



meridian

6 July 2009

Siobhan Procter
Manager Economics and Approvals
Transpower
PO Box 1021
Wellington

Dear Siobhan

Upper North Island Reactive Support Investigation Project

Meridian Energy ("Meridian") welcomes the opportunity make a submission on the Upper North Island Reactive Support Investigation Project by Transpower.

Meridian's views on favouring a more robust national grid in order to provide security of supply and facilitate retail and generation competition are well known. Meridian appreciates the future need for more dynamic voltage support equipment in or north of Auckland, and supports investment that will improve security to the Upper North Island and improve the robustness of the national grid.

Meridian is currently developing a number of potential generation project proposals north of Auckland and if implemented, these will assist to provide dynamic voltage support to the Upper North Island in the medium to long term.

One of these potential developments is Pouto Wind Farm. It is a potential wind farm development with a 250 MW to 500 MW peak output. It is likely that Meridian would use full converter output wind turbine generators (WTGs) for this development with full STATCON like dynamic voltage support. In gaining familiarity with West Wind wind farm the System Operator is becoming familiar with the excellent dynamic voltage support that modern wind farms can provide. The System Operator has DigSilent power system models of the West Wind WTGs, and Meridian could modify these as required for investigation into its potential developments in the Upper North Island. The wind farm would connect to the Henderson to Marsden 220 kV line and provide very robust voltage support to the Upper North Island. The dynamic reactive power range would be in the order of +150/-250 Mvar to +300/-500 Mvar. This range may dynamically increase when the grid voltage is off-nominal, and the full dynamic reactive power range would be available whether the wind farm is generating active power or not. There may also be additional static reactive support equipment installed.

If standalone dynamic reactive power supply devices are installed in the Upper North Island in the near future, our concern is that they may become largely redundant if a large wind farm with flexible dynamic voltage support facilities is also commissioned. This investment would be inefficient.

Unfortunately, Meridian can not provide any certainty about its future Upper North Island generation proposals as they have a number of hurdles to overcome, however in the interests of efficiency we wish to inform you of these potential developments as they may influence your choice of options.

Please contact 04 381 1374 in the first instance if you would like further detail on Meridian's potential developments in the Upper North Island.

Yours sincerely,

A handwritten signature in black ink, appearing to read "G. W. Salmon". The signature is written in a cursive style with a large initial "G".

Greg Salmon
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