

**RESOURCE MANAGEMENT ACT 1991  
SECTION 96 SUBMISSION TO A NOTICE OF REQUIREMENT**



**TO:** Minister for the Environment  
Freeport Grid Upgrade Submissions  
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The Auckland Regional Council (ARC) makes this submission to oppose in part the Notices of Requirement (NOR) by:

Transpower New Zealand Ltd for:

- A new overhead transmission line from Whakamaru to Brownhill Rd, which will be 400 kV capable but operate initially at 220kV;
- Modifications to the existing substation at Pakuranga;
- Modifications to the existing substation at Otahuhu;
- A transition station / substation at Brownhill Rd;
- A 220kV underground cable section from the transition station/substation to Pakuranga substation;
- A 220kV underground cable section from the transition station/substation to Otahuhu substation.

**The particular parts of the Notices of Requirement that this submission relates to are:**

The entire proposal.

**The reasons for the Auckland Regional Council's submission are:**

**Regional Policy Context**

The Auckland Regional Policy Statement (ARPS) directly addresses the issues surrounding infrastructure provision, including electricity transmission. In general, the ARPS seeks to enable the provision of new regionally significant infrastructure while ensuring that any adverse effects on the environment are appropriately and fully addressed.

Policy 2.6.14 – Strategic Policies Infrastructure (as amended by the decision version of ARPS Change 6) is particularly relevant. This specifies that infrastructure planning shall consider and make appropriate provision for:

*"5. In the operation of existing regionally significant infrastructure and the provision of new infrastructure consideration and appropriate provision is to be made for the following matters;*

*(a) The avoidance of significant adverse effects (including cumulative adverse effects) on:*

- the environmental values protected by defined limits to metropolitan Auckland and defined limits of rural or coastal settlements;*
- significant and outstanding coastal and natural landscapes, vegetation and fauna areas;*
- amenity values throughout the whole of the region and the rural character of rural areas in the Region;*
- human health*

*Where significant adverse effects cannot be avoided they shall be remedied or mitigated;*

*(b) Avoiding prematurely foreclosing, or compromising options for future urban and rural and coastal town growth including areas identified in Schedule 1;*

*(c) Consideration of alternative locations (including locations in urban areas) for utility service facilities which give rise to significant adverse effects on the environment;*

*(d) Environmental enhancement and/or remediation opportunities."*

More detailed concerns are set out below, referenced against some of the relevant regional policies and plans.

### **Renewable Energy**

In accordance with the policy framework set out in Chapter 5- Energy of the ARPS as well as the Draft New Zealand Energy Strategy, a shift to renewable forms of energy over time is supported by the ARC. A shift towards renewable energy would require a strengthened transmission network to take account of the reliance on uncertain weather conditions of some forms of renewable generation. In terms of the Auckland Region it is clear that the majority of Auckland's electricity supply, whether renewable or non-renewable, will come from outside the region and rely on transmission infrastructure, for the foreseeable future. One conclusion of the ARC's June 2006 submission to the Electricity Commission on the Commission's draft decision was;

*"When planning upgrades of transmission infrastructure, there is a need to take a conservative approach and use high future demand predictions. There is also a need to ensure that transmission capacity does not act to constrain the uptake of renewable generation. This indicates that there is strategic economic value in additional transmission capacity, beyond that which might be considered adequate based on medium growth projections. The ARC therefore considers that 'spare' capacity should be attributed a reasonably significant value in investment decisions."*

### **Security of Supply / Diversification**

A secure supply of electricity to the Auckland Region with sufficient capacity to meet current and future demand is a fundamental pre-requisite to the social and economic objectives of the region. Partial or total losses to supply to the Auckland Region impose significant economic costs not only to the Auckland Region but to the whole country. Given the consenting timeframes and environmental hurdles involved with new generation and the lack of current known viable generation projects underway, it is not expected that significant amounts of local generation can be implemented before a time when a new transmission line of some form is required.

The proposed grid upgrade provides the opportunity to increase the security of supply to the Auckland Region. However, the new transmission line is still located in the vicinity of the existing Otahuhu- Whakamaru A, B and C lines and subject to a low probability high impact event such as a storm or tornado which may disable all lines which are in close proximity.

