

TransGrid's Response to AER Request for Information- HumeLink

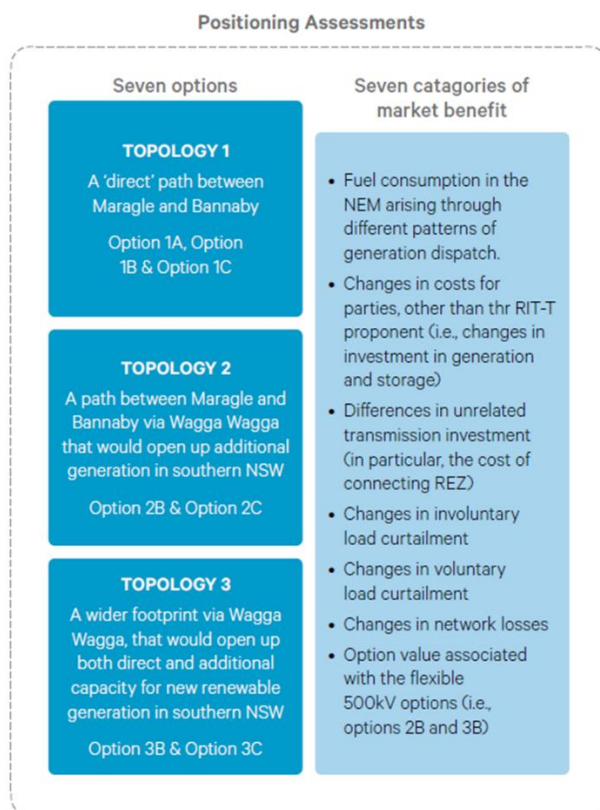
Date received:	26 August 2021
Date responded	1 September 2021
Topic	HumeLink (PEC) RIT-T
RFI	1.0

Questions

1. Treatment of route diversity in exploring credible options and determining the preferred option in the PACR. In particular, please provide details on whether alternate route lengths or configurations of the credible options and the preferred option were explored and how this impacts the cost benefit analysis in the PACR.
 - a. In its dispute notice, Wunelli has referred to a 'high diversity option' which it alleges was not explored in the Humelink RIT-T PACR despite providing cost savings with reduced possible route lengths. Please confirm whether TransGrid explored a similar credible option in its PACR? If so, please provide details on how it affects the cost benefit analysis in the PACR.

The PACR considers various network configurations known as electrical circuits. It considers the capacity, reliability, and cost of each credible option in assessing the net market benefits to identify the top-ranked option.

The PACR focuses on seven electrical circuit options, each of which could be delivered via various line route options. The PACR considered different circuit configurations (i.e. 330 kV to 500kV) of the top performing network topologies and operating capacities. This is shown by Figure E.1 of the PACR, replicated below for ease of reference.



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Our assessment included circuit distance comparisons using consistent data, which identified that topology Option 2C and Option 3C provide significantly higher net benefits than the other options. The technical assessments which contributed to the PACR have identified double circuit as the preferred option for 3C.

Specifically, we have investigated:

- > three variants of the preferred network topology and operating capacity in the PADR and PACR analysis, i.e., Option 3C:
 - Option 3C, constructed as 100 per cent double-circuit configuration. This is indicatively the shortest comparative route length as two circuits are constructed on one double circuit transmission tower i.e. one line of towers
 - Option 3C-0, constructed as a 100 percent single-circuit configuration. This is indicatively the longest comparative route length as each circuit is constructed on one single circuit transmission tower i.e. two lines of towers built in parallel, and
 - Option 3C-1, constructed primarily as a single-circuit configuration but with a 132 km double-circuit portion west of Bannaby.
- > two variants of the second-ranked network topology and operating capacity in the PADR and PACR analysis, i.e., Option 2C:
 - Option 2C, constructed as 100 per cent double-circuit configuration; this is indicatively the shortest comparative route length as two circuits are constructed on one double circuit transmission tower i.e. one line of towers, and
 - Option 2C-1, constructed primarily as a single-circuit configuration but with a 132 km double-circuit portion west of Bannaby.

The approval by the AER of our initial CPA will enable us to undertake the activities to specify the preferred route. This includes community and stakeholder consultation on line route specifics and preparation of an Environmental Impact Statement (EIS) under the NSW planning approval pathway, managed by the Department of Planning, Industry and Environment (DPIE).

2. Please provide details on the indicative route assumed for the preferred option and other credible options in the PACR for the purposes of estimating costs, and provide a breakdown of the estimated biodiversity costs associated with the preferred option in the PACR. In particular, please advise whether these cost estimates cover the costs associated with different routes that may be determined in post RIT-T processes.

Please see our response to question 1 above for relevant background on development of the preferred option.

All circuit options considered in the PACR are based on circuit lengths defined by the required nodal points and provide comparable costs across all options. The estimated biodiversity costs for the preferred option, 3C is \$953m. The capital costs used in the PACR are 'P50' estimates, i.e. there is equal probability of the cost being above or below these estimates.

As noted above, the preferred route will be identified by the activities undertaken as part of our initial Contingent Project Application (CPA) including the planning approvals process (specifically EIS).

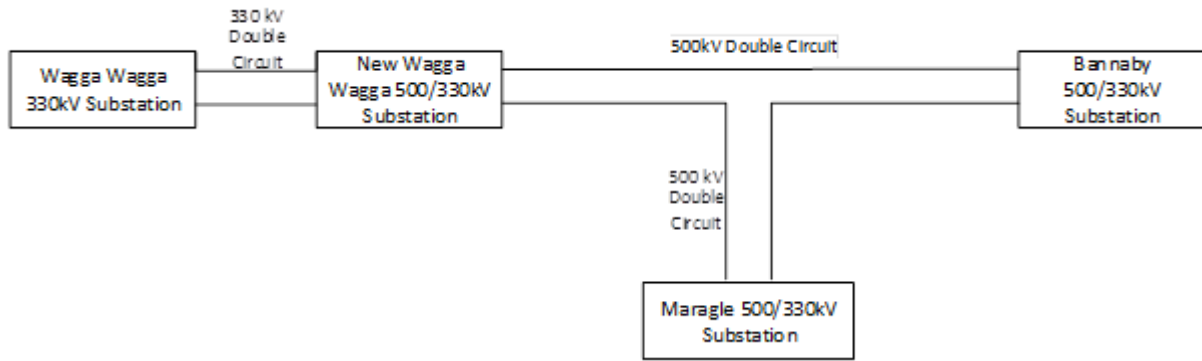
As the Project progresses and the route is defined, the forecast delivery cost will be updated. Should the forecast cost increase above the cost estimate in the PACR, then we will seek AEMO's feedback loop confirmation that the Project remains on the optimal development path at that cost prior to submitting our final CPA. Our final CPA will include the final forecast delivery cost based on the specified route.

3. We understand that the PACR refers to the preferred option as a 500kV double circuit electrical 'loop' between Maragle, Bannaby and Wagga Wagga. Please confirm whether the preferred option includes a complete double circuit loop between the three connection points or a combination of double circuit and single circuit sections along the proposed routes.

The preferred option 3C includes a complete double circuit configuration between all three substation locations (see diagram below for further details), which represents the shortest comparative route line length and therefore the least cost economically and technically feasible option at this point of the development process.

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