

# **SOUTHLAND WIND FARM – FREQUENTLY ASKED QUESTIONS**

## **RENEWABLE ENERGY**

### **What is renewable energy?**

Renewable energy comes from natural sources which are replenished at a higher rate than they are consumed. Renewable energy can be generated in a number of ways including solar, wind, hydro, and geothermal. In New Zealand about 85% of electricity generation comes from renewable sources; the remainder comes from fossil fuels which is rapidly shrinking. [Read more on renewable energy on the UN website here.](#)

### **Why does Aotearoa New Zealand need more renewable energy?**

New Zealand's demand for renewable electricity is expected to grow rapidly. Transpower (the national grid owner and operator) forecasts electricity demand will increase by 68% by 2050 and that 40 new large-scale generation and battery projects will be required before 2035<sup>1</sup>. This increase in demand will largely be driven by the increased use of electricity for heat in industrial processes (process heat), in space and water heating for buildings, and transport electrification<sup>2</sup>. Southland is forecast to be a region of high electricity demand in the future, as new industry and the electrification of existing primary industries will increase.<sup>3</sup> The Southland Wind Farm will help meet this growing demand, providing locally generated electricity that is clean, reliable and affordable.

## **WIND FARMS**

### **How much energy is produced by wind farms in New Zealand?**

Aotearoa New Zealand is blessed with a significant wind resource which is ideal for wind energy generation. Currently about six per cent of New Zealand's electricity is generated by wind. The performance of New Zealand wind farms is well above the global average, with capacity factors averaging 40%<sup>4</sup>. The use of wind as a resource for the generation of electricity in New Zealand is expected to increase significantly over the next few decades as it provides a cost-effective way to meet growing electricity demand<sup>5</sup>.

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<sup>1</sup> <https://www.transpower.co.nz/about-us/our-strategy/whakamana-i-te-mauri-hiko-empowering-our-energy-future>

<sup>2</sup> <https://www.bcg.com/publications/2022/climate-change-in-new-zealand>

<sup>3</sup> <https://www.bcg.com/publications/2022/climate-change-in-new-zealand>

<sup>4</sup> <https://www.windenergy.org.nz/generation#:~:text=Wind%20turbines%20in%20New%20Zealand%20operate%20about%2090%25,reasonably%20consistent%20on%20a%20quarterly%20and%20annual%20basis.>

<sup>5</sup> <https://www.windenergy.org.nz/the-cost-of-wind-energy>

## **How does a wind farm work?**

A wind farm is made up of wind turbines. When the wind blows, it passes over the wind turbine blades which generates lift – in much the same way as an aero plane wing or an America’s cup yacht. That lift force causes the wind turbine rotor to rotate, which drives the turbine generator, creating electricity. As the wind speed increases the lift force on the blades increases and consequently, more power and electricity are generated. Once the turbine reaches maximum power in high wind speeds, the blades rotate on their axis (pitch) to reduce lift and maintain a constant power output. The wind turbine continues to produce this output until the wind is too strong (about 90 km/h) at which point the turbine will shut down.

## **How much noise does a wind farm make?**

New Zealand has a legal standard to control the noise from wind farms. That standard sets out a methodology for predicting, measuring and assessing the sound from wind turbines.

The Southland Wind Farm will comply with the recommendations set out in that standard. Due to the significant separation distances between the proposed wind turbines and nearby landowners, the noise levels present at those neighbouring dwellings will be lower than those experienced by neighbours at many of the other operational wind farms in New Zealand. Acoustic modelling is currently underway as part of the resource consent application and will be shared when available.

Read more about the noise standard here: <https://www.windenergy.org.nz/sound-noise-standards>

## **How long does a wind farm last?**

We expect the wind turbines will have a design life of about 30 years. At that point, many of the major components will have used up their lifetime capability and we’d expect old turbines will be replaced with newer technology that should last for a further 30 years.

## **What do you do with the turbines at the end of life?**

Most of the wind turbine components can be recycled. World-wide, more effort is being put into recycling opportunities for wind turbine blades, as the number of turbines being re-powered increases. Contact will be continuing to investigate such options and utilise those in this project if available.

## **Is wind a good way to generate power?**

New Zealand relies on a range of fuel sources to meet its electricity demand. This includes wind, hydro, solar, geothermal, and some remaining gas and coal power stations. Wind is likely to make up an increasing share of new generation that is built to meet growing demand due to its cost competitiveness against all other forms of new generation types<sup>6</sup>. New Zealand is also very fortunate to have a strong foundation of flexible hydro generation assets that reduces the cost of integrating wind farms into the electricity system when compared with many other countries<sup>7</sup>. The falling cost of other technologies

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<sup>6</sup> <https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-statistics-and-modelling/energy-modelling/interactive-levelised-cost-of-electricity-comparison-tool/>

<sup>7</sup> <https://www.windenergy.org.nz/the-cost-of-wind-energy>

such as distributed and grid-scale batteries will help further integrate higher levels of wind into the system.

