

**Submission
No 291**

**INQUIRY INTO FEASIBILITY OF UNDERGROUNDING
THE TRANSMISSION INFRASTRUCTURE FOR
RENEWABLE ENERGY PROJECTS**

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Revised Submission: Victoria to NSW. Interconnector West

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Member of Murray River County Council (Electricity) ;1983 -1991;

Deputy Charman 1984-1985; Chairman 1988-1991)

NSW Parliament; Standing Committee on State Development .RE:
Inquiry into the feasibility of undergrounding the transmission
infrastructure for renewable projects as it affects NSW.

To The committee.

Precis: Of all the important portfolios in a state governments administration those that commence with the letter E are the most important. Infrastructure expenditure supporting these portfolios is critical. Accountability for every dollar spent is vital and measurement of the effect of that expenditure too our constituents is paramount. Segments of the communities of Edward River and Murray River Local Government areas most affected by the VNI west proposal urge the NEM to rethink, reorganize and redesign its network plans as circumstances and opportunities to utilise renewable generation across borders evaporate in the face of the dictates of climate change, increased population and political imperatives. Much has changed to the outlook for Victoria being 50% reliant on renewable energy by 2030. Little dispatchable power if any will be available for the VNI West interconnector to NSW (Kerang/Jerilderie) or vice versa via the chosen route until vastly increased renewable energy supplies are developed. Extending Victorias high voltage transmission line south of the Murray and planning for an interconnector at red cliffs optimizes the future Victorian renewable energy supplies. Development of renewable energy generation west of the Jerilderie longitude in either State will take considerable price manipulation to entice consortium (foreign or domestic) investment. Therefor regardless of the risk of floods, and fire engulfing the line or the damage to neighboring land and environmental assets, social amenity issues, there appears no need from a NSW perspective to build the interconnector (VNI West {Kerang/ Jerilderie}) in either design format (HVAC or HVDC). If deemed absolutely necessary then HVDC is preferable but ultimately both States should concentrate on building transmission lines that accommodate future and proposed renewable energy projects on either side of the Murray River westward to the Red Cliffs interconnection location.

Background.

- (1) The National Electricity Market {NEM} is a complex sophisticated manually operated electricity generation, transmission, distribution and wholesale network situated predominantly on the east coast of Australia (1)
- (2) The NEM commenced operation in 1998, making a major change from 100 years of historical, mostly state oriented ownership, regulation and politics of management of electricity in Australia. {1}
- (3) State Governments (SA){Vic} have been quick to capitalize on these developments with some even dismantling their own generation capacity relying instead on dispatchable power and inertia coming from other States.
- (4) The prime reason as stated in Transgrid documents (3) for the VNI West (crossing of the border) is to increase (presumably NSW) access to Victorias renewable energy sources.
- (5) However, AEMO Victoria has allocated most of the renewable energy from Bulgana to Melbourne consumers. AEMO Victoria has also identified an emerging need to bolster its Victoria Murray River distribution zone. Little if any dispatchable power will be available for the interconnection to the NSW Murray Link with SA via the VNI West proposal until vast new projects are built in the Vic Murray renewable zone.
- (6) The main arterial circuit (500KV) and the sub arterial (220kv;132kv and 66Kv circuit) and the capillary system -depend on each other holding relative potential difference and inertia.
- (7) "SA on the other hand, once it closed its coal plants relied for inertia on Victoria's brown coal plants as well as its own gas turbines. (2) Given that Victoria has itself closed one of its major brown coal generators, SA now must rely on NSW generators via Murray Link and Heywood interconnector from Victoria for inertia.
- (8) Route development for the double- circuit 500kV is authorized by NEM as a development of national importance and as such it should

comply rigidly to the four values – Economically – efficient, practicable and achievable; observe Cultural assets and issues (First Nations and indigenous Australians); and be cognizant and aware of Australian social and Environmental values.

- (9) The Victorian AEMO shifted the route of the VNI West to the Kerang sub-station, {concerns from Vic AEMO about Murray River west stability} and the Murray River Council subsequently rapidly disqualified the initial proposed River crossing downstream of Moama on the bases that there were significant Social, economic and environmental concerns. MRC had 12 months to make this observation!
- (10) Moulamein and District have only received 3 weeks' notice to provide submissions calling for a rethink and rerouting of the VNI West from Kerang to near Moulamein and thence easterly to the proposed Dinawan substation north of Jerilderie.
- (11) It would seem that following developments in population growth planned in the major Victorian cities and non-development in renewable energy supplies within Victoria's renewable energy zones, the proposed route cannot be justified nor can the connection be made via a 500kV double circuit transmission line as there is Not enough dispatchable power planned or available.
- (12) The current proposal is routed through valuable agricultural country, prone to fire risks and flooding and is a sizable (>500Km) deviation from the first route via Moama.

- (13) *In countries like Australia that are prone to bushfires and dust storms, underground HVDC interconnectors offer at least three key benefits." Solar quotes"*
- (14) *(i) Underground Transmission lines can never be accused of being the cause of bushfires.*
- (15) *(ii) In the event of a bushfire within the vicinity of an underground HVDC interconnector, the interconnector will continue to operate, as opposed to above ground interconnectors being required to switch off. "Solar quotes"*

(16) (iii) *A HVDC link is controllable to the point where the operator can specify the exact amount of power they wish to transfer through the line! "Solar quotes"*

Conclusion:

- The second preferred route (Kerang/Mellool/Moulamein/Wanganella/Boonoko/Dinawan) for the VNI West is the most **expensive** option that traverses in a hop scotched fashion, equally valuable agricultural, cultural and social assets as well as, traverses high-risk fire, dusty and flood prone country.
- This route has been thrust unethically upon Moulamein and district residents and ERC residents, with short notice to object.
- The whole interconnector project fails to update its reasons for the need to make the interconnection HVAC double circuit 500Kv from Bulgana Vic and the proposed Dinawan substation north of Jerilderie NSW as compared to a HVDC transmission line.
- Transgrid has failed to demonstrate the use of alternative designs (multiple low voltage AC interconnections/and or HVDC) and review the objectives of the NEM in areas of high fire, dust storm and flood prone/risk areas.
- The affected Communities of the MRC and the ERC suspects that Victoria is making a grab for dispatchable power supplies from NSW to boost its green credentials and even gain an economic advantage on the spot market!

Recommendation:

That the NEM and Transgrid revise their plans (for the NSW to Victoria interconnector) as a result of changes in planned population growth, development of Victorias renewable energy capacity and Federal Parliament dictates and further, give recognition to the current proposed routes impact on economic, cultural, social and environmental issues (water, forests, fire flood risks & endangered species) and developments in the measured transmission of high voltage electricity via DC interconnectors and or Multiple lower voltage interconnectors between State distribution networks .

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- (1) John Noonan – reneconomy; Ac verses DC: Why Australia should rethink its network plans.
- (2) Peter Farley
- (3) (3) Transgrid; People, Power, Possibilities