessment-Execuitve-Summary.pdf

31 https://www.epa.govt.nz/assets/Uploads/Documents/Fast-track-consenting/Southland-Wind-Farm/Application-documents-/Appendix-L-Nga-Hua-o-Apiti-Hono-Tatai-Hono-Pawakataka.pdf

practices, uses, and aspirations should be considered. The appropriate 'at-place outcomes' described therein are:

> For the landscape to retain its identity and its connections between Rangi and Papatūānuku, Tāwhiri-matea, Tangaroa and Tāne, land and waters, people and place.

> Avoiding any changes to fundamental characteristics like landforms or ecosystems that disrupt relationships between Ira Atua Ira Tangata.

> For the wind to move through the landscape with any human interactions to be temporary and unrestricting on the natural environment and taonga species.

> The undulating landscape should be cloaked by vegetation and for taonga species to adorn the area.

Three key elements were identified to guide whether the Project would be appropriate within the Pawakataka landscape:

> The **scale and nature of the turbine structures** and their potential to sever the connection between Rangi and Papatūānuku, Tāwhiri-matea, Tangaroa and Tāne, land and waters, people and place.

> The **scale and nature of the earthworks**, filling and indigenous biodiversity habitat clearance potentially changing the characteristics and identity of the landscape.

> The **offsetting and compensation package seeking to achieve a no net loss outcome**, and whether it would support the continued adornment of the undulating landscape.

Flowing from that, the main issues identified by Ngāi Tahu ki Murihiku were in relation to associations and connections to cultural landscapes, mauri, and mahinga kai, access and wāhi tapū. More specifically, the values, rights and interests that Ngāi Tahu ki Murihiku sought to protect are:

> **Mauri**, and the life supporting capacity and cultural and ecological health of Pawakataka and surrounds.

> The **ability for future generations to engage** with Pawakataka and surrounding environment as their ancestors did, and continue to do.

> That **water quality is to be protected** to a standard that allows for mahinga kai to be diverse, abundant and safe to eat.

> **Mahinga kai** species, habitat, and access to these for customary use during and after the activity is protected.

- **Wāhi tapū, wāhi ingoa and archaeological sites** on, or within the vicinity of, Pawakataka and surrounding environment are protected.
- The ability for Waihōpai Rūnanga to be able to exercise **rangatiratanga** over Pawakataka and the surrounding environment.
- Exercise of **Kaitiakitanga** within the management and monitoring processes of the Contact Resource Consent.

Contact provided an initial response to these matters when it lodged its previous application in December 2023.[32]

In the 13 December 2023 covering letter for the Executive Summary CIA, TAMI also highlighted that a separate longer term relationship agreement would be required to enable elements of the requested conditions of consent to be appropriately resourced and supported. As discussed below, this relationship agreement was progressed through to an overarching agreement and condition set in November 2024 and which remains in place for the Project.

6.3 KŌRERO FOLLOWING THE LODGING OF THE PREVIOUS APPLICATION

One of the recommendations of the Executive Summary CIA in the previous consenting process was to allow for more time for kōrero between Contact and tangata whenua. The Executive Summary CIA and Ngā Hua o Apiti Hono Tatai Hono formed the basis of further kōrero between Contact and TAMI and on 1 May 2024 a full CIA was lodged.[33]

Potential effects of the Project on cultural values and Ngāi Tahu historic and contemporary associations were outlined in the CIA. It noted that Pawakataka was part of travel routes that crisscrossed between the inland and coastal nohoaka, kaika and mahika kai, and that effects on associated connections and values should be appropriately avoided, remedied, mitigated, offset and compensated through the Project.[34] The CIA acknowledged that through proper planning, engagement and management by Contact, the likely significant effects on cultural values may be able to be reduced or eliminated.

---

[32] See Table 2 of the Mana Whenua Engagement Summary from the previous consenting process https://www.epa.govt.nz/assets/Uploads/Documents/Fast-track-consenting/Southland-Wind-Farm/Application-documents-/Appendix-X-Mana-Whenua-Engagement-Summary.pdf

[33] https://www.epa.govt.nz/assets/Uploads/Documents/Fast-track-consenting/Southland-Wind-Farm/Application-documents-/Ecology-Addendum-and-CIA-01-05-24/Cultural-Impact-Assessment-as-amended-30-April-2024.pdf

[34] See sections 3 and 4 of the CIA.

The first key issue in the CIA relates to "*significant effects on the cultural landscape of Pawakataka and impacts the associated connections and relationship that Ngāi Tahu whānui have with the maunga and its surrounding area*." The second and third key issues in the CIA relate to mauri, mahinga kai, access and wāhi tapū, closely interrelated with ecological effects.

Following the ongoing kōrero, an updated set of conditions was submitted by Contact to the COVID-19 fast-track panel on 27 June 2024, which included changes based on feedback received from TAMI, including proposed Mana Whenua specific conditions, which were a work in progress with TAMI.[35]

On 25 July 2024 Te Rūnanga and TAMI provided comments on the previous application.[36] These comments reflected their positions on the Project at that time and should be read in that light. The changes to the conditions had addressed Ngāi Tahu ki Murihiku's concerns in part. However, concern remained that the key issues were not capable of being addressed solely by way of consent conditions.

At Contact's request, processing of the previous Covid Fast-track application was suspended for a period of time, including to enable more kōrero between Contact, TAMI and Te Rūnanga.

6.4 AGREEMENT REACHED ON CONDITIONS AND MITIGATION FOR THE PROJECT

Further regular kōrero throughout the latter half of 2024 resulted in agreements about the proposed consent conditions and other mitigations, resolving potential cultural, taiao and other effects to the satisfaction of Ngāi Tahu ki Murihiku. The proposed agreement was circulated at a hui with representatives of the four Ngāi Tahu ki Murihiku Rūnaka on 9th November 2024 at Oraka, where subsequently rūnaka advised their wish to change their previous opposition to the grant of consent to 'not oppose'.[37] After ongoing kōrero in 2025 following the Covid Fast-track Act decision, Contact understands this remains the position of Ngāi Tahu ki Murihiku.

---

35 https://www.epa.govt.nz/assets/Uploads/Documents/Fast-track-consenting/Southland-Wind-Farm/Application-documents-/Amended-Docs-27Jun2024/Southland-Wind-Farm-Proposed-Conditions-27-June-24.pdf

36 https://www.epa.govt.nz/assets/Uploads/Documents/Fast-track-consenting/Southland-Wind-Farm/Comments/Iwi_TRoNT-letter.pdf; https://www.epa.govt.nz/assets/Uploads/Documents/Fast-track-consenting/Southland-Wind-Farm/Comments/Iwi_Final-TAMI-letter.pdf

37 https://www.epa.govt.nz/assets/Uploads/Documents/Fast-track-consenting/Southland-Wind-Farm/Comments-on-draft-conditions/Applicant_Memo-from-applicant-and-iwi-regarding-agreement.pdf

There are two main strands to the agreed cultural and te taiao mitigations for the Project. The first is an agreed set of mana whenua specific consent conditions TW1 to TW11 (that were generally consistent with the version provided by Ngāi Tahu ki Murihiku and Te Rūnanga on 11 October 2024).[38]

The parties have agreed the mana whenua specific consent conditions that are now proffered by Contact under the FTAA process.

The conditions include establishment of the Ngā-Pou-Whai-Hua joint governance group alongside Contact to facilitate on-going engagement, feedback on environmental matters, share information to whānui, ensure the appropriate tikanga is followed, and co-manage delivery of any offset, restoration and remediation projects. The conditions also provide for the establishment and funding of Tuia te Mana ō Pawakataka programme of works to manage potential impacts on mana whenua values through the implementation of monitoring, mitigation, restoration and enhancement measures. This includes Contact funding a project manager or cultural monitor to allow the rūnaka visibility and functional resource on the Project.

Further aspects of the Tuia te Mana ō Pawakataka programme (or otherwise stipulated in conditions) include:

> A cultural induction programme for Contact staff and contractors;

> Roles for kaimahi or environmental observers on ecological monitoring etc being carried out;

> Co-design of wānanga and hikoi;

> Facilitation of better site access for whānui;

> Naming conventions of the site and its features;

> Consultation over work and commercial opportunities;

> Education and scholarship funding;

> Provision of power for the four marae of Kā Papatipu Rūnaka; and

> Consultation on the extensive suite of environmental management plans.

