Submission No 204

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

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14th July 2023

The Hon Emily Suvaal, Committee Chair,
Inquiry - Feasibility of undergrounding the transmission infrastructure for renewable energy projects
Standing Committee on State Development
Parliament House
6 Macquarie Street
SYDNEY NSW 2000

Dear The Hon Emily Suvaal MLC,

Re: Feasibility of undergrounding the transmission infrastructure for renewable energy projects
a) the costs and benefits of undergrounding
b) existing case studies and current projects domestic and international
c) any impact on delivery timeframes
d)environmental impacts of undergrounding

Thank you for the opportunity to make a submission to this important inquiry into the feasibility of undergrounding transmission infrastructure for renewable infrastructure projects.

It is indeed thanks for the establishment of an inquiry to relieve the angst of the rural residents, to air the absence of genuine discussion for the potential generation of renewable energy and the means by which to transmit same.

It is of interest to note that there is a corridor for undergrounding transmission as in the 'Inland Rail' corridor. Why has the one disruption not been considered for utilised to its fullest, in carrying the undergrounded transmission lines between the states?

The rural sector has been maligned as NIMBY, except that we note with interest the new alarm being raised around off shore EGW and its potential to "spoil the visual amenity" of coastal dwelling individuals and the dilemma over spoilt views in Manly for a 15 m communication tower.

We are not NIBY but air genuine concern to ensure retention of capacity for the Net Primary Production (measured in kg/ha) to supply food and fibre for local consumption as well as to international trade.
There is a total failure of 'social licence' that emanates around the whole of all governments' anticipated outcomes of the renewable energy sector. Not only is national security threatened by partner engagement to develop the industry but also failures around; The 'Moral Hazard'; supplying coal overseas while allowing deletion of coal fired power stations; willingness to mine any minerals, without exception, for components – just not coal for domestic use and disregard for the terms of the Modern Slavery Act 2018.
While other governments move toward including nuclear into the energy mix Australia is recalcitrant toward an expectation in this regard, despite acceptance by many constituents.

SUBMISSION CONSIDERATIONS

a) the costs and benefits of undergrounding

- It has to be noted that experience from longer term International practices, other governments are electing to engage in the practice of undergrounding based on analysis of all-inclusive costs, especially environmental and social costs as they are able to conclude that undergrounding transmission is ultimately the cheaper solution, in the long-term.

- HVDC underground transmission, such as that proposed for undergrounding HumeLink for instance, has fewer transmission losses than the AC overhead lines. In consideration of the extent of transmission lines

proposed the offsetting energy efficiency benefits over the life of the project would appear to be warranted although the figures must be substantiated by expert evidence.

- Undergrounding is also a transmission methodology of choice because of benefits including but not limited to:
  - no risk of underground cables causing a fire;
  - significantly in an Australian environment, no restriction or hazard to safe firefighting;
  - an added benefit given protection of infrastructure from severe weather and fire events;
  - when expertly installed adds no impediment to regular agricultural operations;
  - minimal, temporary impact on the landscape and amenity;
  - properly installed at depth with appropriate backfill, should inflict only temporary dislocation of shallow aquifers in delicate environments and
  - significantly reduces impact on biodiversity due to the smaller easement being required

- Given the presumption of the reduced cost of electricity through adoption of renewable energy, as spruiked by Government, it is critical that a better environmental option for transmitting electricity, like undergrounding, isn't rejected on the basis of cost.

The benefits to the environment and communities of undergrounding will outlast the memories of the current generations as opposed to the daunting prospect of a web of wires.

b) existing case studies and current projects domestic and international

- In Australia, private companies regard undergrounding transmission as practical options, i.e.
  - Projects such as Murraylink, (180km); Directlink; Powering Sydney's Future Project - Transgrid 330kv underground 20km (Potts Hill to Alexandria); Marinus Link, 90k; Star of the South, 60-80km

  - International Projects such as SuedLink, 750km 525kV – renewables Germany; SuedOstLink, 500km 525kV ; California burying 10,000 miles of powerlines to reduce wildfire risk after the fact; Champlain Hudson Power Express (CHPE), renewables Canada - New York

c) any impact on delivery timeframes

- The likelihood of acceptance by the community will work for the government and Transgrid to assist in ensuring a better delivery timetable. For instance accept the words of farmers at Tumut who say: '*If HumeLink goes underground, Transgrid can start tomorrow, and we'll even dig the trench for them*'. The contentious aspect of the projects will remain the interaction of proponents for social licence with regards the siting of EGW technology.

- Project planning, project by project , including Snowy 2.0 is significantly delayed thereby allowing a timeframe for the adoption and acceptance of undergrounding without causing serious project disruption.

- AEMO's own modelling, allows for 2028-29 in the Step Change scenario; and 2033-34 in Progressive Change scenario.

- If undergrounding is rejected, because it will take longer to build, Transgrid must be held to account given that Transgrid has worked against the community on Undergrounding HumeLink – stalling and misleading government across the life of the project.

d) environmental impacts of undergrounding

- . Undergrounding will achieve greatly reduced environmental impacts in comparison to Overhead infrastructure
- Reduction in easement requirements i.e.15m in comparison to a 70m easement for overhead lines;
- Reduction in requirements for the removal of trees and plant flora;
- Reduction in endangered species types being dislodged /.killed.
- Only temporary disruption of land above underground cable infrastructure which can be rejuvenated after construction;

- Reduced numbers of towers and wires and EMR interfering with flight patterns of birds. Thus eliminating concern for protected birds , thus leaving the EGW wind turbines to defend their eagle blender technology;
- Removes a risk of overhead lines causing and contributing to bushfire.
- Removes the elongated hazard to air and ground fire controls;
- Reduces the risk of interrupted power transmission in severe weather events, thereby improving transmission security and resilience
- Reduces impact and access requirements to private and public land once construction is complete;
- Limits interruption to agricultural operations, machinery use, irrigation, drones, or aircraft operation to the EGW technology invited by landowners;
- Likewise limits impact and loss of visual amenity, rural landscape and character of regions to the EGW invited by landowner hosts;
- Reduced implication of electromagnetic field impacts and by implication, risk of serious health impacts; interruption to new technologies like precision agriculture and communication technology that improve the productive efficiency of agriculture and the quality of life for residents.

As highlighted in my submission there are some advantages in minimising the extent of impact from the extensive length and height of transmission despite many other failures across the scope and planning associated with the "Climate Club" endeavour to progress towards implementation of renewable energy.

I urge the Standing Committee to recommend that undergrounding is the best way forward for renewable energy transmission in NSW. As we continue with a mission towards 'net zero' in the interests of saving the planet, it is prudent to be at least environmentally responsible in one aspect of the endeavour towards transmission, even if not in generation.

Yours sincerely,