

Submission
No 202

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

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Senate Inquiry Submission

Peter Lawson

Thank you for the opportunity to make a submission to the Senate inquiry into undergrounding the Humelink powerlines.

Having been involved as a landholder representative on the Undergrounding steering committee, organised by TransGrid at landholders and CCG request, and done by GHD, I found it to be a massive eye opener as to how corporate businesses go about things, seemingly in order to 'tick boxes' rather than genuinely answer the questions asked. I am hopeful that this senate inquiry will be far more even handed its analysis of the values of potentially recommending undergrounding transmission lines within NSW and Australia.

Costs and Benefits of Undergrounding

- HVDC underground transmission lines, which are proposed for HumeLink, has less Transmission losses than AC overhead lines. This has an offsetting efficiency benefit over the life of the lines (60 plus years).
- Undergrounding also reduces the risk of fires caused by Overhead lines, as well as being able to fight fires under and around over head lines, which is very dangerous and not allowed under RFS guidelines.
 - This is exacerbated when, in the case of large parts of the HumeLink line, it will be running side by side to existing 330KVa lines, creating a cleared easement of up to 130m. (Undergrounding HumeLink would reduce that by 50-60m, possibly more if it could overlap or go in the existing 330 kVa lines easement).
 - This is a benefit to the firefighters safety and ability to put out a fire, and the electricity infrastructure itself. When all the evidence is suggesting that we (Australia wide and globally) are going to have more extreme weather, bigger and more ferocious fires, this seems like a prudent and sensible idea that doesn't seem to have a fair weighting in the planning process. Because it is hard to put a monetary figure on, (Black summer cost the nation \$230 billion and killed almost 3 million Koala's, kangaroos and other animals), it barely rates a mention, or gets a nominally low figure just to 'tick a box' and say it is included!
- The ground above the Underground cables can be replanted and returned to production with very minimal, or no, impact to agricultural operations. When productive land is at a premium and the cost of that land is very high, every acre counts, let alone just ease and efficiency of management.
- Given a smaller easement would be required, the impact on biodiversity is greatly reduced too. Again, given the evidence showing how important Biodiversity in the landscape is and how much we are losing each year across the country due to development, it has an added importance and one that should not be taken for granted.

- The biodiversity off-set costs for HumeLink are estimated to be up to, or over \$1b, so any reduction in this is well worth it, especially since all the country that isn't cleared as a result of HumeLink AC overhead lines, will then be available to potentially act as an off-set for other developments in years to come. So a double benefit which isn't factored in to existing budgets. More carbon sequestered = less CO2 in the atmosphere = greater chance of not increasing global temperatures by as much!
- Most developed countries overseas are putting transmission lines underground as the analysis shows when you include environmental and social costs, the cost benefit analysis of Undergrounding is the cheapest option long term.
- The generational benefit to the environment and communities is another factor which should be taken into consideration.
- With Governments telling us the transition to renewables is to help save the environment and reduce our electricity costs then I struggle to see why the environmental costs of overhead lines is not taken into account. The extra initial cost of going underground should not be the only \$ factor considered. The long term community and environmental costs and benefits need to be taken into account too, with a fair and acceptable figure used.

Other Environmental Impacts and Benefits of Undergrounding

- As mentioned, the easement of Underground lines will be 15-20m, not 70m for AC overhead lines.
- With 82, or possibly more, threatened species impacted by HumeLink any reduction in habitat loss is a major win. Australia has the highest rate of extinction in plants and animals of any country. There is no need to soldier on in that trend..... and all alternative options should be weighed up and considered to STOP this momentum, or at the very least reduce the chance of it trending that way.
- The reduced bushfire impact and ignition points. Also reduces fire fighting impediments.
 - Having been involved in fighting the 2019/20 Dunns Road fires, there were requests to turn the power off so it was safe to fight the fires. This request was continually knocked back, both hindering fire fighting efforts and putting fire fighters at an even greater risk. Numerous people I spoke to witnessed an earthing strike emanating from the powerlines to the ground via the smoke, (as smoke conducts electricity). If any vehicle, fire truck etc, was nearby it would have been catastrophic.
- Once constructed there is minimal impact to the landscape, public or private, as land over the cables can be regenerated with pastures/grasses.
- The reduced potential for interruption to power supply due to bad weather events (which we are expected to get more of) and fires (which we are expected to get more of and more intense). This then improves supply security and resilience.
- There is little to no electromagnetic field impacts from underground lines, where as there is from the overhead lines. Even if the 'current' research shows it falls away quite quickly the further away from the line you go, it is still there and affects different people in different ways. When you have two big transmission lines next to each other, it is quite a significant area which is unsafe to be, or work under. You can certainly feel it and hear it even more so

on a low cloud or drizzly day and that is just under a 330kVA line, let alone a 500kVA which Humelink is.

- The visual impact of the line is removed, for the affected land holders, their neighbours and the general community including tourists.
- The capital value loss to the affected landholders is also significantly reduced by putting lines underground. Whilst we are compensated for the loss, to a small degree (another inquiry required to look at the Just Terms Compensation Act.), the reality is that it is not a full compensation and it is only in that period of time. Most farmers are intergenerational, or plan to be and that capital gain loss is exacerbated over time. Results may not show up on valuation reports that this is the case but if one person is looking at numerous similar properties and sees one with 1 or 2 big transmission lines on it, the natural inclination is to put more effort into the ones without. Alternatively, they make a low-ball offer to compensate themselves for taking it on, so the existing landholder gets screwed at both ends.
- A lot less Flora and Fauna removed from the landscape Narrower easement and no need to keep chopping or trimming trees that get close to the overhead lines..
- No overhead lines to impede agricultural efficiencies or practices, eg, flying aircraft, machinery use, irrigation, the use of drones, precision Ag implements etc.

Existing Undergrounding Case Studies and Projects

- 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
 - Highly Recommended/Potential Australian Projects
 - Humelink
- 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

Delivery Timeframe Impacts

- Undergrounding will grant Transgrid 'social licence'. There will no longer be community opposition as concerns will be resolved with an underground solution. The community is far more likely to work with the government and Transgrid to assist in any way possible to ensure delivery timetable is met.

- 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.
 - Let alone the cost blow outs of Snowy 2 and suspected blowouts of existing HumeLink budgets.
- 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.