[38] See Appendix One to the joint memorandum: https://www.epa.govt.nz/assets/Uploads/Documents/Fast-track-consenting/Southland-Wind-Farm/Comments-on-draft-conditions/Applicant_Memo-from-applicant-and-iwi-regarding-agreement.pdf. The 11 October 2024 conditions can be found here: https://www.epa.govt.nz/assets/Uploads/Documents/Fast-track-consenting/Southland-Wind-Farm/RFIs-and-Responses/Appendix-2-updated-mana-whenua-consent-conditions.pdf

Secondly, there is a confidential agreement to address matters that cannot be mitigated by way of consent conditions.

Again, as a result of those agreements, Ngāi Tahu ki Murihiku and Te Rūnanga considered that should the consents and approvals sought by Contact be granted, the cultural and te taiao effects relevant to them have been appropriately avoided, remedied, mitigated, offset and compensated.

Following the kōrero between the parties leading up to this application, Contact understands that TAMI, Ngāi Tahu ki Murihiku, and Te Rūnanga continue to hold the same position.[39] Contact looks forward to continuing to work closely with TAMI, Ngāi Tahu ki Murihiku and Te Rūnanga throughout the FTAA process.

7. PROJECT DESCRIPTION

7.1 PROJECT SITE

The proposed Southland Wind Farm comprises two main components - a Wind Farm, where the wind turbines, wind farm substation, and wind farm roads are located - and the Grid Connection works – being the infrastructure required to connect the wind farm to the Transpower National Grid. This comprises a high voltage (220kV) overhead transmission line and a switching station, also known as the grid injection point ("**GIP**"). From a property perspective, these two project aspects are described as follows:

- **Wind Farm Site**: the land upon which the wind turbines, wind farm substation and wind farm roads are located. This area is entirely in the Southland District and the Southland Region.
- **Project Site**: the Wind Farm Site, plus the land also required for the grid connection works (i.e. the transmission line and the GIP) and the main construction access route to the Wind Farm Site, through the Port Blakely Forest. This area is partly in the Southland District and partly within the Gore District, and entirely in the Southland Region.

The Wind Farm Site is located on Slopedown Hill in eastern Southland, approximately 50km east of Invercargill, 30km southeast of Gore and 12km east of Wyndham (refer to **Figure Project Description-1 (Part G)**). The Wind Farm Site covers approximately 58km^2 of privately owned land, including land which forms part of two sheep and beef farms

[39] As set out in the letter provided to the EPA by Ngāi Tahu ki Murihiku, and Te Rūnanga dated 1 April 2025, and to the EPA by TAMI dated 30 April 2025, in the context of the FTAA referral application.

(Jedburgh Station and Glencoe Station), and Venlaw plantation forest owned by Matariki Forests (refer to **Figure Project Description-2 (Part G)**).

7.2 WIND FARM SITE FEATURES

The Southland Wind Farm Project will include the following key components:

- Construction and operation of up to 55 wind turbines, each up to approximately 7MW in capacity and a maximum blade 'tip height' of up to 220m;
- Electrical reticulation, providing electrical connection between the wind turbines and the wind farm substation;
- A wind farm substation to collect the power generated by the wind turbines. This will be located on Jedburgh Station;
- A switching station (also known as GIP) located adjacent to the existing Transpower 220kV circuit between Invercargill and Dunedin (the North Makarewa to Three Mile Hill A Circuit);
- An overhead single or double circuit 220kV transmission line between the wind farm substation and the GIP to provide connection to the Transpower National Grid;
- Up to two permanent meteorological masts, each up to approximately 140m in height;
- An operations and maintenance facility located on Jedburgh Station; and
- Construction of roading, turbine foundations and "hard stand" areas adjacent to each turbine.

An indicative layout of these components is illustrated in **Figure Project Description-2A (Part G)**. Further detail of each Project component is provided below.

7.2.1 Wind Turbines

The Southland Wind Farm will comprise up to 55 wind turbines, located over three properties, Jedburgh Station, Glencoe Station and Matariki Forests' "Venlaw" forestry plantation (refer to **Figure Project Description-2 (Part G)**).[40]

An indicative image of a wind turbine is shown in **Figure 1** and **Figure 2** below.

[40] The wind farm layout is indicative and may be subject to change (within the bounds of what the conditions permit) during the detailed design process.

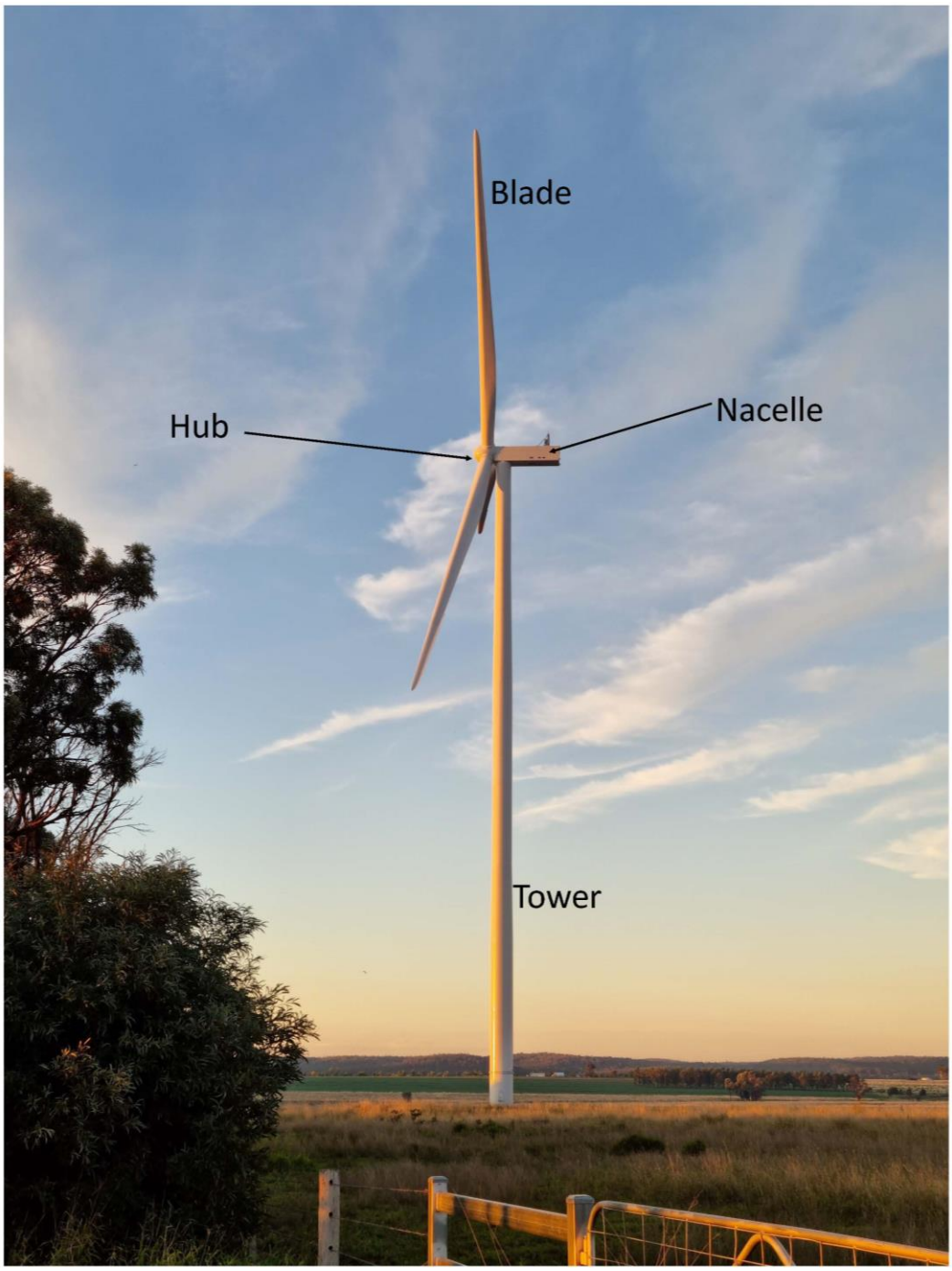

Figure 1: **Photo of a wind turbine and description of wind turbine components.**

