

**Submission
No 281**

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

Name: Mr Shaun Ryan

Date Received: 14 July 2023

Shaun Ryan

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

Date: 14 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.

HumeLink is a 360 km, 500kV transmission line that extends from Bannaby in the Southern Tablelands, to Maragle near Kosciusko National Park, and to Wagga Wagga in the Riverina. It is described by Transgrid as the “largest capital project since construction of our existing network”.

HumeLink will connect Snowy 2.0 pumped hydro to the load centres in eastern NSW. Snowy 2.0 is said to be “the largest renewable energy project in Australia”

<https://www.energy.gov.au/government-priorities/energy-supply/pumped-hydro-and-snowy-20>.

500kV lines, with towers up to 80 m, are the tallest, bulkiest, and most imposing of all transmission lines in Australia, completely dominating the landscape for kilometres either side. Constructing 360 km of 500kV overhead transmission lines therefore comes with enormous costs to the environment and communities.

Countries overseas are transitioning to net zero emissions by HVDC underground transmission. Two such projects are listed below:

- Canada to NY 339 miles (546 km), Champlain Hudson Power Express
<https://chpexpress.com/news/hvdc-cables-for-champlain-hudson-power-express-arrive-in-albany/#:~:text=Construction%20of%20CHPE%20is%20underway,energy%20delivery%20exp>

[ected%20in%202026.&text=CHPE%20involves%20the%20construction%20of,border%20and%20New%20York%20City;](#)

- Off Shore North Sea wind/South solar Germany 750km, Suedlink
<https://www.jacobs.com/projects/Germany-SuedLink>

To bring renewable energy into big cities like New York, HVDC underground, such as the Champlain Hudson Power Express, is world best practice.

Powerlines are also being put underground overseas because of bushfire risk. In July 2021, California announced it will bury 10,000 miles of overhead power lines to reduce the risk of wildfires, at a cost of between \$US15 to \$US30 billion. When asked about the cost the CEO said "It's too expensive not to do it. Lives are on the line," <https://www.npr.org/2021/07/21/1019058925/utility-bury-power-lines-wildfires-california>

Further, in Australia, private companies are putting transmission underground. Two current projects Marinus Link and Star of the South, being undertaken by private companies, are putting transmission underground. Marinus Link, the new interconnector between Tasmania and Victoria, and the first investment for Rewiring the Nation, has 90 km underground. Star of the South, Australia's first off shore wind farm, off the coast of Victoria with 2200MW of capacity – more capacity than Snowy 2.0, will have 60-80 km underground. The reasons given by these companies for undergrounding transmission, when it costs more, are the community, the landscape and the environment benefits.

Engineers tell us that there have been major advances in underground cabling technology, it is entirely feasible and the world is looking on in disbelief as Australia builds more overhead transmission lines.

Governments overseas and private companies in Australia have come to the conclusion that when you take into account all the non-market costs of overhead transmission lines (bushfires, biodiversity, visual amenity, regional development, tourism, and agricultural productivity) for the next 80-100 years, undergrounding is the preferred option.

Undergrounding HumeLink will be the least cost option for the people of NSW, when all the environmental and social costs of overhead lines are taken into account. Therefore, undergrounding HumeLink is in the public interest.

We urge the Standing Committee to recommend undergrounding HumeLink. As we transition to net zero emissions, we need environmentally responsible transmission as well as generation.

Yours sincerely,

Shaun Ryan