## **SOUTHLAND WIND FARM**

### **Why is Contact looking to build wind farms in this area?**

As New Zealand reduces the use of fossil fuels, there will be plenty of opportunities for wind power to be used in the Southland region. Having a diverse mix of generation is of benefit to the electricity system. Southland has a very good wind resource, which has been demonstrated through historical wind measurements in the area close to the proposed [Southland Wind Farm project](#) site.

### **How much electricity will the Southland wind farm generate and what will the power be used for?**

The wind farm is expected to produce between 900 and 1200 GWh per year of electricity, which is enough electricity to power 150,000 households. Southland is expected to have significant demand growth over the next few decades, and we need to ensure enough renewable electricity is available to meet these needs.

### **How much land will the wind farm occupy?**

At the base of each turbine there is a “turbine pad”, which is a flat area of approximately 90 m by 60 m (~0.5 hectares) that is used to store wind turbine components and for the installation crane to use when installing the wind turbines.

The integrity of this area needs to be maintained as it will also be used when a crane is required for turbine servicing or a major component repair - e.g. repairing lightning damage to a blade, gearbox replacement or generator replacement.

The total area of the turbine pads for about 50 turbines, together with the area of the approximately 60 km of wind farm access tracks required for the Southland wind farm, will occupy about 90 ha. This is approximately 1.6% of the 5,500 ha total wind farm land area.

### **What will the wind farm look like and how big are the turbines?**

Our current planning estimates there will be about 50 wind turbines as part of the Southland Wind Farm, with turbines located at elevations between 380m to 630m above sea level. We have used GIS mapping tools to put visuals together to indicate where wind farm turbines will be located, [you can check out the maps here](#). The wind turbine tower will be up to 135m high and the rotor diameter will be up to 170m wide, so the maximum 'blade tip height' will be up to 220m.

### **How fast does a turbine rotate?**

The turbines with the largest rotor diameter being considered (170m) will rotate at speeds between 5 rpm and 9 rpm.

### **Will we be able to visit the wind farm? Will there be a viewing platform?**

We would like to establish viewing locations that will provide the community and visitors with good views of the wind farm and information about the project. If you have a location that you think may work, please email us with the details.

### **BENEFITS FOR LOCALS**

#### **What benefits will the wind farm have for the local community?**

We will be actively looking at ways to support the community directly through the project and as part of the operational stages. This will include:

- Direct employment as part of the project
- Indirect economic benefits for local service industries
- Establishment of a community funding mechanism to enable community project and initiatives
- In kind contributions of Contact staff to help with local community projects
- Training and employment opportunities
- Sponsorships

Contact is developing specifics for this project and is interested in the local community's views on what is most important – please send your thoughts to [windprojects@contactenergy.co.nz](mailto:windprojects@contactenergy.co.nz).

#### **Will there be job opportunities at the wind farm?**

Yes, we see many direct opportunities for employment, both during construction and ongoing operations of the wind farm. During construction, a significant number of workers will be required in a variety of roles, including electricians, transport operators, concrete suppliers, civil engineering and road contractors. At its peak, the workforce is likely to exceed 200. Once operational, the wind farm will need more than 10 people full-time to keep things turning.

There will be further flow-on benefits for local businesses too as the project will bring demand for materials, services and labour. Keep an eye on our website for calls for interest for employment, local business and contract opportunities.

### **COSTS AND CONSTRUCTION**

#### **How much will the wind farm cost to build?**

We estimate the wind farm will cost between \$700 - \$900 million to build – this will depend on the final size of the project and type of wind turbine selected during procurement. Approximately one third of construction costs will be spent domestically, with much of this spending contained within the Southland Region.

#### **How long will the wind farm take to build, and when is construction due to start?**

If the project receives resource consent in a timely manner, we're expecting construction to begin in 2025. Construction is likely to take 24 months and then we would expect the wind farm to be operational in 2027.

## **Will the construction happen on weekends or during the week? And what time of day?**

Our construction activities will meet conditions set out in the resource consent which will include the requirement to meet the New Zealand construction noise standard. This standard has different night-time and weekend noise levels. Activities such as the wind turbine installation will be dependent on having lower wind speeds, so the installation crew will want to make the most of these weather conditions.

Hours are expected to vary throughout the project depending on timing, weather and requirements of councils and the roading authorities. Contact is committed to reducing disruption throughout the construction process and this will be addressed in the project planning and consenting.

## **CONSENT PROCESS**

### **What is involved in the consenting process for the wind farm?**

The project requires resource consent from a number of consent authorities. To apply, Contact will need to prepare an extensive Assessment of Environmental Effects which will cover all important aspects of the project, including ecology, visual impact, noise, economics, environmental management, and cultural effects.