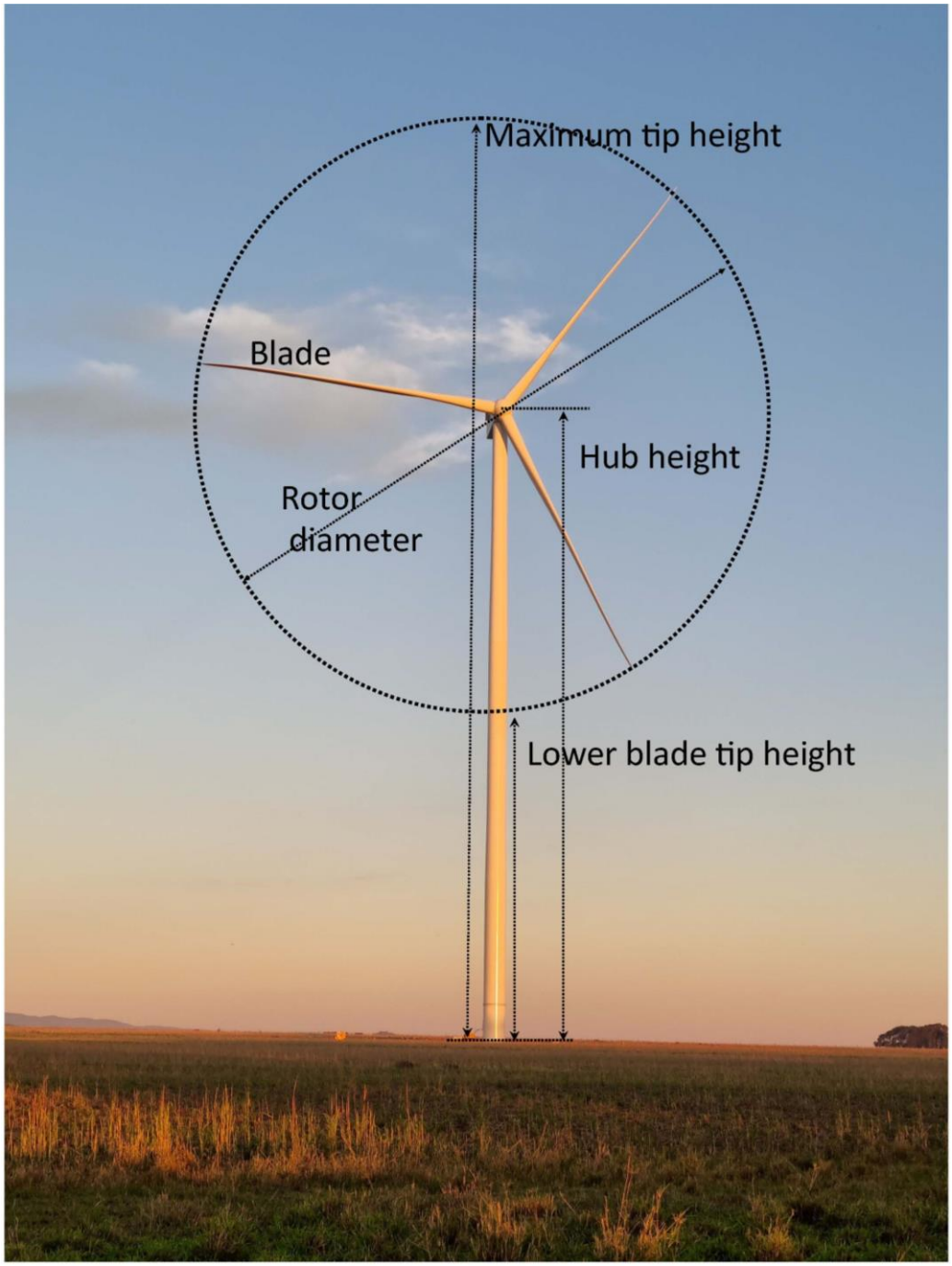

Figure 2: Photo of a wind turbine and description of terminology.

7.2.1.1 Layout and Turbine Envelope Zone

The wind turbine layout has been largely determined by the availability and most efficient use of the wind resource, while taking into account engineering requirements and, in particular, the need to avoid and minimise effects on the environment, including on landscape values, high value indigenous vegetation, habitats for flora and fauna, and natural

inland wetlands. The wind turbine layout has been designed for a rotor diameter of approximately 170m and a hub height of approximately 135m. The maximum blade tip height of the wind turbines will be up to 220m.

The precise location will be determined as part of the detailed design process. Indicative locations for each turbine are shown on **Figure Project Description-2A (Part G)**. The proposed resource consent conditions specify a 'Turbine Envelope Zone', which is an area within a 200m radius, subject to property boundaries, from the identified indicative point of each turbine location. All turbines (including associated transformers) will be located within the Turbine Envelope Zone, which provides a limited degree of flexibility during the detailed design process.

The final location of the turbines is also constrained by the proposed caps on wetland and vegetation clearance, which are discussed in **Part B** of these application documents.

7.2.1.2 Wind turbine components

Each wind turbine typically consists of:

- A foundation and wind turbine platform;
- A tapered tubular steel tower;
- A nacelle which sits on top of the tower and houses the generator, gearbox (depending on the turbine model), main control and safety systems, and a rotor shaft which transmits the rotating energy from the wind turbine rotor to the generator, via the gearbox; and
- A three bladed wind turbine rotor and nose cone. Wind turbines will be painted with the same industry standard low reflectivity finish in an off-white colour.

Wind turbine foundations will be either gravity pads or a piled solution, depending on the results of the geotechnical ground investigations undertaken during detailed design (refer to **Figure 3** below for an example of a wind turbine foundation). In terms of those two options:

- Gravity pads will likely have a width of between 20-25m, a thickness of approximately 2m and consist of approximately 800-1000m^3 of concrete with reinforcing steel; or
- Piled foundations would be smaller in diameter and contain less concrete, but would extend deeper into the ground.

A transformer for each wind turbine will be located either within the turbine nacelle, in the base of the wind turbine tower, or adjacent to the tower (and located outside the edge of the foundation), depending on the wind turbine model selected. If located outside of the tower,

the transformer will be housed in a cubicle steel box approximately 4.5m long, 3m wide and 3m tall, on a small concrete pad.

Figure 3: Photo of a wind turbine foundation during construction.

7.2.1.3 Wind turbine platform areas

Platform areas (aka 'crane pads' or 'hardstands') beside each wind turbine are required for storage of components and the placement and erection of a crane for installation (an indicative platform area is shown in **Figure 4** below). The geometry of the hardstands will depend on the wind turbine model selected but could be up to approximately 125m long by a varying width of approximately 30-65m, with an additional extension of approximately 70m by 13m for crane assembly (inclusive of the support crane pads for erection of main crane).

Figure 4: Photo of a wind turbine platform area, with cranes to assist with the wind turbine installation.

The indicative footprint of each of the individual wind turbine platform areas is shown in **Figure Project Description-2A (Part G)**. These indicative footprints have, in a number of cases, been specifically developed to minimise impacts on important habitats, and in particular wetlands. Given the proposed caps on the clearance of wetlands and other important habitats, discussed later in these application documents, there is only a relatively limited degree of flexibility available in respect of the final footprint of the platform areas.

7.2.1.4 Wind turbine lighting

To ensure the safety of night-time aviation, the wind turbines must comply with the requirements of the Civil Aviation Authority ("**CAA**"), in particular, in terms of lighting.

The CAA determination for the proposed Southland Wind Farm layout has identified 16 wind turbines that must be lit with a medium intensity Aviation Obstruction Warning Light, mounted on top of the nacelle (identified in (refer to **Figure Project Description-6 (Part G)**). The remaining 39 wind turbines will have no external lighting equipment.

That outcome is the result of intensive engagement between Contact and the CAA during the previous Covid Fast-track consenting process. Following an initial determination by the CAA about the aviation warning lighting it considered necessary for safety, Contact responded to community concerns about the amenity effects of such lighting by preparing and filing an

appeal ('petition') with the CAA, providing further information and modelling. The CAA responded to the petition on 16 August 2024 with a new determination requiring only 16 turbines to be lit. The navigational lighting will not cause light spill[41] onto other dwellings or roads.

