

Submission
No 78

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

Name: Name suppressed
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Confidential

12 July 2023

Attention: The Hon Emily Suvaal, Committee Chair, of Inquiry - Feasibility of undergrounding the transmission infrastructure for renewable energy projects
Standing Committee on State Development

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

Below is a submission to this important inquiry into the feasibility of undergrounding transmission infrastructure for renewable infrastructure projects.

While I appreciate the need to supplement NSW's energy supply with the pumped Hydro project I do not believe it should be achieved at the cost of horrendous long term impacts on the environment. Surely NSW has moved past the stage of just replicating what has always been done ie building huge towers which are a blot on the landscape and lead to environmental desecration over long distances.

The Gurrundah area is already crisscrossed with high voltage power lines and due to the steady source of wind in the area, is the home of a very large number of windfarms.

Below I have outlined **5 very salient points** which I think support the case for the undergrounding of HumeLink and should be seriously considered. HumeLink may well be the forerunner of many such projects all over Australia as Australia attempts to limit the rise in global temperatures before we damn the human race to a world wide catastrophe. Surely it is time to look past the cheapest options and consider all impacts including societal and environmental and both short and long term of any major projects like HumeLink. The natural disasters like fire and flooding that have caused major impact in many countries around the world should cause any **rational government** to consider the option of doing things differently to help mitigate these huge risks. Do we really want to emulate the many now extinct civilizations of the past who ignored environmental factors and subsequently perished.?

a) the costs and benefits of undergrounding

- Governments are telling us that renewable energy will reduce the cost of electricity. It's critical that a better environmental option for transmitting electricity, like undergrounding, isn't rejected on the basis of cost.
- 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:
 - no risk of underground cables causing a fire;
 - no restriction or hazard on safe firefighting;
 - protection of the infrastructure from severe weather and fire events;
 - will not impede agricultural operations;
 - no impact on the landscape and amenity; and
 - significantly reduced impact on biodiversity as a much smaller easement is required

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**'. Community opposition will be significantly reduced 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.
 - Undergrounding will result in at an estimate 15m easement in comparison to a 70m easement with overhead lines; this will have a huge impact on the landholders affected.
 - Much reduced removal of trees and plant flora; there has been a huge push by the NSW Government to increase the native vegetation in the rural landscape. Many projects have been supported both by government funding and huge volunteer efforts by community groups such as Landcare. How much of this quality vegetation will be lost and community good will evaporated.?
 - Reduction in endangered species types being killed. 82 threatened species are impacted by HumeLink;
 - 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 and increasingly vulnerable species eg. Wedge tailed eagles.
 - Eliminates the risk of overhead lines causing bushfire. The black summer cost the nation **\$230 billion and killed almost 3 billion koalas, kangaroos and other animals.**
 - Eliminates air and ground fire control hazards;
 - 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](#);
 - Minimal impact to private or public land after construction is complete;
 - No overhead lines impeding agricultural operations, machinery use, irrigation, drones, or aircraft operation and adding to much increased safety.

- No visual impact from the transmission lines and so no loss of visual and rural landscape character of regions;
- 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. We need Governments to step up and think holistically about the costs and benefits.**

Yours sincerely

