

Submission
No 140

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

Name: Name suppressed
Date Received: 13 July 2023

Partially
Confidential

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

12 July 2023

Dear The Hon Emily Suvaal MLC,

Re: Feasibility of undergrounding the transmission infrastructure for renewable energy projects

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

I would like to draw your attention to the considerable costs and benefits of undergrounding transmission lines:

a) the costs and benefits of undergrounding

- Internationally, governments are choosing undergrounding based on analysis of all costs, including environmental and social costs and conclude that undergrounding transmission is the cheapest long-term solution.

- HVDC underground transmission, proposed for undergrounding HumeLink, has less transmission losses than AC overhead lines, and so has offsetting energy efficiency benefits over the life of the project.

- Undergrounding is also chosen due to its benefits including:

- o no risk of underground cables causing a fire;
- o no restriction or hazard on safe firefighting;
- o protection of the infrastructure from severe weather and fire events;
- o will not impede agricultural operations;

o no impact on the landscape and amenity; and

o significantly reduced impact on biodiversity as a much smaller easement is required

· Our governments are telling us that renewable energy, like solar and wind, will reduce the cost of electricity. Given this, it's 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 last for generations.

b) existing case studies and current projects domestic and international:

· In Australia, private companies are putting transmission underground.

- Existing projects

- Murraylink, 180km

- Directlink

- Powering Sydney's Future Project - Transgrid 330kv underground 20km (Potts Hill to Alexandria)

- Current Australian projects

- Marinus Link, 90km

- Star of the South, 60-80km

- International Projects

- SuedLink, 750km 525kV – renewables Germany

- SuedOstLink, 500km 525kV

- California burying 10,000 miles of powerlines to reduce wildfire risk

- Champlain Hudson Power Express (CHPE), renewables Canada - New York

c) any impact on delivery timeframes:

· Undergrounding will grant Transgrid 'social licence'. There will no longer be community opposition as concerns will be resolved with an underground solution. The community will work with the government and Transgrid to assist in any way possible to ensure delivery timetable is met. Farmers at Tumut have said: 'If HumeLink goes underground, Transgrid can start tomorrow, and we'll even dig the trench for them'.

· The planning for HumeLink was done assuming Snowy 2.0 would be available in July 2025. Snowy Hydro has now announced that Snowy 2.0 won't be complete until December 2029. This four and a half year delay means HumeLink can be delivered when needed as an underground solution.

- AEMO's own modelling, even before significant delays to the completion of Snowy 2.0 were announced, said the optimal timing of HumeLink was 2028-29 in the Step Change scenario; and 2033-34 in Progressive Change scenario.

- If undergrounding HumeLink is rejected, because it will take longer to build, Transgrid will be solely to blame, and must be held to account. Transgrid has been continually working against the community on Undergrounding HumeLink – stalling and misleading government for the last 3 years.

d) environmental impacts of undergrounding

- Greatly reduced environmental impacts in comparison to Overhead infrastructure.
- o Undergrounding will result in at an estimate 15m easement in comparison to a 70m easement with overhead lines;
- o Much reduced removal of trees and plant flora;
- o Reduction in endangered species types being killed. 82 threatened species are impacted by HumeLink;
- o Land above underground cable infrastructure can be rejuvenated after construction;
- o No towers and wires interfering with flight of birds or movement of climbing animals. No bird or climbing animal deaths will result. Thus eliminating concern for protected birds e.g. Wedge tailed eagles.
- o Eliminates the risk of overhead lines causing bushfire. The black summer cost the nation \$230 billion and killed almost 3 billion koala, kangaroos and other animals.
- o Eliminates air and ground fire control hazards;
- o Eliminates the risk of interruption to power transmission in severe weather events and/or bushfires and therefore improves transmission security and resilience as required under the SLACIP Act;
- o Minimal impact to private or public land after construction is complete;
- o No overhead lines impeding agricultural operations, machinery use, irrigation, drones, or aircraft operation;
- o No visual impact from the transmission lines and so no loss of visual and rural landscape character of regions;
- o Little to no electromagnetic field impacts. Therefore, less risk of serious health impacts, plus no interruption to new technologies like precision agriculture that improve the productive efficiency of agriculture.

I urge the Standing Committee to recommend that undergrounding is the best way forward for renewable energy transmission in NSW. As we transition to net zero emissions we need environmentally responsible transmission as well as generation.