7.2.2 Electrical Reticulation

Each turbine will be connected to the on-site substation located within the Wind Farm Site using 33kV (or potentially 66kV) cables. The electrical reticulation will be underground with cables buried (at approximately 0.9m depth) in, or alongside, the roads that will be constructed between the turbines and the substation.

In some situations, where underground cables are not feasible, such as stream crossings, overhead lines will be used. These will either be mounted on cable trays not exceeding 2m in height, or on wooden, concrete or steel poles no more than 25m in height. This will be determined following the completion of detailed design investigations.

The cabling between the turbines, and to the substation will also include a fibre optic cable, to allow for control of the wind farm and the transfer of operational data.

7.2.3 Wind Farm Substation

The wind farm substation is a point where the output of all wind turbines is collected and then "stepped up" in voltage, to 220kV to match the voltage of the Transpower National Grid to which the wind farm will connect. The proposed location of the wind farm substation envelope and conceptual substation layout is identified in **Figure Project Description-4 (Part G)**. The substation will be approximately 2.5ha in area and will include the following components:

- Perimeter stock fence and security fence;
- A car parking area;
- A control building approximately 10m by 20m and 6m in height;
- Two switchrooms each approximately 32m by 7m, which will house 33kV (or 66kV) indoor switchgear, control panels, communications, power supply and associated equipment;
- Up to two gantry structures for 220kV line termination up to 20m height;

[41] Defined in Chapter J, Definitions, of the Auckland Unitary Plan as light from both direct and indirect sources, which falls outside the area that is required to be artificially lit.

- 220kV bus work, switch gear and associated equipment which may include STATCOM and Harmonic filters;
- Lightning protection, communication and lighting towers up to 35m in height; and
- Two 33kV / 220kV (or 66kV / 220kV) transformers.

The substation transformers will contain approximately 75,000 litres of oil each. Low level bunding will be formed around the transformers and sized to exceed the volume of oil contained within the transformers, in order to capture all oil in the unlikely event of an oil spill. Stormwater collected within the bund will be discharged via a water / oil separation system.

Up to two additional enclosures may also be required to house capacitor banks and/or Static Synchronous Compensator, necessary for voltage regulation and reactive power compensation.

The substation site will also contain an office and ablution facilities for workers. The water supply is intended to be via rainwater collection and storage tank. A septic tank will be located within the substation site to capture sewage from the ablution facilities. All sewage will be removed by truck.

A temporary laydown area will be established adjacent to the substation for equipment and storage during the construction period. This area will be gravel and will be decommissioned and revegetated after the construction phase is completed.

An earth grid will likely be required beneath the substation, buried less than 1m below ground level and extending to approximately 1m beyond the perimeter fence. Typical activities at the wind farm substation will be undertaken during 'normal' working hours (i.e. Monday to Friday, 8am – 5pm). Occasionally work may be required at times outside of 'normal' working hours (i.e. to attend to faults or for other urgent work), and if required, lighting may be needed to allow staff to undertake their work and move safely within and around the general vicinity of the substation. Such lighting is only required when staff are present and when light is required and will be switched off when the substation is not occupied. The level and arrangement of lighting will be designed to comply with the permitted activity standards of the Southland District Plan and will not create excessive glare beyond the general vicinity of the substation.

Figure 5: Photo of a substation with a similar layout to the substation that is proposed to be constructed in the wind farm.

7.2.4 Grid Injection Point (GIP)

The GIP facilitates a reliable and controllable connection point between the Southland Wind Farm substation and the Transpower National Grid. The GIP will be located adjacent to the existing Transpower 220kV North Makarewa – Three Mile Hill A ("**NMA-TMH-A**") circuit, in the Gore District.

The GIP will be located in the envelope area shown in **Figure Project Description-3 (Part G)**, with the final position within that envelope be confirmed following detailed design. The GIP envelope area is comprised entirely of improved pasture and is on private farmland, south of SH93. It is accessible via Davidson Road from the south or via a private road off Jeff Farm Road from the north.

The existing transmission line has two circuits, one on the near side to the proposed GIP, and the other on the far side. Therefore, two potential arrangements for the connection to the existing 220kV transmission line are possible. The preferred option will be determined following detailed design. The two potential connection arrangements are as follows:

- **Connection to the near circuit:** Up to four new transmission line structures will be required to connect the GIP to the existing transmission line. This includes two new structures required on the existing NMA-TMH-A to allow diversion of the line toward the GIP, and two on each side of the GIP, east and west, to further divert the existing transmission line into the GIP. These structures will typically be up to 45m tall and be similar in appearance to the existing towers on the NMA-TMH-A line and those on the new transmission line between the GIP and the Wind Farm Substation.
- **Connection to the far circuit:** This will require an undercrossing, whereby the far circuit is diverted onto lower structures and strung underneath the existing line as a means to cross to the GIP side. Therefore, in addition to the first arrangement described above, four undercrossing structures would also be required. The minimum ground clearance required to the conductors is 8.5m. The undercrossing structures will need to be taller to accommodate this. Strengthening of the adjacent towers and foundations may also be required, and dependent upon the undercrossing clearances, earthworks may be required to form the structure pads or lower ground levels under the span.

A conceptual layout of the GIP is shown in **Figure Project Description-3 (Part G)**. The GIP site will be approximately 1ha in area, with indicative dimensions of 140m by 70m, and will consist of the following:

- Perimeter stock fence and security fence;
- A car parking area;
- A control building of approximately 11m by 6m and approximately 5m in height;
- A facilities building of approximately 11m by 6m and approximately 5m in height;
- Up to eight gantry structures for 220kV line termination up to 30m height (includes lightning peaks);
- 220kV bus work, switch gear and associated equipment (no taller than 10m); and
- Lightning protection, communication and lighting towers up to 35m in height.

An earth grid will also be required beneath the GIP, buried less than 1m below ground level and extending to approximately 1m beyond the station security fence. No transformers are expected to be installed at the GIP, therefore, no bunded areas for oil containment will be required.

The control building will house protection and control panels, communication, power supply and associated equipment. The facilities building will contain ablution facilities, kitchenette, office and storage area. The water supply is intended to be via rainwater collection and

storage tank. A septic tank would be located within the GIP site to capture sewage from the ablution facilities. Sewage will be removed from the GIP site by truck. Where reasonably practicable, all buildings within the GIP will be muted recessive colours and non-reflective.

Lighting requirements for the GIP will be operated in a similar manner to the wind farm substation, described in the section above.

7.2.5 Transmission Line

A new 220kV transmission line will form the connection between the wind farm substation and the GIP. The transmission line will be approximately 16km long and will be either single or double circuit 220kV line supported on steel lattice towers or poles typically 40m in height, but up to 55m in height where necessary (i.e. where the topography requires the use of taller towers/poles). Earthwire peaks will be required on some or all of the structures.

Four potential transmission line routes were initially considered by Contact, however, a preferred transmission line route has been identified, based on environmental considerations, property rights and proximity to dwellings. This route is identified on **Figure Project Description-2A (Part G)**.

Approximately 50 support structures (i.e. pylons, towers or poles) may be required for the transmission line, with a typical spacing of 300-400m. If a double circuit line is selected (which is the most likely), the towers will carry three 220kV conductors on each side plus an overhead earth wire containing optical fibre. A 200m wide envelope 'corridor' (100m either side of the centreline) is sought for consent to allow for tower placement micro-siting at the detailed design stage. No structures associated with the transmission line will be placed within 10m of any areas identified as wetlands, high or very high ecological value vegetation, and rivers or streams.

7.2.6 Operations and Maintenance Facility Building

An Operations and Maintenance ("**O&M**") building will be located within Jedburgh Station, within the envelope shown on **Figure Project Description-5 (Part G)**. The O&M building will be no larger than 1,500m^2 in area (approximately 60m in length by 25m in width) and 7m in height. This building will contain site offices, meeting rooms, ablution facilities, a kitchenette and workshop containing machinery and tools. Other key details of the O&M building and site include:

- The water supply will be via rainwater collection and a storage tank;
- A septic tank will also be located within the O&M site to capture and dispose of sewage from the ablution facilities. Sewage will be treated and disposed of to a disposal field

near the O&M building. The disposal system will be designed and installed in accordance with Sections 5 and 6 of NZS AS/NZS 1547:2012 – On-site Domestic Wastewater Management;

- A carpark with an area of approximately 1,500m^2-3,000m^2 will be located adjacent to the building. This will be sealed with asphalt or chip seal;
- The O&M building will have a perimeter stock fence and security fence;
- Lighting for O&M tasks and security will be installed around the buildings; however, lighting will only be on when required (i.e. when staff are present and working in or around the O&M building at times of the day/night when lighting is required). There is no need or requirement to light the O&M building at night when it is not occupied;
- Two storage units of up to 5m by 7m and up to 4m in height will be used for storage within the O&M facility grounds; and
- The colour of the O&M building will be selected to minimise visual impacts.

