

**Submission  
No 203**

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

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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

14 July 2023

Dear Committee,

**Underground for rural communities and better environmental outcomes.**

Thank you for the opportunity to make a submission to this necessary inquiry into the feasibility of undergrounding transmission infrastructure for renewable infrastructure projects. Your deliberations and recommendations on this issue represent a once-in-lifetime opportunity to ensure better outcomes for future generations of NSW citizens.

I am extremely grateful to have this opportunity to put forward some of my personal concerns, and those that others have raised with me. During this process to date we have felt our concerns and questions have been unheard, particularly by TransGrid. While I understand this inquiry only looks at undergrounding transmission networks, I would hope that it can also contribute to improving the overall planning process for large scale projects in NSW.

My husband and I own a property in Killimicat on the Tumut River. We found out from friends that the HumeLink corridor had been moved onto our property just 3 months after we bought it. We have spent a lot of time researching and speaking to others in the community about this project and alternatives that will have significantly less impact on people lives.

While I am happy to have my submission published, please do not publish my personal contact details.

Regards,  
Rachael Purcell

The current HumeLink project proposal sees just over 1km of overhead transmission lines through our land, with a further 1.5km directly next to our boundary. One tower will be within 300m of our family home, in direct sight from our kitchen, living room and verandah. Because of this we have spent a significant amount of time researching and discussing potential impacts of this proposal on the community, the environment, our property, our family and future, both short term and long term. We have also spent hours researching and discussing with others about the other options that could reduce the impact on everyone. Many alternate routes have been discussed but we understand the implications of constantly moving routes and many of us are hesitant to push our issues onto someone else. The best case scenario for communities and the environment seems to be undergrounding. Government need to consider the longer term costs and benefits of projects such as this, not just the upfront cost, and most importantly, consider the people who will be forced to live with it in their community.

There are many costs that have not been included in the numbers used to discount underground transmission as a viable option. While upfront cost of undergrounding is known to be higher than above ground, the accuracy of these figures used by TransGrid is not agreed, nor do these numbers include long term costs and benefits. On balance, our communities believe that the undergrounding benefits and long term savings more than make up for the upfront difference.

I would also like to make the point that farmers are concerned about the environment. Farmers are often unfairly judged in this area but we are living with the impacts of climate change already and understand the need to reduce emissions. Protecting our remnant vegetation and biodiversity is a large part of this for us. Many of us are already taking steps to reduce our own impact on the environment, in our homes, within our businesses and on our land. We also have a strong connection to our land and communities. All of this combines to make projects such as HumeLink in its current form, impossible to accept as the best option.

Below I have listed many of the concerns I have about overhead transmission lines that could be either fully negated or significantly reduced by pursuing an underground option. These can be broadly categorised as environmental and fire risks, social and mental health costs, and the economic impacts.

- Upfront cost: We know the upfront cost is higher for an underground option, BUT we also know that this higher upfront cost will be offset by future savings.
  - o Firstly, it is not fair to the community that the decisions around undergrounding HumeLink are NOT based on an equal comparison of costs. TransGrid have admitted to us that the overhead costs are based on pre-2020 prices, where their GHD report into undergrounding uses higher 2022 prices for the underground infrastructure only. A report that was not endorsed by the committee cannot be accepted by our community as a fair assessment.
  - o The experts agree that maintenance of underground transmission networks is lower, as can be seen around the world. The reduced losses through underground transmission also contribute to offsetting the higher upfront cost. A more efficient network is a greener network.
- The future benefits and savings can also be attributed to the environment, tourism, economic and social impacts. The value of future savings has often been applied by government to other large investments and renewable energy projects, so why not transmission projects? (See Australian Story: The Transformer from February 2023 for an

example of this.) We also continually see visual amenity being considered in projects for Sydney, eg. the Barangaroo development which was scrapped because of its visual impact on existing residents. We ask that the same considerations be applied to rural communities.

The benefits of an underground option to farms, other businesses and families should also be fairly calculated in the project planning process. The impact of overhead transmission lines on different farming operations changes as terrain and enterprise changes, and doesn't seem to be something that has been given sufficient weight in the decision process.

- On our farm, we are going to be heavily impacted by the overhead proposal. Many of the impacts would not be long term issues for an underground option.

The first consideration for any business is economic. The change in farming practices required by the imposition of towers on our land will drastically reduce our income. The flow on effects of this into the local community and businesses is something that will be felt all along the proposed route as the majority of landholders have their ability to farm negatively impacted.

- On our property, we currently use aerial spraying and fertiliser application to manage pasture because the terrain is too steep to safely and effectively work from the ground. Our ability to manage weeds and maintain healthy ground cover are negatively impacted and become too costly or dangerous to maintain to a high standard once the overhead towers are built. We will not be able to use aerial options due to safety of the pilots and proximity to neighbouring properties. This not only impacts our ability to grow productive pastures (our income) but will also lead to weed infestation and erosion areas (the environment).
- Overhead transmission also reduces our ability to manage for environmental benefits. Clearing of old growth trees and remnant vegetation to make way for the easement destroys habitat and negatively impacts biodiversity on farm and in the local area. Again, on our property, areas we had marked for revegetation will not be able to be planted as planned and will possibly be further negatively impacted by the building process (compaction from tracks, winch and crane pads, and the delay in rehabilitation works as we wait until we know where and what we can do). The narrower easement requirements of an underground transmission easement can dramatically lower these impacts for the entire route.
- The long term impact of soil compaction from the construction process has the potential to adversely affect pasture growth and soil health long term. A lot of this work occurs off easement on private property and is just another cost farmers will be forced to carry into the future. TransGrid offer to rehabilitate after construction, but the compaction from repeated use of such heavy machinery goes the full depth of the soil profile. Rehabilitation by TransGrid will not adequately repair soil structure at depth. Healthy soil structure not only benefits pasture

growth, but carbon sequestration and biodiversity. While we know there will be a significant impact from an underground project in this area, it becomes one issue to deal with long term, not multiple.

