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Submitted via email to usi@transpower.co.nz


Orion submission – Upper South Island short-list consultation

Introduction

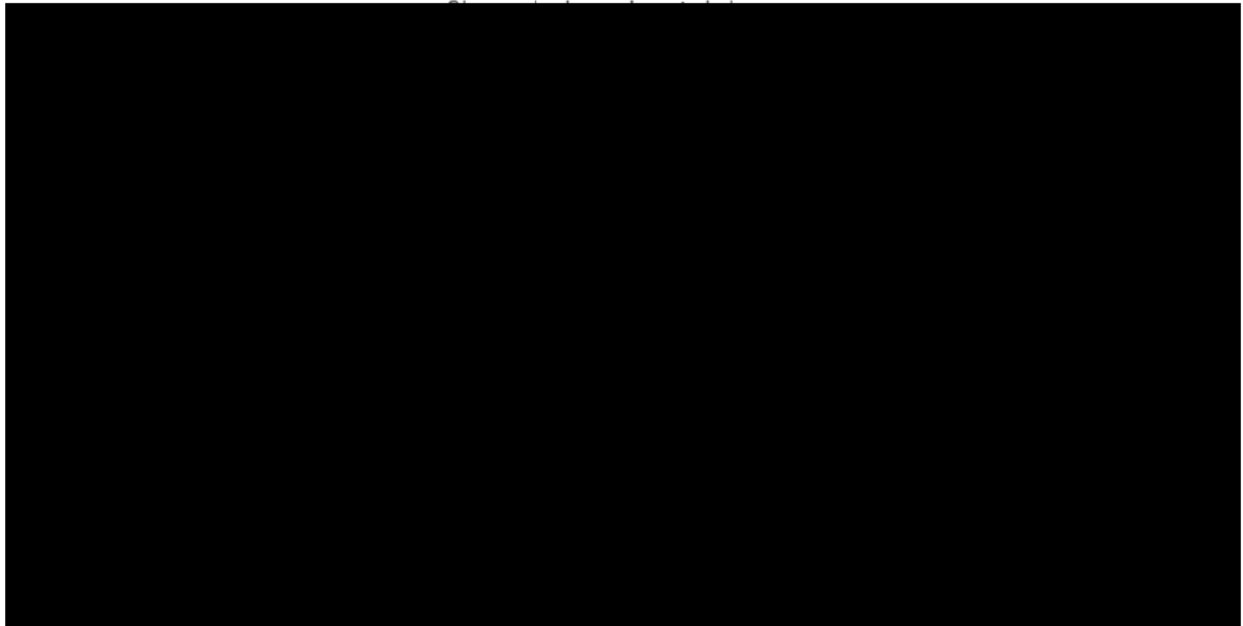
- 1 Orion welcomes the opportunity to submit on the consultation paper ‘Upper South Island short-list consultation.’¹
- 2 Parts of this submission contain confidential information, and a redacted version has been provided for public disclosure.
- 3 Orion owns and operates the electricity distribution infrastructure in central Canterbury, including Ōtautahi Christchurch city and Selwyn District. Our network is both rural and urban and extends over 8,000 square kilometres from the Waimakariri River in the north to the Rakaia River in the south; from the Canterbury coast to Arthur’s Pass. We deliver electricity to more than 229,000 homes and businesses and are New Zealand’s third largest Electricity Distribution Business (EDB).
- 4 We have reviewed the consultation paper, and our specific responses to the questions posed by Transpower, as well as other feedback we consider appropriate to the consultation, are set out below.

Transpower questions

Q1: Are there any additional factors we should consider regarding our identified investment need in the Upper South Island?

- 5 Orion submits that existing voltage imbalances should be considered as part of the Upper South Island upgrade project design. 

¹ [USI Upgrade Project short-list consultation](#)



- 6 Orion submits that addressing voltage imbalances at the transmission level would likely be more cost effective, in the long-term, than implementing multiple downstream solutions. Specifically, we recommend that Transpower consider moving the implementation of STATCOMs for voltage balance improvements into Stage 1 works.
- 7 Orion submits that Transpower should also consider potential future harmonic issues to ensure that any grid reinforcements do not inadvertently exacerbate this issue.