7.3 WIND FARM CONSTRUCTION

It is expected that the construction of the Southland Wind Farm will take approximately 24-30 months to complete.

The majority of the construction work will be undertaken on the Wind Farm Site and include activities including on-site road construction, foundation construction, construction of the electrical cable network between the turbines, substation construction and the installation of the wind turbines.

The works on the land outside of the Wind Farm Site, but within the Project Site, include upgrades to the main forestry road through the Port Blakely Forest and the construction of the transmission line and GIP, connecting the wind farm substation to the existing Transpower Grid. The construction activities are discussed in more detail in the sections below.

Following completion of the wind farm construction, the wind turbines will be operational for a period of up to 30 years and then it is currently intended that they will be 'repowered' (replacement of the wind turbines with new wind turbines) for a second 30-year period.

All construction activities will be carried out in accordance with a Construction Environmental Management Plan ("**CEMP**") that will be prepared for the Project.

The following key construction activities / elements are described below:

- Site enabling works;

- Roading and transport;
- Site construction compounds;
- Concrete batching plants and water storage;
- Temporary laydown area(s);
- Earthworks;
- Fill disposal;
- Construction of the wind farm site features;
- Commissioning of the wind turbines and electrical infrastructure;
- Site disestablishment; and
- Construction outside of the Wind Farm Site.

7.3.1 Site Enabling Works

Site enabling works include site-wide geotechnical investigations, and the preliminary works to allow the construction facilities to be set up on-site. This includes construction of the site construction compounds and site access points, discussed in more detail in Section 7.3.3 below. Traffic management and traffic controls may be required for safe movement of loads and local traffic. Existing weather monitoring on-site may be complemented with a weather monitoring station for on-site construction monitoring.

To investigate the ground conditions at key infrastructure locations to feed into the detailed design of the Project, geotechnical investigations are required. The investigations will comprise of the following key activities:

- Test pits will be required at key Project locations. Each test pit will be up to 5m deep and require up to 5m^3 of earthworks each. These test pits will be backfilled shortly after the relevant information has been catalogued during excavation. The test pit locations will include:
  - All wind turbine locations;
  - Approximately three test pits at each turbine hardstand;
  - Approximately eight test pits per hectare at each substation and switchyard;
  - Approximately eight test pits per hectare at each O&M facility bench;
  - Approximately eight test pits per hectare at each construction laydown and concrete batching plant area;

- Along proposed access road alignments at nominally 250m centres;
- Either side of each notable waterway crossing location; and
- Nominally two test pits at each transmission tower location.

> Boreholes for subsurface assessment will be required at the following key locations:

- At each wind turbine location down to 25m in depth;
- Two boreholes down to 25m depth at each substation and switchyard. These will be located beneath the proposed transformer bay and gantry structure(s);
- Boreholes down to 20m depth at nominated access track locations, where deep excavations are proposed;
- Boreholes down to 25m depth at each significant waterway crossing location; and

> Ground water monitoring will occur at a selection of the boreholes.

Boreholes require approximately 1.5m^3 of water for the drilling process and those not being monitored for ground water will be covered on completion.

The enabling works will include the proposed investigations listed above. Minor clearance of existing indigenous and exotic vegetation may be required at some locations to enable access for equipment.

7.3.2 Roading and Transport

7.3.2.1 Wind Farm Site Access

The proposed port to site transportation routes are identified in **Figure Transport-2 (Part G)**.

There are two proposed access routes into the Wind Farm Site, one from the west, via Thornhill Road (off Venlaw Road), and the other from the north, through the Port Blakely forest property accessed from Davidson Road West (off Kaiwera Downs Road). The northern route makes the greatest use of the state highway network and provides a direct link to SH93 and SH1, while the western access route follows rural roads between Wyndham and the Wind Farm Site, including Mimihau School Road, Waiarikiki Mimihau Road and Venlaw Road. Once the Southland Wind Farm is operational, access to the Wind Farm Site will likely make use of both site access options.

The existing forestry road through the Port Blakely forest will be upgraded and formed to a typical carriageway width of 6-6.5m (with localised widening on corners where necessary) and will be the main route for the delivery of wind turbine components. Both access routes will likely be used during the bulk earthworks phase when the major earthwork activities on-

site are being undertaken. This will enable a faster civil works programme, which may be critical given the possible constraints on the ability to undertake major earthworks over the winter months when access through the more elevated parts of the Wind Farm Site may be more difficult.

Figure Transport-3 (Part G) identifies the locations of potential sources for the required aggregate that will be transported to the Wind Farm Site. There are currently four identified potential sources of aggregate to the north of the Wind Farm Site and three to the west.

It is proposed that the delivery of wind turbine components between the port in Bluff (South Port) and the Wind Farm Site will be via the Port Blakely property, while the passage of trucks leaving the Wind Farm Site and heading back to South Port may prefer to use the more direct, Venlaw Road, access route (refer to **Figure Transport-5 (Part G)**).

In regard to the turbine component deliveries into the Wind Farm Site, the transportation of the very heavy loads (including the nacelles and tower sections), will mainly utilise the state highway network between South Port and Pukerau. The route then turns right off SH1 and heads south along Kaiwera Road to SH93 (Old Coach Road) and then east along SH93 for 400m before turning right into Kaiwera Downs Road and then through the Port Blakely Forest and into the Wind Farm Site.

For the wind turbine blades, the route is similar until Edendale, at which point the route heads east towards Wyndham and over the bridge over the Mataura River (which cannot accommodate the weight of the heavy loads, but can accommodate the weight of the blades). The route then traverses north on Wyndham Road (on the eastern side of the Mataura River) and continues on SH93 until turning right into Kaiwera Downs Road and then through the Port Blakely Forest and into the Wind Farm Site.

7.3.2.2 Internal Tracks

Within the Wind Farm Site, tracks will be formed between the wind turbines to facilitate construction access (and subsequently ongoing operations and maintenance access). These tracks will be formed to the same standard as the site access tracks but will likely have a carriageway width of up to 8m with localised widening on corners to accommodate the tracking of the wind turbine components. The tracks will typically be metalled and to a standard capable of bearing the heavy loads (i.e. the wind turbine nacelles, substation transformers and the main crane). On tracks constructed on very steep gradients asphalt or chip seal surfaces may be used.

Much of the internal access track network will follow existing farm / forestry access tracks, which will be upgraded to the standard required for the wind farm traffic, while other tracks

will be newly created. Some of the existing road upgrades will be done as part of the enabling works stage of the construction programme.

The location and detail of the internal access track network is shown indicatively on **Figure Project Description-5 (Part G)**. The indicative network reflects the proposed location of turbines (noting the Turbine Envelope Zone concept discussed above), and engineering and environmental constraints. In particular, in a number of locations the track network has been carefully designed to avoid or minimise impacts on wetlands and other high value habitats.

The final configuration of the internal track network will be determined through detailed design, noting that the Turbine Envelope Zone locations and the proposed 'caps' on wetland and other vegetation clearance will constrain the flexibility available in the detailed design phase.

7.3.2.3 Stream Crossings

The proposed roading network required for the Southland Wind Farm crosses a number of streams, most of which are very minor, but nine 'notable'[42] stream crossings ("**NSC**") have been identified, as shown in **Figure Aquatic Ecology-2 (Part G)**. To enable the transport of the wind turbine components, Contact is proposing to construct formed stream crossings at these sites. Eight of these crossings will be as culverts and one as a bridge (NSC2). The proposed stream crossing designs are described in Riley (2025) (included in **Part H** of the substantive application documents).

The proposed bridge crossing over the Mimihau Stream South Branch will involve creating a new road alignment and forming a new bridge crossing to replace the existing bridge crossing at this site. The proposed culvert crossings over the Mimihau Stream North Branch (NSC1) and the un-named tributary of the Mimihau Stream South Branch (NSC3) will also involve creating a new road alignment to replace the existing ford crossings at these sites.