### **Urban and Rural Development- Metropolitan Urban Limits, and Future Growth Areas**

The proposed transmission line crosses land within the boundary of Manukau City District Plan Proposed Change 8 – Whitford Rural (Plan Change 8). Plan Change 8 places particular emphasis on maintaining and enhancing the rural character, landscape and amenity value in the plan change area. The landscape management response to development proposals in this area has resulted in district plan provisions which have sought to maintain and enhance the rural amenity values of the Whitford area.

Proposed District Plan Change 14- Rural by Franklin District Council (FDC) adopts a growth management approach for the rural parts of Franklin District, which seeks to focus growth in and around existing settlements. This plan change identifies the Hunua Township as a Rural Village, with the area on the immediate northern side of the township, extending to White Road being identified as a Village Structure Plan Area with potential for future growth. The proposed transmission line is located in close proximity to the Hunua Village.

The Auckland Regional Growth Strategy (ARGS) sets out the desired growth strategy for the Auckland Region through to 2050, however the life expectancy of the proposed transmission line may be 100 years or more. For this reason, it is necessary to assess the proposal against the possibility for urban and rural settlement expansion in this area within a 100 year timeframe or longer. It is considered that pylons of this scale are incompatible with urban areas and with both current and likely future rural residential areas located on Auckland's urban periphery.

### **Landscape Values**

It is considered that the proposed overhead transmission line will result in significant adverse landscape and visual impacts. The line route traverses an area on the western slopes of the Hunua Ranges, which has been identified as an area of Outstanding Natural Landscape (ONL) in the Auckland Regional Landscape Assessment Study 2004 and included in the

ARPS Proposed Change 8. The ONL identified in ARPS Proposed Change 8 that the proposed route traverse is ONL 62.

More generally, the route traverses various areas of rural character. The Operative ARPS Policy 6.4.19-2 states:

*"In those rural areas not rated as being outstanding or regionally significant landscapes and in urban areas, the elements, features and patterns which contribute to the character and quality of the landscape and to its amenity value, or which help to accommodate the visual effects of subdivision, use and development, shall be protected by avoiding, remedying, or mitigating any adverse effects on them"*

In summary, regional policy provides clear direction that overhead lines should avoid where possible outstanding or regionally significant landscapes and areas of rural character.

Given the distance from the proposed designation to the Hunua Regional Park it is not yet clear whether the use of monopoles could be used as a mitigation measure in this area, or whether lattice towers are in fact preferable. Transpower should provide more information prior to the hearing in this regard.

It is noted that Transpower has opted for Gas Insulated Switchgear (GIS) rather than Air Insulated Switchgear (AIS) at the Brownhill Rd substation in order to reduce the adverse visual impacts of the proposal. GIS is considered as being more reliable and will increase the security of supply. The ARC considers that the switchgear at the Pakuranga substation should also have GIS rather than AIS.

### **Hunua Ranges Regional Park**

The Hunua Ranges, much of which is in the Hunua Regional Park is a defining landscape feature of the Auckland Region. It is identified as an Outstanding Landscape in the Operative ARPS and as an Outstanding Natural Landscape (ONL) in the ARPS Proposed Change 8. Anything that threatens these characteristics is of considerable importance to the people of the Auckland region.

The proposed route passes within one to two kilometres of the regional park in places and is likely to be visible from a number of vantage points. These include the south western entrance to the park, the fringe tracks and Mangatangi trig. Furthermore, views towards the Hunua Ranges may be adversely affected including from highly used access roads such as Whites Road which provides access to the Hunua Falls scenic area. The view of the regional park from the Hunua Township is also likely to be obstructed by the overhead lines. Pylons located on the ridgeline to the southwest of the park, although outside the regional boundary, are likely to be highly visible from high points within the park.

The landscape assessment included with the application broadly covers the entire line route but does not contain detail on specific areas of concern for the ARC. It is therefore difficult to assess the full effects of the proposed development. Transpower should prior to the hearing undertake and

provide to submitters a more detailed landscape assessment including visual simulations of both monopoles and lattice towers from the locations of particular concern to the ARC.

### **Cultural Heritage**

The route alignment, apart from one small area at Mangatawhiri, has not been previously surveyed or assessed for historic places and areas. This means that without further assessment, presently unrecorded historic places and wāhi tapu may be adversely affected by the proposed Transpower activities.

