MEMO

MARSHALL DAY Acoustics

Project:	Upper South Island Reliability Project	**Document No.:**	Mm 001 R01		
To:	Boffa Miskell	**Date:**	12 March 2019		
Attention:	Maurice Dale	**Cross Reference:**	-		
Delivery:	Email	**Project No.:**	20170642		
From:	Aaron Staples	**No. Pages:**	3	**Attachments:**	Yes
Subject:	Response to RFI				

Timaru District Council has requested further information[1] relating to the Notices of Requirement and consent for new substations associated with Transpower's Upper South Island Reliability Project (USIRP). The noise-related queries are provided below in italics, followed by our response.

5. Section 8.6 Noise p62

(i) The MDA report on noise generally uses "L_{Aeq}" in its assessment. Can you please confirm if there will be compliance with the Timaru District Plan noise limits which are measured in L_{A10} and L_{AFmax}.

We confirm that the Timaru District Plan noise limits (both L_{A10} and L_{AFmax}) will be comfortably achieved. The recommended noise limits provided in our Assessment of Noise Effects report are based on a review of national and international standards and guidelines for environmental noise. These standards and guidelines use the L_{Aeq} metric which represents industry best practice.

(ii) The operational noise assessment appears to refer to the transformers on the substation sites only. Is the noise generated by the conductors particularly during times of high winds or atmospheric conditions relevant, and if so, what are the likely noise levels and degree of effect?

Based on the information provided by Transpower (refer to Appendix A) regarding noise from transmission lines, noise emissions from modern transmission lines is generally less than 20 dBA beyond 40 metres from transmission lines. This level of noise is very low and we do not anticipate any adverse noise effects to arise as a result.

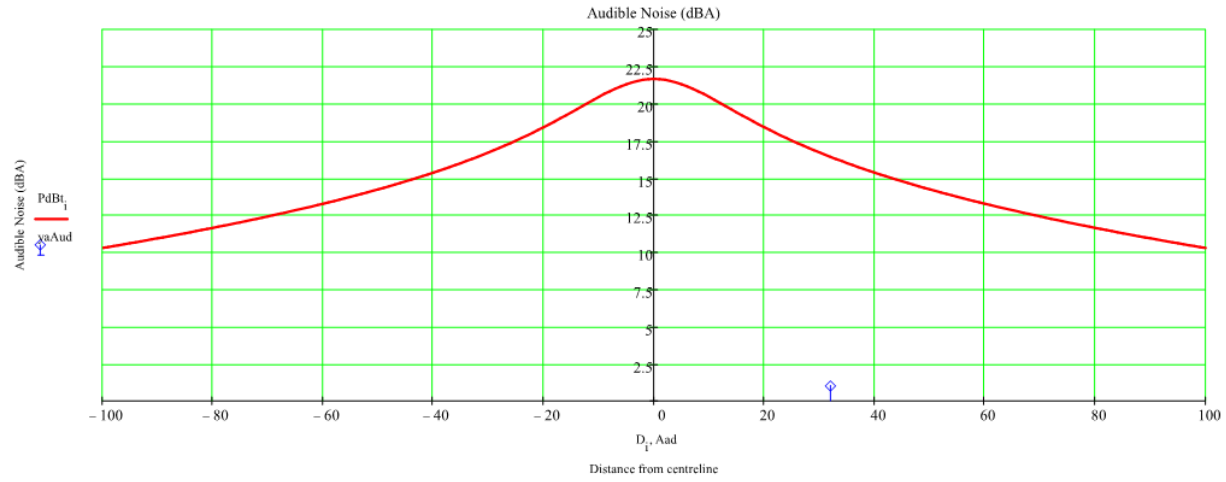
Wind-induced noise generated from transmission lines may be audible during periods of strong winds. However, strong winds result in significantly elevated background noise levels (primarily due to the movement of tree branches and leaves) which masks wind-induced noise from transmission lines to an extent. We therefore do not anticipate any adverse noise effects to arise as a result of wind-induced noise from transmission lines.