Four of the proposed stream crossings (NSC5, NSC6, NSC7 and NSC8) will replace existing culvert crossings along the Port Blakely Forest access road, providing upgrades to the existing forestry tracks. In addition, the proposed culvert crossing near proposed turbine JED-19 (NSC4) will replace the existing culvert at this site.

Three of the proposed culvert crossings (NSC1 over the Mimihau Stream North Branch, NSC3 over a tributary to the Mimihau Stream South Branch, and NSC6 over Kaiwera Stream East Branch) will be designed to maintain passage for indigenous fish species, but prevent

[42] Being stream crossings which have catchments >40ha and required culvert >1,000mm in diameter.

passage for exotic species. This is to protect the threatened Gollum galaxias population upstream of NSC1 and NSC3 and the Clutha flathead galaxias population that is likely upstream of NSC6. Complex freshwater fisheries approvals are therefore being sought for these culverts, and this is described in further detail in **Part F** to these application documents.

Culverts would also be required at other, smaller stream crossings. These culverts will be designed in accordance with the New Zealand Fish Passage Guidelines.

7.3.3 Site Construction Compounds

A site construction compound will be set up for the duration of the construction period on the land owned by Contact at the end of Kaiwera Downs Road (see **Figure Project Description-2A (Part G)**). The construction compound will be an area where temporary, pre-fabricated buildings (Portacoms) will be located to act as offices for Contact, the balance of the plant civil contractor, the balance of the plant electrical contractor and the wind turbine supplier (refer to **Figure 6** below for an example of a site construction compound).

The construction compound area will include toilet facilities typically in the form of chemical toilets in pre-fabricated buildings. Water storage will be required for potable water to be used in the kitchen, canteen and toilet facilities. The construction compound area will include sufficient parking space and location for deliveries, where such deliveries do not have to be delivered into the Wind Farm Site. Temporary car parks in the construction compound will be compressed gravel and will be removed and rehabilitated once the construction phase is complete.

A second smaller site construction compound will be set up for the duration of the construction period on Jedburgh Station adjacent to the proposed O&M facility near the end of Thornhill Road. This smaller compound will have site facilities incorporated as described for the larger compound.

Figure 6: Photo of a site construction compound at Contact's Te Mihi power station site.

7.3.4 Concrete Batching Plants and Water Storage Ponds

Consistent with the construction of most large wind farms in New Zealand, the preferred approach for the Project is to batch the concrete on-site using a temporary concrete batching plant. Given the scale of the Southland Wind Farm, two different locations for the concrete batching facilities are proposed, one within Jedburgh Station close to the boundary with Glencoe Station, and the other within Venlaw Forest.

The envelope areas for these batching facilities are identified on **Figure Project Description-5 (Part G)**. The final concrete batching facilities to be used will be confirmed during detailed design. Each facility would have dual concrete batching plant units in order to meet the concrete demands. The final concrete batching facilities to be used will be confirmed during detailed design.

Each concrete batching facility will be comprised of two batching plant units. Each concrete batching plant facility will have an area of approximately 15,000m^2 and a maximum height of 15m above finished ground level. The concrete batching facilities will be decommissioned following the completion of construction works. **Figure 7** below shows an example of a concrete batching facility.

Figure 7: Photo of a concrete batching facility.

Measures to contain any dust, spillage and wash down of plant or trucks will be outlined in the CEMP. Such measures are likely to include cement storage within a silo, aggregate storage bins, a temporary concrete slab beneath the loading area and containment bunding around the batching plant.

One water storage pond or tank will be formed within the envelope for each of the concrete batching plants. These will be sized to hold a maximum of 10,000m^3 of water each and will ideally be used for all water construction demands. If required, temporary water tanks will be located close to the concrete batching plants to ensure the water to be used in the concrete batching process is not contaminated with impurities. If necessary (i.e. if the stream supply is not of a suitable quality), the water required for concrete batching may be trucked into the Wind Farm Site from a nearby municipal water supply.

7.3.5 Temporary Laydown Area(s)

Laydown or stockpile areas will be required for temporary storage of turbine components (as well as other materials such as electrical cables and crane components), ahead of installation. This is to allow for sufficient components / materials to be stockpiled on-site to meet the demand of construction crews, as well as to accommodate the arrival of several large shipments of turbine components. It is also likely that the laydown areas will provide space for portable site offices, workshops, stores and other construction crew facilities.

The temporary laydown areas will likely be located close to the Wind Farm Site entrance(s), with one on the property owned by Contact at Davidson Road, and another within Jedburgh Station, possibly close to the northern-most wind turbines at the end of Thornhill Road. The location of the laydown areas will be identified within the final CEMP and will avoid being located within areas identified as high or very high ecological value.

7.3.6 Earthworks

The following indicative earthwork volumes are anticipated for the construction of the Southland Wind Farm:

- Approximately 1,734,000m^3 of cut;
- Approximately 665,000m^3 of excavated material to be used as engineered fill; and
- Approximately 1,111,000m^3 of excavated material to be disposed of.

Included in the above figures are:

- Turbine foundation excavation volume (approximately 138,000m^3); and
- Turbine foundation backfill volume (approximately 96,000m^3).

The total earthworks area is approximately 161ha.

In addition, the indicative volumes for the transmission line are as follows:

- Approximately 44,000m^3 of cut;
- Approximately 9,000m^3 of fill; and
- Approximately 35,0000m^3 of surplus fill.

The total earthworks area for the transmission line is approximately 6.2ha.

7.3.7 Surplus Fill Disposal

The proposed surplus fill disposal ("**SFD**") method is described in detail in Riley (2025). SFD required for the Project can generally be characterised into three types as follows:

- **Blanket SFD**: Non-engineered fill will be spread over gently or moderately sloping ground (generally <15°), typically 1-3m thick (average 1.5m thick) and primarily located in exotic grass pasture or cleared forestry areas, close to tracks and hardstand areas. The finished surface will be contoured to follow the pre-existing ground profile beneath.
- **Shoulder SFD**: Fill will be placed butting up against tracks and hardstand fill embankments located along ridgelines/spurs or knolls. This will be comprised of a structural fill toe (for stability), with non-engineered fill placed behind. These fill disposal sites will be situated on ground with slopes typically <15° and maximum fill depths will vary, typically being less than 5m but may be up to 10m.
- **Gully SFD**: These are only proposed in the Venlaw/Matariki Forests landholding within the Project Site. Fill will be placed into the heads of gullies (outside of exclusion areas noted below) and will comprise a structural fill toe (for stability), with non-engineered fill

placed behind. Maximum fill depths will generally be between 5-10m. Overland flow from the upstream catchment (minor catchments) will be directed around the perimeter of the SFD via a rock lined channel to be sized for the 1% Annual Exceedance Probability ("**AEP**") rainfall event.

All fill disposal sites will comply with the following criteria, as required by the proposed consent conditions:

- No disposal shall take place within 10m of any areas identified as wetlands or high or very high ecological value vegetation and habitat types (as identified in the ecological assessment);
- No disposal shall take place within 10m of any permanent or intermittent rivers or streams; and
- No disposal shall take place into very slopes >45° or erosion-prone land.[43]

Contact will ensure appropriate erosion and sediment controls are implemented for fill disposal activities to prevent any release of sediment into waterways. Disposal sites will be contoured to avoid water impoundment or ponding on and around the fill site.

All topsoil will be removed from each disposal site and stockpiled for the future rehabilitation of the disposal site. Fill disposal sites will be appropriately rehabilitated and planted with like for like vegetation following the completion of works.

The indicative fill disposal sites are identified in **Figure Project Description-7 (Part G)**.

7.3.8 Construction of the Wind Farm Site Features

The construction of the Wind Farm Site features described in Section 7.2 will include the following:

- **Wind Farm Substation:** Construction of the wind farm substation will likely commence as soon as access to the substation site is feasible and the civil works to prepare the site have been completed.
- **Turbine foundations:** Construction of the turbine foundations will commence once access to a number of turbines has been established. The foundations will include reinforcing steel, turbine anchor bolts, electrical conduits and shuttering (to hold the concrete in position). Once the steelwork is completed, concrete, batched on the on-

[43] As shown on https://www.stats.govt.nz/indicators/highly-erodible-land as areas being "highly erodible land areas".

site batching plants, will be trucked to each of the turbine locations and pumped into the foundation.

