

BEFORE THE INDEPENDENT HEARINGS PANEL

Under the Resource Management Act 1991 and the Canterbury Earthquake
(Christchurch Replacement District Plan) Order 2014

In the matter of

The Proposed Christchurch Replacement District Plan – Chapter 14 (Residential Proposal - Part)

And

Transpower New Zealand Limited (Submission 832 and Further Submission 1331)

Submitter

**Statement of Rebuttal Evidence of Roy Noble for
Transpower New Zealand Limited dated 25 March 2015**

BELL GULLY

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Executive Summary

1. Orion New Zealand Ltd (**Orion**) suggests that the corridor sought by Transpower is best practice and seeks to apply the corridor to its 33kV and 66kV assets and an 11kV asset.
2. In my view, the corridor Transpower seeks would not be considered best practice – it is not what would be sought by overseas-based utilities, nor what Transpower seeks for new build. For new build, Transpower would seek a clear corridor that related to the maximum swing of the conductor (among other matters).
3. Instead, the corridor Transpower seeks relates to the NPSET requirements. It is the minimum corridor required to not compromise operation, maintenance, upgrade and development of Transpower's assets. The corridor width is based on a technical assessment of Transpower's assets relational to the everyday wind conductor position. It takes into account the need to preserve reasonable use of private land that Transpower's assets are on, and is limited to activities that cause the most issues for Transpower.
4. I am concerned that Orion has put forward Transpower's NPSET derived corridor as being "one-size fits all", so that it could be applied to its overhead 66kV lines and a number of its 33kV lines and an 11kV line. Orion's assets are generally quite different from Transpower's assets.

Introduction

5. My full name is Roy John Clement Noble. I am the Asset Engineering (Lines) Manager with Transpower New Zealand Limited (**Transpower**). My relevant experience, qualifications, and commitment to comply with the code of conduct were set out in Appendix A to my evidence in chief dated 20 March 2015.
6. I confirm that I am authorised to give this evidence on behalf of Transpower.

7. My evidence will clarify the difference between Transpower's assets and Orion New Zealand Ltd's (**Orion**) assets in light of the evidence of Shane Watson on behalf of Orion.

Transpower's approach to Corridor Protection

8. At paragraph 12.4 of Mr Watson's evidence, he states:

"...Transpower has developed best practice guidelines for the protection of its grid assets. Transpower has used these guidelines to develop the corridor protection rules that they seek to be included in the CRDP in relation to their line assets."

9. In comparison to overseas utilities, Transpower's corridors would not be classified as best practice widths. Overseas utilities typically have much wider cleared right of ways.
10. The compromise that Transpower has reached for its own high voltage transmission assets has been developed to give effect to the NPSET, and reflects the controls that Transpower considers necessary for the protection and operation of the National Grid. This corridor has not been developed for Transpower's new build. Nor has it been developed for distribution assets and the controls that Orion may need to operate and maintain its network.
11. The 12m corridor (either side of the centreline)¹ sought by Transpower is based on statistical analysis of Transpower's structures, using structure widths, heights and span lengths. Transpower has refined this calculation over time in an effort to find a compromise solution to the tension between maintainability of the lines and not unduly constraining the underlying land. Only sensitive activities and those activities that compromise the ability to maintain the assets are restricted from establishing in the area directly under the conductors during an everyday wind conductor position.

¹ Referred to as a "National Grid yard."

Differences between Orion's lines and Transpower's lines

12. At paragraph 12.6 of Mr Watson's evidence, he states that:

“Given the similarity in operations in relation to high voltage lines between Transpower and Orion, we believe the width exclusions Transpower seeks for its line assets should apply to Orion”

13. In my opinion while there may be some similarity between Orion's 66kV network and Transpower's high voltage network, there is very little similarity between the scale of Orion's 33kV and 11kV network and Transpower's high voltage network.² **Photo 1** below shows a comparative example of the difference in scale between a National Grid 220kV line and a 33kV distribution line that Orion is requesting be subject to the same corridor.

14. The effects which the National Grid 12m corridor (either side of the centreline) addresses³ would, following the application of Transpower's specific corridor width calculation methodology to Orion's assets, lead to significantly reduced corridor widths for any Orion protection corridors. This is because structure heights, span lengths and cross-arm dimensions all result in a much narrower everyday wind conductor position.

² Orion's sub-transmission network – of 66kV is of course similar to Transpower's network – albeit that it is these assets that Transpower is in the process of divesting.

³ In order to give effect to policies 10 and 11 of the NPSET.



Photo 1 – Comparison of 220kV versus 33kV structures

15. In addition, following a review of the maps provided in Appendix 1 of Mr Watson's evidence, I note that the majority of the 33kV lines subject to Orion's corridor protection request are located within road reserves. Examples of these are shown in Photos 2 and 3 below.
16. I note that the location within the road reserve provides a reasonable existing level of protection, in a location where development and underbuild is not permitted, and there is sufficient accessibility for maintenance purposes.



Photo 2 – 33kV line in urban road corridor



Photo 3 – 33kV line in a developing residential/industrial zone

17. In summary, the application of a 12m corridor (consistent with Transpower's high voltage corridor) to Orion's lines would appear to

apply inappropriate corridor protection widths under everyday wind conditions.

Conclusions

18. Transpower has calculated corridors for National Grid lines using a pragmatic approach to give effect to the NPSET and reflect the controls that Transpower considers necessary for the protection and operation of the National Grid. Orion suggests that this same corridor should be applicable to some of its distribution network. However, allowing the same corridors to be applied to Orion and included in the Replacement Plan would not follow the same principles as those applied by Transpower in arriving at its requested corridor.



Roy John Clement Noble
25 March 2015