Further on resource consenting can be found on the Quality Planning website:

<https://www.qualityplanning.org.nz/index.php/consenting/consenting>

### **Is there only one process this can be consented under?**

No, the Resource Management Act 1991 provides multiple pathways for a resource consent. Contact is still considering which is the best fit for allowing it to meet New Zealand's renewable energy targets as summarised below:

1. Standard RMA consenting process: This involves lodging an application with the relevant councils. The application is publicly notified, followed by a hearing and a decision by a person or panel selected by the councils. Depending on the outcome, the applicant or submitters can potentially choose to appeal the decision to the Environment Court. This process, including Environment Court hearings, can take between 6 - 24 months.
2. Direct referral process: This allows applicants to make a request to a Council, then a notified resource consent application is directed to the Environment Court. In this case, the Council publicly notifies the application and receives written submissions. The application is then transferred to the Environment Court for a decision, bypassing the Council hearing and decision stage. This process is intended to save time and costs for both the applicant and submitters. Once the decision is made by the Court, it can only be appealed on points of law. This process takes between 12-18 months.

Read about Direct Referral Here: <https://environment.govt.nz/assets/Publications/Files/direct-referral-guide-for-applicants.pdf>

3. 'Fast-track' consenting process: This process is undertaken in two stages. The first stage involves an application to the Minister for the Environment. If accepted, the applicant can then move to the second stage which involves lodging a resource consent application with the Environmental Protection Authority (EPA). The EPA will pass the application to an Expert Consenting Panel (including a lawyer, technical expert and a tangata whenua representative) to assess and decide the application. Participation is limited to those parties listed in the Fast-track Consenting Act (i.e. Councils, the Department of Conservation, Fish and Game, etc) and those named in an Order-in-Council which forms part of the first stage of the process. These parties are invited to make comments to the Panel. The Panel can decide if a hearing in the Environment Court is required. Generally, a decision on the project is made about six months after the application is provided to the Panel by the EPA.

Read about Fast-track consenting here: <https://environment.govt.nz/what-government-is-doing/areas-of-work/fast-track-consenting/>

Regardless of the consenting pathway taken, we will continue our engagement with local communities and mana whenua. We value strong and meaningful relationships in the communities where we operate – this is vitally important to us.

As part of our engagement, we've been talking directly with locals, hosted community drop-in sessions, and provided the latest project information [on our website](#). These activities will continue as we get further along with the project.

#### **Does the Fast Track process reduce my say on the project?**

Contact is committed to proactively engaging with the local community regardless of the consenting pathway that is taken. Contact is undertaking extensive consultation and consideration of this feedback will be reflected in our consent application and in our actions up to and after any consents for the wind farm. If a decision is made to use the Fast Track process, the expert panel convened by the EPA will determine who it will consult with, in determining whether to grant consent.

#### **What timeframe is the consent being prepared within?**

Contact has independent specialists undertaking assessments to input to the resource consent application and is aligning its consultation with the community when new and relevant information is available. We expect to lodge the application in October/November 2023.

### **LAND/ENVIRONMENTAL/WILDLIFE**

#### **How will you ensure the protection of wildlife on the wind farm site?**

Contact currently has independent experts completing surveys and assessments of the wind farm. Based on that, Contact will develop an approach to minimise any adverse effects that could be found and propose measures to mitigate, restore and offset those impacts as much as possible. Conditions in the resource consent and Wildlife Act approvals process will review recommendations made and impose requirements for Contact.

**What are the effects of wind turbines on the environment and wildlife, and how will you mitigate these?**

We are currently undertaking studies to inform us of the environmental impacts and expect to share these with stakeholders and community once completed. Of course, any impacts on local biodiversity birds, indigenous vegetation and waterways will be thoroughly assessed and tested as part of the consent process, and ways to avoid, remedy, restore and offset any such effects recommended by experts.

**COMMUNITY INFORMATION AND CONSULTATION**

**I live nearby, how will you keep me up to date about what's going on?**

We have set up a project webpage which we'll keep up to date as the project progresses, [check it out here](#). We are distributing regular e-newsletters too, [please contact us](#) if you would like your email address added to our distribution list. We're also planning regular community open days so will advertise these widely when they are coming up. We are always available to meet face-to-face if you would like to catch up too, just contact us to arrange a time.

**I couldn't make it to the community sessions, will you be doing any more?**

Yes, Contact is committed to keeping the community informed and updated as the project progresses. We intend to have further community sessions every few months. We will advertise these through emails, local newspapers and social media.

To make these sessions worthwhile for the community, we want to ensure we bring information that is relevant – got a suggestion? Please send this to [windprojects@contactenergy.co.nz](mailto:windprojects@contactenergy.co.nz)

**I'd prefer to speak directly to Contact about a specific matter though.**

We are more than happy to meet you to do so. Please contact us via the email or phone below and our project leads will be in touch.

**I have a question about the wind farm, how can I get in touch?**

For further information about this project, please contact our project team at:

- Email: [windprojects@contactenergy.co.nz](mailto:windprojects@contactenergy.co.nz)
- Phone: [0800 268 236](tel:0800268236) (this goes to our project team leads).