- **Electrical reticulation:** The ends of each underground cable will enter each turbine via the conduit installed in or below the foundation. Typically, these cables connect to switchgear, protection and a transformer located within the turbine. The wind turbines within the wind farm will be electrically connected to a number of separate circuits referred to as "strings". The number of turbines on an individual string will vary and be dependent on the turbine capacity, string length, electrical cable size and ground conditions. Each of the electrical strings will be connected to the wind farm substation.
- **O&M facility:** The construction of the permanent O&M facility will likely occur towards the end of the wind farm construction programme.
- **Wind Turbine Platform Areas / Hard Stands**: The wind turbine hard stands allow for the assembly and placement of the main installation crane when constructing each of the turbines and includes space for the temporary storage of wind turbine components. Construction of each of the wind turbine hard stands can be completed once the electrical cables have been installed. The hard stand areas must be completed prior to the assembly of the wind turbine. The hard stand areas are retained as gravelled platforms for the life of the wind farm to enable ongoing maintenance on the turbines when required.
- **Wind Turbine installation:** Once sufficient turbine components have been delivered to the Wind Farm Site to allow continuous assembly of the wind turbines, the wind turbine assembly will commence. This requires a large crane to lift the top tower, nacelle and blades to the hub height of the turbine. The assembly of the turbine commences with the lower or base tower section, followed by the intermediate sections, before the top tower section is lifted into place. The nacelle and drive train are then lifted into place before fitting the hub. Once the turbine hub is in place, the three blades are installed. Once the turbine is erected, it is usually followed by a mechanical and electrical completion where internal fit-outs are completed. The crane then moves on to the next turbine site and repeats the process.

7.3.9 Commissioning of the Wind Turbines and Electrical Infrastructure

Once all electrical and mechanical fit-outs are completed, several pre-livening electrical tests are required. After they are complete, the turbine will be energised to allow electrical power to flow into the turbine. The energisation of the turbine will then allow the full commissioning and testing of further sub-systems prior to the wind turbine being tested in a generation mode.

Once generating, the turbine will go through some acceptance tests however from this point, it will be free to generate and export energy when the wind blows. The substation, transmission line and switching station all need to be completed prior to the first wind turbine being commissioned. Up to two wind monitoring stations may be installed in the Project Site to provide information on the wind resource and used to measure the performance of the wind farm. Final commissioning and testing of the entire wind farm is undertaken once all the turbines are operational.

7.3.10 Site Disestablishment

Once construction is complete, the site construction facilities will be disestablished. The concrete batching plants, temporary buildings, the main crane and other heavy equipment will be removed from the Wind Farm Site. In addition, all construction-related temporary structures, material stockpiles, and waste materials will be removed from the site and may be reused /recycled or disposed of in appropriate waste management facilities. The Wind Farm Site will be handed over to the site operations team who will continue to maintain the facilities from the main O&M building.

7.3.11 Construction Outside of the Wind Farm Site

Upgrades to the External Roading Network

Some sections of the delivery route will need to be upgraded to allow for the overlength loads (approximately up to 85m long for the wind turbine blades) and the overweight loads (approximately up to 150 tonnes for the substation transformers). These upgrades will be undertaken in accordance with standard roading maintenance and upgrade procedures and agreed with the roading authority, NZ Transport Agency or the relevant council. This upgrade work will need to be completed prior to the first turbine deliveries arriving at South Port.

Construction of the Transmission Line

The construction of the transmission line will follow standard transmission line construction methodology. Foundations will be constructed, then support structures will be erected. Once the towers are in place, the electrical lines will be rolled out over the length of the route and fixed to the towers. The transmission line will be built while the wind farm is being built and needs to be completed prior to the commissioning of the wind farm substation.

Construction of the Grid Injection Point

The construction of the GIP will take place in conjunction with the transmission line construction and will meet Transpower's design requirements.

7.4 WATER USE

Establishment of a reliable water supply is essential for construction activities. Contact is seeking the necessary water permits to enable the take and use of water needed for construction of the Project.

7.4.1 Wind Farm Construction Water Demand

The following describes the works associated with the Southland Wind Farm construction that require water use in more detail.

- **Earthworks for Road Construction and Turbine Platforms**: Water is required to assist with the compaction of both earthworks fill and road pavement construction. The amount of water required for these works is dependent on summer rainfall and in-situ water content of soils. The maximum daily water demand volume for this activity is anticipated to be approximately 140m^3 per day.
- **Mobile Crushing of Aggregate**: Associated with the road construction is the crushing of the sandstone encountered during the excavation of road cut and turbine foundation excavation for use as roading basecourse. The rock will be crushed using a mobile crushing plant. It is anticipated that this will require up to 40m^3 of water per day when in operation.
- **Concrete Batching**: The preliminary foundation design indicates that each wind turbine foundation will require between 800-1,000m^3 of concrete, of which around 20% is water. Thus, each wind turbine foundation requires up to approximately 200m^3 of water, or approximately 11,000m^3 in total for the 55 proposed turbine foundations. The concrete foundations are likely to be poured over a 9-12 month period. Based on previous wind farm construction experience, a complete wind turbine foundation will be poured in one day over an 8-hour period.

  A less significant amount of concrete (and associated water) is required for the foundations beneath the two transformers within the substation. It is anticipated that the maximum water demand for the substation transformer foundations is approximately 50m^3 for one day. This will not occur on the same day as the concrete batching for wind turbine foundations.
- **Dust Control:** The potential for dust emissions needs to be managed to avoid adverse effects on site staff, adjacent properties, watercourses and stock. To ensure that adverse effects do not occur, active dust suppression measures will be undertaken and outlined in the Earthworks Management Plan ("**EMP**") that will be prepared for the Project. These will include wetting down of roads and construction surfaces with water carts during dry windy periods. The dust suppressant measures will be mainly required

for haul roads and overburden disposal sites. Based on previous wind farm construction, up to 100m^3 of water per day may be required at peak times.

> **General Activities**: It is likely that additional water will be required to wash down concrete delivery trucks, keep stockpiles moist, clean equipment, complete site rehabilitation works such as irrigation and the like. This additional demand is expected to be in the order of 20m^3 per day.

Table 2 below provides a summary of the anticipated water use requirements for the wind farm construction. Not all of these activities occur concurrently, and thus, for most of the time, the daily quantity of water required on-site will be much less than the total maximum sought, as indicated below.

Table 2: Summary of water use requirements during construction.

Water Use Activity	Maximum Daily Quantity (m^3)
Earthworks for road construction and turbine platforms	140
Aggregate crushing	40
Concrete batching	200
Dust control	100
General activities	20
Total	500

7.4.2 Proposed Water Take Locations

Two water take locations have been identified to provide flexibility of water supply at various construction phases and location of specific areas of works. These locations are identified as M1 and M2 on **Figure Project Description-5 (Part G)**. Both water take locations are from tributaries to the Mimihau Stream South Branch.

The stream level has been recorded at both water take locations since March 2023. A hydrological analysis was undertaken to provide an indication of the expected low flow conditions in summer.[44] This work indicates that the 95th percentile flow is 65L/s at site M1

[44] Hydrometric Data Assessment, Hydrological Monitoring – Mimihau Stream Southland Wind Farm, prepared by Riley Consultants, dated 5 June 2025, included in Appendix D of Riley (2025).

and 92L/s at site M2. Contact seeks to take water from the two sites at a maximum rate of 5L/s.[45]

A flow recording logger will be installed within the streams close to the water take locations and operate throughout the construction of the Southland Wind Farm to ensure the maximum instantaneous take described above is not exceeded.

7.4.3 Water Take and Storage

Irrespective of the site of water abstraction, the same two-stage concept for the water take and storage will be employed. The first stage will be the take and initial storage by way of a diesel-powered pump feeding header tanks. The header tanks would be located on the side of the stream. It is possible that some earthworks may be necessary to form an area of flat land for the header tanks to be located on, but these would be relatively minor. The second stage concerns the distribution of this water to a "Water Storage and Concrete Batching Facility", by way of a diesel-powered pump. **Figure 8** below contains an indicative sketch of the proposed water take concept.