There are approximately 15 historic places and areas within close proximity to the proposed line, with 6 of these falling within the route alignment. These include both Pre-European Maori occupation sites and sites reflecting the last 200 years of occupation.

### **Significant Ecological Areas**

There are a number of ecological areas along the line route that are significant in terms of Policy 6.4.7 - Evaluation of Natural Heritage of the ARPS. The values of these areas will, therefore, need to be protected from significant adverse effects of the proposal, in accordance with Policy 6.4.1-3 of the ARPS. There may also be a range of direct physical impacts through construction, for example, vegetation clearance for the access to and construction of the pylons.

### **Consideration of Alternatives**

It is considered that Transpower has not given adequate consideration to alternative methods. Particularly methods involving underground transmission cables.

The ARC has previously requested Transpower to progress both an underground and overhead option to the point of designation, so that the alternative could be fully evaluated against the proposal. The ARC recommended in its submission to Transpower on the Interim Preferred Route and in a submission to the Electricity Commission, that the underground cable extend from the Otahuhu substation to Sowerby Heights Road (near the southern entrance to the Hunua Ranges Regional Park).

The amended Transpower proposal now involves the underground 220kV cable extending from Brownhill Road to Pakuranga substation, a total of approximately 15 kilometres. Undergrounding to Sowerby Heights Road would involve a distance of approximately 35 kilometres (including the distance already proposed to be undergrounded).

While it is acknowledged that Transpower has undertaken several studies in relation to the technology and equipment required for 400kV underground cables, the ARC considers that these studies are preliminary investigations solely based on economic and technical matters, which were produced in relation to the Electricity Commission approval process rather than an RMA process. Several of these studies mention the fact that the use of 400kV underground cable is in its infancy around the world. These studies were all carried out in early 2005 and the ARC considers that they

**Relief sought****That the Board of Inquiry;**

- Confirm the importance of enhancing the security of supply to the Auckland Region
- Recommend that Transpower withdraw the NoR for Manukau City Council and Franklin District Council, for the overhead section of transmission line between Brownhill Rd and Sowerby Heights Rd.

**The Regional Council does wish to be heard in support of this submission.**

Signed for and on behalf of the

**AUCKLAND REGIONAL COUNCIL**

Hugh Jarvis  
**Acting General Manager, Regulatory Services**

Dated on the 5th day of October 2007

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should be updated to reflect recent data concerning reliability and repair times. While these studies consider the extension of a 400kV cable south of the previous transition station in Ormiston Rd, Whitford they do not appear to consider the extension of the cable at 220kV.

An underground option could be expected to overcome the local and regional concerns relating to the landscape and amenity impact and social disruption. The ARC considers that Transpower should also prior to the hearing, undertake and provide to submitters an up to date comparative risk assessment study of overhead lines and underground cable along the overhead line route which considers economic and technical matters as well as environmental effects.

In the event that the Board considers that further undergrounding is justified but that the length of undergrounding requested by the ARC is inappropriate, the Board should recommend that the NoR relating to the relevant section of line should be withdrawn. The ARC considers that the Board should then provide direction that in any future NoR application undergrounding within the Auckland Region should be prioritised in favour of;

1. Proximity to Outstanding Natural Landscapes (ONL), Regional Parks, and any other areas of significant recreational value,
2. Ardmore Aerodrome,
3. Future Growth Areas

#### **Ardmore Aerodrome**

The ARC had previously expressed concern to both Transpower and the Electricity Commission that the location of the proposed pylons is a potential hazard to air traffic due to the proximity of the Ardmore Aerodrome, which is regionally significant infrastructure. The AIRBIZ study included as part of the application has 6 recommendations for dealing with potential hazards. The ARC does not support two of those recommendations which will cumulatively add to potentially unacceptable landscape and visual effects. They are;

- *Marking the proposed transmission line in selected areas near Ardmore aerodrome with appropriate devices*
- *Lighting of selected supporting towers in the vicinity of Ardmore with appropriately ground shielded lights/ strobes*

The extent of measures to reduce aviation risks presents a compelling argument to underground the Ardmore section within the flight path of the Ardmore Aerodrome. The proposed mitigation measures which involve marking the line and up lighting towers are not supported