



VNI West PADR Submission

September 2022

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VNI West RIT-T
AEMO/Transgrid

Submission to the AEMO/Transgrid VNI West Project Assessment Draft Report

Smart Wires is pleased to make this submission in response to the AEMO/Transgrid VNI West Project Assessment Draft Report (PADR). As the leading provider of modular power flow control (MPFC) solutions, we welcome the opportunity to provide our unique and valuable perspective on employing modern power flow control technology to improve the capability and utilisation of the Victoria to New South Wales transmission network, in particular regarding maximising the benefits provided by the network augmentations proposed within the VNI West PADR. In doing so, we hope to contribute to the development of a more effective and efficient solution to address the future electricity supply needs of Victoria and New South Wales, enabling the integration of greater quantities of renewable energy as the National Electricity Market (NEM) transitions to a low emission renewable energy future.

Inclusion of modular power flow control in the VNI West preferred solution

We affirm the decision outlined in the PADR to include MPFC as an integral part of the preferred solution for the VNI West project, recognising that it represents an appreciation of the significant role that MPFC can take in developing an optimal and flexible transmission grid that is responsive to the needs of a transitioning power system. The modular and controllable nature of the technology provides an adaptable solution that can be scaled and adjusted over time. In the context of the VNI West project, this means a ‘least-regrets’ investment that can respond to the future needs of the evolving power system where future power flows will be less certain due to the variable nature of renewable generation.

We also note the market benefits being provided by the installation of MPFC under the existing VNI project as well as the potential benefits of including MPFC in other developing ISP projects such as the Victorian Western Renewables Link, the New South Wales Sydney Supply Ring, and the New England REZ Transmission Link, to provide maximum capability and economy from the planned infrastructure developments.

Acceleration of MPFC installation to realise early benefits

We would like to suggest that there are potential market benefits that could be gained by installing MPFC *prior* to the development of the new major transmission infrastructure under the VNI West project.

The MPFC that is proposed to be included as part of the VNI West project will control power flows to address constraints that would otherwise occur on the existing circuits that are in parallel with the planned new 500 kV infrastructure. In particular, this includes the 330 kV and 220 kV circuits between Upper Tumut and Lower Tumut, through Murray to Dederang, and then to Thomastown. However, existing constraints along this corridor, such as the 'V>>N-NIL_HA' and 'V>>N-NIL_HG' constraints, are experiencing an increase in the number of constraint hours and accumulated marginal value over the last couple of years. As thermal generation continues to retire over the next few years, the incidence of these constraints limiting flows of renewable power may be expected to increase. The early installation of MPFC intended for the VNI West project could then provide benefits to the market by allowing additional renewable generation to be dispatched and shared between regions, while also increasing future supply reliability. It is therefore recommended that constraints such as these be monitored and that their forecast occurrence following expected upcoming coal generation closures be investigated to inform the possibility of an economic advancement of any of the VNI West MPFC installations.

We hope that this submission assists in the planning and deployment of MPFC technology as part of the VNI West project and would welcome the opportunity to discuss our ideas and provide any further information or support that would help develop the power flow control options for the VNI West project. We look forward to continuing to work with AEMO and Transgrid as the project progresses.



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