To control and limit the water take from the stream during this stage, the hydrological monitoring system will be used to provide information on the instantaneous stream flow. The water take will cease when the header tanks are full.

The second stage consists of pumping water via a diesel-powered pump, from the header tanks to the storage ponds, each having a volume of approximately 10,000m^3. These will be established in the two areas identified in **Figure Project Description-5 (Part G)**, adjacent to the concrete batching facilities and main wind farm access tracks.

At the water storage location, water will be taken directly from the storage ponds by water carts / tankers or supplied to the concrete batching facilities (as indicated on the schematic in **Figure 8**).

[45] Except when the minimum flow of the stream, as measured at the point of the water take, is Q95. During this time, the water take will comply with the permitted activity rules of the Proposed Southland Water and Land Plan, in accordance with the consent conditions.

Following construction, the ponds may remain on-site and be used as resources for stock water and / or firefighting or be decommissioned and rehabilitated, whichever is the preference of the landowner. To clarify, the water take from the stream will cease upon construction being completed. There will be no operational water take required for the wind farm, and if the ponds are retained for use of the landowner (e.g. for firefighting purposes), they will be entirely fed by rainwater.

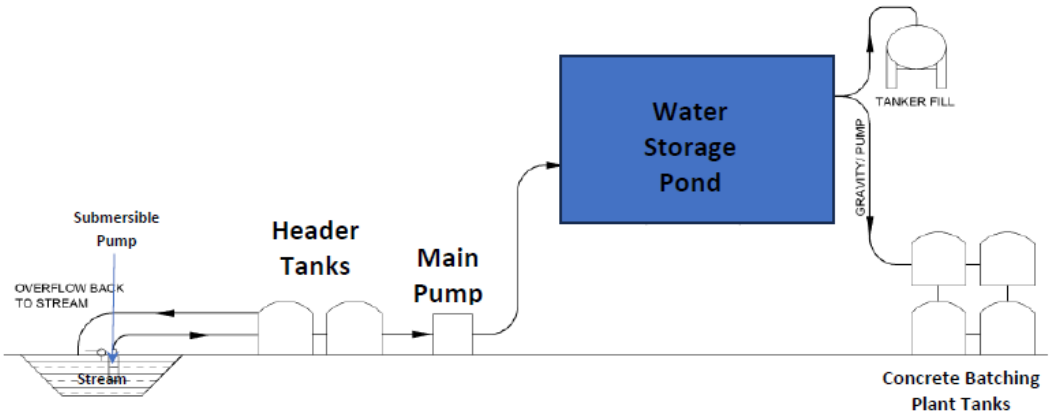

Figure 8: Proposed water take schematic.

7.4.4 Rehabilitation

At the completion of construction, all construction equipment and temporary buildings that are not required for the continued operation and maintenance of the wind farm will be removed from the site (for example, the concrete batching plants). The land occupied by these construction buildings and activities will be re-contoured (where necessary) and rehabilitated back to pasture.

Likewise, exposed areas around the turbine platforms, electricity substation / switchyards and any operational buildings will be rehabilitated back to pasture (or alternative cover such as like for like indigenous vegetation as appropriate).

7.5 WIND FARM DECOMMISSIONING

Following completion of the operation of the Southland Wind Farm, Contact will remove all wind turbines and above ground structures from the site. Contact will re-vegetate any exposed surfaces and all turbine foundations, hardstand areas and other ancillary building foundations will be covered with topsoil and/or cleanfill material and revegetated with like for like vegetation of the area immediately surrounding each component.

Prior to the commencement of decommissioning, Contact will prepare a Decommissioning Management Plan that will outline the procedures for the decommissioning of the Southland Wind Farm.

8. INELIGIBLE ACTIVITIES

In accordance with section 5 of the FTAA, the Project does not meet the definition of an ineligible activity as the Project:

- Will not occur on identified Māori land;
- Will not occur in a customary marine title area;
- Will not occur in a protected customary rights area;
- Will not occur on Māori customary land;
- Will not occur on land set apart as a Māori reservation as defined in section 4 of Te Ture Whenua Māori Act 1993;
- Is not an aquaculture activity;
- Does not require an access arrangement under the Crown Minerals Act 1991;
- Is not an activity that would be prevented under section 165J, 165M, 165Q, 165ZC or 165ZDB of the Resource Management Act 1991;
- Will not occur on land that is listed in Schedule 4 of the FTAA;
- Will not occur on a national reserve held under the Reserves Act 1977;
- Will not occur on a reserve held under the Reserves Act that is managed by someone other than the Department of Conservation or a local authority;
- Is not a prohibited activity under the Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012 or regulations made under that Act;
- Is not an activity that is described in section 15B of the RMA or an activity that is prohibited by section 15C of the RMA;
- Is not a decommissioning-related activity; and
- Is not an activity undertaken for the purposes of an offshore renewable energy project.

Therefore, this substantive application is not for an ineligible activity.

9. APPLICATION STRUCTURE

This substantive application has been prepared to set out the relevant information as required under section 43 of the FTAA.

The application comprises the following parts:

Part A	Is this overarching substantive application document. The Appendix to Part A is a legal analysis of the FTAA framework, prepared by Buddle Findlay.
Part B	The substantive application for approvals that would be sought under the RMA.
Part C	The substantive application for concessions that would be sought under the Conservation Act.
Part D	The substantive application for approvals that would be sought under the Wildlife Act.
Part E	The substantive application for approvals that would be sought under the HNZPT Act.
Part F	The substantive application for approvals that would be sought under the Fisheries Regulations.
Part G	Contains a series of figures for the Southland Wind Farm Project.
Part H	Contains the reports (in evidence format) prepared by technical specialists on the Project and its environmental effects.
Part I	Contains the conditions Contact proffers for the inclusion on each of the various approvals being sought in this application.
Part J	Contains the management plans which set out measures necessary to assist with managing the environmental effects on the Project.
Part K	Contains the civil design drawings.
Part L	Contains details of land ownership of the Project Site and neighbouring properties, and all relevant Records of Titles for the Project.
Part M	Contains an assessment of compliance with permitted activities under the relevant RMA planning documents.
Part N	Contains the documents demonstrating that specific consultation / formal notification requirements have been met.

The various technical reports/evidence included in **Part H** of these application documents are listed in **Table 3** below. They are referenced throughout this application as necessary.

Table 3: Technical reports supporting this application.

Report #	Author	Topic	Reference within the Report
1	Simon Coates and Rachel Holden (Concept Consulting)	Electricity System Benefits of the Southland Wind Farm Project.	Concept Consulting (2025)
2	Peter Clough (New Zealand Institute of Economic Research)	Economic Framing and Impacts	Clough (2025)
3	Braddyn (Brad) Coombs (Isthmus)	Landscape, Visual and Natural Character Effects (1)	Coombs (2025)
4	Shannon Bray (Wayfinder)	Landscape, Visual and Natural Character Effects (2)	Bray (2025)
5	Nick Goldwater and Kelvin Loyd (Wildland Consultants)	Terrestrial Ecology and Wetland Effects	Wildlands (2025)
6	Gerardus (Gerry) Kessels (Bluewattle Ecology) and Ian Davidson-Watts (Davidson-Watts Ecology Ltd)	Long-tailed Bat Effects	Kessels and Davidson-Watts (2025)
7	Roger MacGibbon (Tonkin & Taylor)	Review of Terrestrial and Wetland Ecology and Ecology Offsetting and Compensation	MacGibbon (2025)
8	Greg Ryder and Ruth Goldsmith (Ryder Consulting)	Freshwater Ecology Effects	Ryder and Goldsmith (2025)
9	Luke Gordon, Ed Ladley, Lennie Palmer and Vaughan Martin (Riley Consultants Limited)	Construction Effects	Riley (2025)
10	Brooke James and Jonathan (Jon) Williamson (Williamson Water and Land Advisory)	Conceptual Hydrological Design, Southland Wind Farm at Jedburgh Station Plateau	WWLA (2025)

Report #	Author	Topic	Reference within the Report
11	Miklin Halstead (Marshall Day Acoustics)	Noise Effects	Halstead (2025)
12	Chris Rossiter (Stantec)	Transport Effects	Rossiter (2025)
13	Russel Cook (Origin Consultants)	Archaeology Effects	Cook (2025)