1 June 2023

Electricity RMA Project Team
MBIE Energy & Resource Markets
25 The Terrace, Wellington 6011
By email to ElectricityRMA@mbie.govt.nz

ENA submission to the consultation on strengthening national direction on renewable electricity generation and electricity transmission

Electricity Networks Aotearoa (ENA) appreciates the opportunity to submit on MBIE and MFE's consultation on *Strengthening national direction on renewable electricity generation and transmission*. ENA is the industry membership body that represents the 27 electricity distribution businesses (EDBs, sometimes called lines companies) that take power from the national grid and deliver it to homes and businesses. The ENA harnesses the collective expertise of members to promote safe, reliable and affordable power for our members' customers.

ENA's interest in this consultation is limited to the treatment of high-voltage electricity lines (i.e., transmission lines) within the NPS-ET and NES-ETA. Therefore, our submission focuses on the questions in section 12 of the consultation material – please see our responses to these questions attached to this letter as Appendix A.

Please don't hesitate to get in touch with ENA if you'd like to discuss our submission. Contact Richard Le Gros (richard@electricity.org.nz, 04 555 0075) in the first instance.

Yours sincerely,

Richard Le Gros
Acting Chief Executive
Electricity Networks Aotearoa

Appendix A – ENA response to section 12 questions

12. Questions on high-voltage electricity lines

12.1. Do you agree that electricity transmission provisions that apply to the national grid should be extended to also cover high-voltage transmission lines not owned and operated by the national grid?

Yes ENA agrees that the electricity transmission provisions should be broadened to apply to any high-voltage transmission lines, irrespective of ownership.

Where Transpower does not own an high-voltage transmission line, in most cases, the line will be owned by an EDB. These lines carry out the same function within the wider electricity system as those owned by Transpower and, therefore, should be covered by the same enabling provisions.

12.2. In your view is 110 kV an appropriate threshold for determining high-voltage transmission?

In order to enable greater electrification of Aotearoa New Zealand, including the connection of new renewable electricity generation, it is vital that the planning regime be as enabling of new build electricity distribution networks as possible. Much of this new build (e.g. to support renewable electricity generation and process heat conversions) will occur at voltages lower than 110kV, and so the appropriate threshold for determining high-voltage transmission should be set at a lower voltage level. Alternatively, an additional definition – perhaps 'key sub-transmission' or simliar – could be introduced with identical enabling provisions to those for high voltage transmission.

These enabling provisions are especially important where key sub-transmission lines are installed, or need to be installed, outside of the road reserve. Where this is the case the consenting process can be highly challenging for EDBs, and this in turn introduces uncertainty, cost and delay, all to the determinant of electricity consumers and those wishing to connect distributed renewable electricity generation. Where renewable electricity generation is located far from the road reserve, as wind farms often are, or where the route taken by the road reserve is unsuitable (e.g. windy and narrow), then it is critical that the electricity distribution assets needed to connect that generation are enabled by the NPS-REG and/or NPS-ET.

Some existing operating examples in New Zealand that show that 110 kV is not an appropriate threshold are the 58 MW White Hill wind farm connected to PowerNet's 66kV sub-transmission network in Southland and the 64 MW Te Uku wind farm connected to WEL's 33 kV sub-transmission network in the Waikato. These are clearly substantial renewable energy generation power stations and key to New Zealand's renewable energy efforts. They were not able to be developed at 110kV due to the substantial costs at that voltage level, however they were able to be supported at the sub-transmisison level. There are many smaller hydro and wind generation sites across New Zealand that have been developed at the sub-transmission level.

ENA has conducted a prelimilnary survey of it's EDB members to get an approximate figure for what percentage of overhead electricity lines are installed outside of the road reserve by common operating voltages.

	11kV	33kV	50 + 66kV
Median percentage of line length outside road reserve	46%	63%	53%

The figures above are from a representative sample of 11 EDBs, but is still a fairly rough approximation. ENA is willing to carry out a more robust and comprehensive survey of this information, if it would be of benefit to MBIE and MfE in their deliberations. ENA also notes that, because of the extensive nature of the electricity distribution networks, even relatively small percentages of lower voltage lines outside the road reserve still represent significant absolute lengths of line – 100s to 1000s of kilometres.

In ENA's view it is necessary to either:

> Set the threshold for determining high-voltage transmission to at least 33kV, and there is a strong argument to be made that it should be as low as 11kV.

OR

> Introduce a new definition, with identical policies and rules to those associated with high-voltage transmission, called 'key sub-transmission' or simliar. This new definition should apply to all electricity network assets operating at volatges between 11kV up to but not including 110kV. The threshold for high-voltage transmission should be set to 110kV, as proposed in the consultation.

As noted above, ENA is happy to engage with MBIE and MfE on this point in more detail, including providing more rigorous distribution network information if necessary.

12.3. Are there any technical or other differences that policymakers should be aware of that could result in unintended consequences?

ENA does not see any scope for significant unintended consequences to arise from either of the changes proposed above.

12.4. Please provide any evidence or examples to support your view.

As stated in our response to question 12.2, ENA and its members are willing to carry out a more robust and comprehensive survey the lengths of electricity distribution networks, by voltage, that are installed in and outside the road reserve. This could also encompass planned new lines to support decarbonisation and electricifcation related activities.

As a separate but related example, one of ENA's larger members has provided figures showing that the vast majority of applications they receive for significant distributed generation and process heat connections are at the 33-66kV and 6.6-11kV levels – 60% and 40% respectively for large-scale distributed generation applications.

12.5. Please provide any comments about this section.

ENA notes that the recently-published Climate Change Commission advice to government on the second emissions reduction plan encourages the introduction of policy to:

- Prioritise and accelerate renewable electricity generation build and ensure electricity distribution networks can support growth and variability of demand and supply.
- Pursue more widespread process heat decarbonisation and establish mechanisms for other industrial sectors and processes to decarbonise

Making the changes that ENA has proposed in this response will support both these outcomes.

Appendix B – ENA Members

Electricity Networks Aotearoa makes this submission along with the support of its members, listed below.

Alpine Energy
Aurora Energy
Buller Electricity
CentraLines
Counties Energy
Firstlight Network
Electra
EA Networks
Horizon Energy Distribution
Mainpower NZ
Marlborough Lines
Nelson Electricity
Network Tasman
Network Waitaki
Northpower
Orion New Zealand
Powerco
PowerNet
Scanpower
Top Energy
The Lines Company
Unison Networks
Vector
Waipa Networks
WEL Networks
Wellington Electricity Lines
Westpower