20 June 2025

Transpower
By email: grid.investments@transpower.co.nz

HVDC Link Upgrade Programme Short-list Consultation

Meridian appreciates the opportunity to comment on Transpower's suite of papers for the HVDC Link Upgrade Programme short-list consultation. Meridian supports the proposed replacement of the HVDC cables and the option to upgrade the HVDC link's capacity to 1400 MW (Option 3).

Meridian agrees that investment is necessary in key components of the link in the early 2030s to safeguard this critical infrastructure and address the ageing condition of the HVDC submarine cables. It is necessary to invest to address the significant risk of failure that would otherwise exist with aged assets. Prolonged HVDC outages would lead to unacceptable disruptions to New Zealand's electricity supply and result in significant economic losses including costs to New Zealand consumers and electricity market participants. In Meridian's opinion, investment to address this risk is vital.

Meridian also agrees that there is an opportunity to enhance the HVDC link's capacity from 1200 MW to 1400 MW. This increase in capacity would involve a relatively minor increase in costs ($110 million in present value terms by Transpower's estimate) and would likely result in benefits to consumers that exceed that cost.

Meridian has not undertaken its own detailed modelling on the consumer benefits of the enhanced 1400MW HVDC capacity, but we agree in principle that increasing the transfer capacity would likely reduce reserve costs and enable the HVDC to play a key part in firming intermittent generation in the North Island. Given the magnitude of intermittent generation

investigations in the North Island market it is likely that consumers would benefit from greater HVDC capacity. In addition, investing to increase HVDC capacity and reliability could help to unlock further renewable generation development opportunities in the South Island.

Meridian queries whether Transpower should adopt the most recent 2024 EDGS as the basis for its modelling. In Meridian's opinion the 2019 EDGS are out of date and contain some unrealistic assumptions such as:

- the availability of North Island gas to support thermal generation investments in the North Island; and
- extremely low rates of solar uptake.

It may be that Transpower's variations address some of these outdated assumptions. However, we encourage Transpower to further consider the 2024 EDGS as the basis for the investment test.

Meridian's support for an enhancement to 1400MW of HVDC capacity is subject to developing a more fulsome understanding of the costs and benefits, and receiving clarifications from Transpower on several matters, including:

- Further details regarding HVDC outage durations and scheduling, including the benefits of combining outages across projects. It is not clear to Meridian how the cost of these outages has been factored into the modelled costs and benefits. While it makes sense to minimise outage periods by combining a number of projects this may bring forward or extend outages at higher cost in the near term. We note that Transpower has stated it will "engage with customers and stakeholders as we develop the programme of required outages, with sufficient notice to minimise potential impacts." Meridian supports this occurring as soon as possible.

- Clarification regarding the impact of the proposed investment on current charges under the Appendix A BBI charges for the HVDC. It is not clear to Meridian whether BBI charges for the existing HVDC assets will cease at end-of-life when assets are replaced. It would be useful if Transpower could provide a breakdown of the assets covered by the existing HVDC BBI charges and whether and how those charges would be impacted by the proposed investment i.e. will new charges replace existing HVDC charges (in whole or in part) or will new charges following the proposed investment be additional to existing HVDC BBI charges?

- Meridian is grateful for the indicative allocations provided at this early stage. However, to enable even more informed input via this consultation it would be useful for participants to have an indicative range of charges. It is challenging for participants to estimate this independently due to the complexity of the covered cost methodology and unknown inputs such as Transpower operating expenditure that may be attributable to these investments.

- Clarification regarding whether the proposed investments would alleviate any of the current operational limitations that are reliant on cable discharge times and other physical traits, on the HVDC – such as the reserve sharing limits. It would be useful to understand whether any control system improvements are included in the scope, alongside the planned capacity upgrade.

- Further details regarding the scope of the project to carry out upgrades on the cable termination stations. In recent history, the industry has experienced several outages caused by salt spray buildup on insulators, requiring urgent remedial outages. Meridian queries whether consideration been given to relocating the termination stations further inland to reduce exposure to coastal conditions and mitigate this recurring risk.

Meridian looks forward to further clarification of these points and to Transpower progressing this programme of work.

Please contact me if you have any queries regarding this submission.

Nāku noa, nā

Sam Fleming
Manager Regulatory and Government Relations