Q2: Since our long-list consultation, do you have any additional information that could materially affect our electricity demand forecast or generation assumptions?

- 8 Orion submits that significant solar generation development in our network area may affect the timing and nature of future network and grid constraints. We have approximately 1100MW of planned generation projects in our Connection pipeline, with approximately 150MW of solar generation committed and under construction. This level of solar penetration could shift peak constraint periods toward summer months, and may require specific consideration in the upgrade design.
- 9 Orion submits that the transition from traditional ripple-only load control to shared control arrangements, using both ripple and smart meters, may affect future network and grid operations. We note retailers are increasingly trialling smart meter-based load control. These developments could impact both Orion's and the broader Upper South Island's load management operations, particularly regarding the availability and coordination of controllable load between distributors and retailers for network management. We recommend Transpower consider this evolution and its implication on grid operations and constraints when finalising the upgrade design.²

² Orion has been an active participant in leading the development of the sector's common Load Management Protocol (LMP), working collaboratively with the "Big 6" EDBs through the Electricity Networks Aotearoa (ENA). This collaborative working group has established standardised requirements for coordinating controllable load during System Emergency Events, ensuring consistent emergency response practices across EDBs and retailers, while supporting both traditional ripple control and emerging smart meter technologies. For further information, and to view the slides and a recording of the first industry webinar, please refer to <https://ena.org.nz/fnf/>.

Q3: Do you agree with our application of short-listing criteria to reduce the long list of components?

10 Orion submits that the short-listing criteria and their application appear appropriate and reasonable.

Q4: Do you agree with the development plans we've shortlisted?

11 Orion submits that while the short-listed development plan represents generally appropriate solutions to address the identified needs, we recommend reconsidering the staging of certain components. Specifically, we suggest that the implementation of STATCOMs to improve voltage balance should be brought forward into Stage 1 works, rather than being deferred to Stage 2 of Option 2. This recommendation is based on our observation of persistent voltage imbalance issues in our network.

12 While this may increase the initial project costs, we believe the long-term benefits of addressing voltage balance issues earlier would outweigh the costs by reducing the need for multiple downstream mitigation measures.

Q5: Do you have any feedback on the parameters we intend to use in our application of the Investment Test?

13 Orion submits in support of the parameters that Transpower intends to use in the application of the Investment Test.

Q6: Do you have any feedback on our analysis of the quantified costs and benefits for this project?

14 Orion submits that Option 2 appears to be the most reasonable approach, though we note a potential discrepancy between Option 2 costs presented in the various documents. Specifically:

14.1 Table 1 of the main consultation document shows a \$157.6m capital cost over the period to 2050.

14.2 Table 4 shows Stage 1 costs of \$77.2m capital cost.

14.3 However, Table 4 of Attachment 2 presents a "High-level cost of full development plan (2028 – 2050)" for Option 2 of \$140m.

15 Given these figures are all presented in present value 2024 dollars, we would expect the total cost figure to be consistent across documents. We request Transpower clarify this potential discrepancy and confirm which figure should be used for evaluation purposes.

16 Orion submits that further clarification of potential Stage 2 costs for Option 2 is needed. Specifically, we seek confirmation from Transpower that the difference between the two figures (\$80.4m) in Tables 1 and 4 of the main consultation document represents the present value of potential Stage 2 investments that may be required after 2031.

Q7: Do you have any feedback on our qualitative assessment of the short-listed options?

17 Orion submits in support of the qualitative assessment of the short-listed options.

Q8: Is our conclusion that Option 2 (two switching stations) offers the greatest net benefit reasonable?

18 Orion submits in agreement that Option 2 offers the greatest net benefit for consumers.

Q9: Do you agree that our preferred option remains robust under sensitivity analysis?

19 Orion submits in support.

Q10: Is our selection of the preferred option reasonable?

20 Orion submits in support.

Concluding remarks

21 If Transpower has any questions or queries on aspects of this submission which you would like to discuss, please contact me on 03 363 9898.

Yours sincerely,



Connor Reich

Regulatory Lead