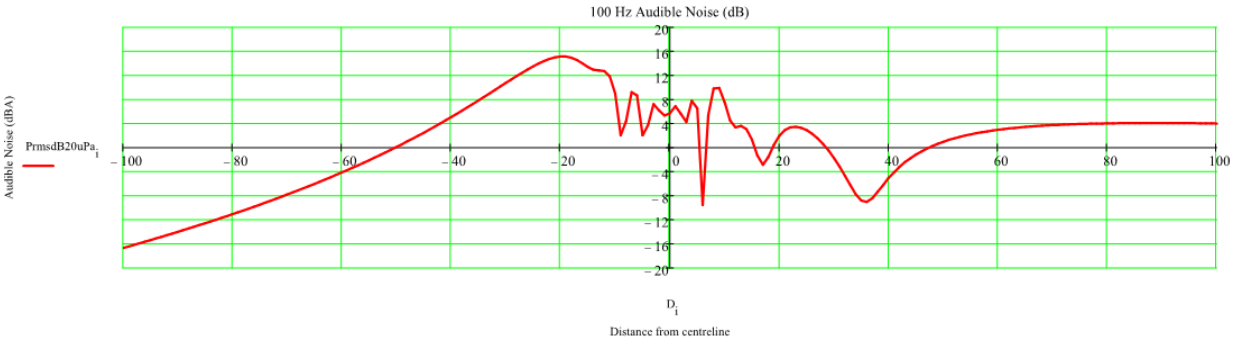
We trust this information is satisfactory. If you have any further questions, please do not hesitate to contact us.

[1] Section 92 Request for Further Information letter from Timaru District Council, dated 12 February 2019.

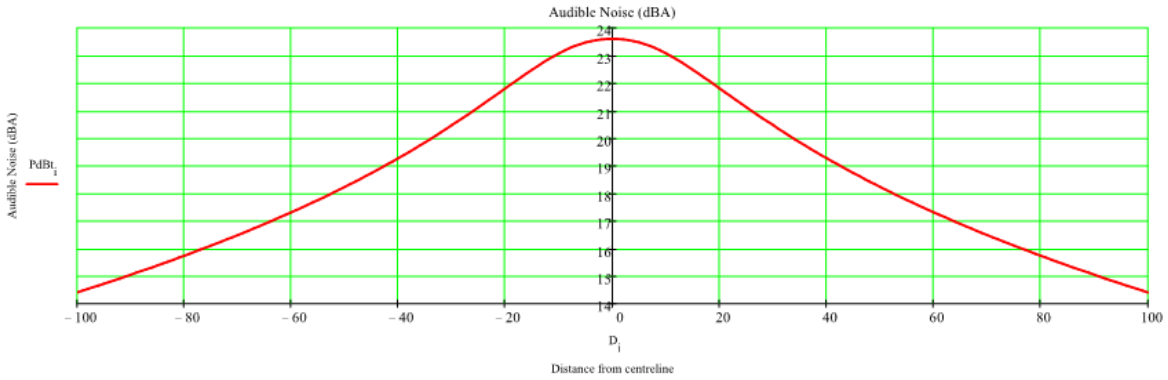
APPENDIX A TRANSMISSION LINE NOISE DATA (PROVIDED BY TRANSPOWER)

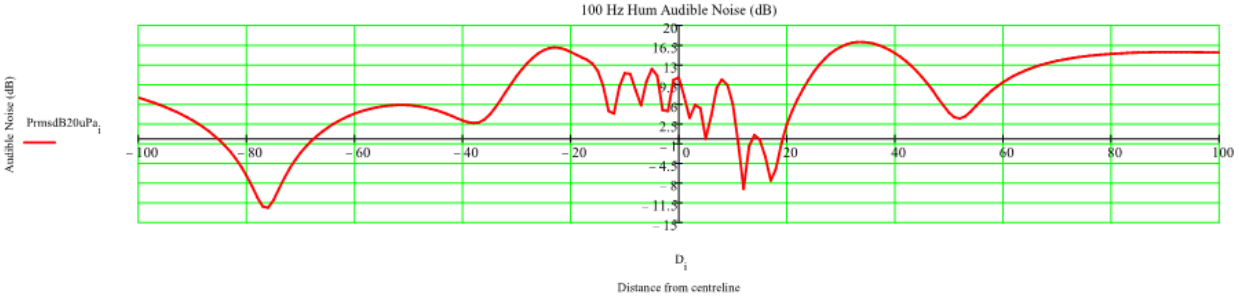
A1 Single-Circuit Three-Phase Transmission Line: Orari-BEN-ISL-A Duplex Goat ACSR 70°C





A2 Double-Circuit Three-Phase Transmission Line: Orari-CHH-TWZ-A Duplex Zebra 75°C





A3 Single-Circuit Three-Phase Transmission Line: Orari-ROX-ISL-A Duplex Goat ACSR 75°C