TransGrid's Response to AER Request for Information- HumeLink

Date received:	12 October 2021
Date responded	18 October 2021
Topic	HumeLink (PEC) RIT-T
RFI	3.0

Questions

In order to assist us in assessing the dispute raised by Wunelli Pty Ltd (Wunelli) on Humelink RIT-T Project Assessment Conclusions Report (PACR), please provide the following additional information:

1. Based on the information provided in Humelink PACR, we understand that option 1C (a 'direct path' between Maragle and Bannaby) ranked third best option among the seven credible options assessed for Humelink RIT-T. The PACR indicates that option 1C may deliver a transfer capacity of around 2510MW with an approximate capital cost of $3,065m (including $1,340m biodiversity costs). We also understand that the PACR considered double circuit variant of options 2C and 3C whereas only single circuit variant was considered for option 1C despite all three of these options providing marginally similar transfer capacities.

   a) *Please provide reasons why a full double circuit variant of option 1C was not considered in the PACR.*

   Transgrid conducted a screening step on the different circuit configurations for the top performing network topologies, and confirmed that Route 2 and 3 (i.e. Option 2C and Option 3C) will have higher net market benefits than Route 1 (Option 1C).

   Both Options 2C and 3C have higher gross benefits since they provide a wider footprint via Wagga Wagga as compared with Option 1C. These options (Options 2C and 3C):

   - access additional capacity for new renewable generation in south west NSW; and

   - allow the additional transfer capacity between South Australia / Victoria and NSW provided by the proposed EnergyConnect project to flow to NSW major load centres;

   Option 1C (as in the PACR) involves a 138km double circuit component west of Bannaby with the remaining 136 km being two single circuit lines. Option 1C has lower net market benefits than the equivalent arrangements described as Option 2C and Option 3C. The reduction in cost of Option 1C from the proposed single circuit and double circuit combination to 100% double circuit is less than the reduction in cost of Option 2C or 3C through moving to full double circuit configuration. Therefore, Option 1C double circuit variant is not considered further in the PACR.

b) *Please provide a breakdown of biodiversity costs associated with option 1C. In particular, explain whether a full double circuit variant of option 1C is likely to reduce the estimated biodiversity costs for option 1C and the overall capital cost of the option. If so, provide reasons on how this may affect the overall ranking of the credible options assessed in the Humelink PACR.*

Credible options assessed in PACR	Line Segment	Segment Configuration (single or double circuit)	Indicative length assumed (include latitude/longitude or provide geographic map)	Total Cost of segment ($real FY20)	Breakdown of biodiversity costs associated with the route ($real FY20)
Option 1C PACR Estimate	Bannaby to Maragle	500 kV 2 x single Circuits	30	454	283
	Chatsbury to Gobarralong	500 kV Double Circuit	138	1,257	540
	Gobarralong to Maragle	500 kV 2 x single Circuits	106	1,043	474
Option 1C 100% double circuit	Bannaby to Maragle	500 kV Double Circuit	274	2,429	846

All figures provided in the table above are for Line Segments and exclude Substation costs as well as biodiversity costs associated with Substations. The overall ranking still maintains that Option 3C has the highest ranking (highest net market benefit), even when Option 1C 100% double circuit is considered.

c) *In addition, please explain how uncertainty regarding different routes assumed for the purposes of estimating the capital costs of option 1C may impact the cost benefit assessment and hence, the ranking of the credible options assessed in the PACR.*

TransGrid's contingency model, The Hollmann model (refer previous Information Request response) was applied to the project costs for all HumeLink options. The Hollmann model treats uncertainty in a consistent manner, and produces a P50 estimate which is used to rank the different options in the PACR.

Therefore it is unlikely that uncertainty regarding different routes of option 1C would change the cost benefit assessment or the ranking of the credible options in the PACR.

TransGrid