- Land values for property with an easement for overhead transmission have been predicted to fall by up to 40%. This is often assessed by allowing for the drop in property productivity when calculating the value of farmland. Concerns about impacts and stigma of electromagnetic fields (EMF's) on human and animal health and safety, as well as visual amenity are also considered. As a business, any significant drop in property value can have serious consequences. For example, our property is currently part of our security for a bank loan. If the value of our land drops significantly there are potentially further costs associated with that change (higher interest rates or refinancing costs). The compensation offered by TransGrid and more recently the yearly payment from the NSW government does not cover this cost, or the stress that being put in this position causes.

Landholders beside the easement are also facing loss of property value. Unlike those with an easement, they are not offered any compensation. Should the network be built underground, impact on neighbouring properties is mostly limited to disturbance during construction.

- Cost of the mental health toll: the HumeLink proposal has caused many in our community to struggle to manage and maintain their mental health. There are so many reasons for this, but I think the main ones are fears for our safety, the uncertainty brought on by the lack of transparency and consultation, and being made to feel like our communities are collateral damage, not worthy of being considered. Accessing mental health support is particularly difficult in regional areas and our community is struggling as a result.

Concerns about the EMF's on human and animal health are a big stressor. We have all heard anecdotal evidence about the negative effects on peoples health from exposure to EMF's. While dismissed by TransGrid as untrue, recent findings in France have acknowledged that there are in fact real risks to our health from exposure to EMF's from transmission networks. It is also proven that EMF's have a negative impact on bee behaviour, which is of concern to agriculture and native flowering plants.

The proximity of the proposed towers to our own home means that we will be forced to relocate for our safety and peace of mind. It has been shown that EMF's can contribute to childhood leukaemia and that is not a risk we will willingly take with our child. We are lucky enough to be able to have that option, many others do not.

Many of us have a lot of the same thoughts on a constant loop in our minds and part of every conversation: uncertainty about the future viability of our farms and businesses, lack of clarity around what is safe when working within the easements, upset caused by knowing that our local environment will be destroyed by this project, tension with neighbours or community about the "best" route as people fight for their future. And always the scariest and most

pressing is the fear of the next bushfire event. We know it will be made worse by the presence of more high voltage overhead transmission lines. It is exhausting. It is scary.

- It is widely felt that an overhead transmission option will have a significant impact on tourism. The route for HumeLink goes through National Park and some of the most scenic areas in NSW. Local sentiment is that tourists will not want to visit our towns and villages once they are surrounded by an industrialised corridor. The loss of tourism is a cost not just to directly impacted landholders, but whole towns and communities.
- Environmental impacts of undergrounding: the environmental impacts need to be calculated for transmission, not just for generation of electricity if we truly wish to have a greener future. While the construction of any type of transmission project will have significant negative environmental impact, the long term impacts should be included in the decision.

The long term impacts on biodiversity is significantly less overall for an underground transmission network. The clearing of the easements alone is a significant difference. The easement for overhead transmission is 70m, whereas underground can be limited to around 20m. The impact on biodiversity, and particularly native wildlife, is reduced by the narrower easement. The cost of weed management is reduced and efficiency increases with the narrower easement. This not only leads to healthier ground cover, but also lessens the impact of erosion. It can also lessen the impact of recreational use in public areas.

Continuity of habitat is vital for native species, and limiting the clearing of older or remnant vegetation is important. Easements are known to provide habitat for vermin such as foxes and rabbits, as well as weeds. Areas set to be cleared for the HumeLink project are home to many threatened and endangered species and habitats. These are species and areas we should be protecting, not destroying in our race towards "green energy".

- Fire risk: the risk of bushfires is something that is well known in our area and the impacts of the 2019-2020 bushfire season are still being heavily felt.

It is well known that electricity infrastructure is the cause of many bushfires in Australia. Not only do they start fires, but they impact the ability to fight fires. Each large bushfire contributes to climate change and destruction of life and biodiversity. The emissions from the 2019-2020 fire season in Australia was calculated to be 830 million tonnes of carbon dioxide equivalent, this along with the loss of vast areas of habitat are devastating to native species. If we are building renewable energy infrastructure to combat climate change, we should be taking all available steps in the whole process to limit our impacts on the climate and environment, not building with technology that is known to cause bushfires and inhibits our ability to control them. Aside from the environmental impacts of bushfire, the community and economic impacts need to be considered.

HumeLink is being built through high bushfire risk areas. As such, not only are local residents at greater risk from bushfire, but the infrastructure itself is at high risk of being damaged in a fire event. In this case the flow on effects will be statewide. The risks to communities that lose power for extended periods or a total loss of the network due to infrastructure failure in extreme weather can be avoided with an underground option. How

many lives are an acceptable risk? Many in our community feel that the government is gambling with our lives to supply slightly cheaper electricity to the city.

- There are many cases of underground transmission being chosen as best practice around the world. California are undergrounding a large part of their network to reduce bushfire risks. An example that should be proof enough for what is best in our Australian climate. We have also seen underground transmission networks being built and planned in Australia in recent years; Murraylink in Victoria and South Australia, as well as Directlink in NSW. The Star of the South also committed to underground transmission networks for their renewable energy project in Victoria.

One example that comes to mind is the transmission lines for the Victorian Desalination Plant. These were put underground to meet community expectations and power supply requirements. Construction time and cost was also deemed to be lower than other options. Victorian premier at the time, John Brumby, said "We have listened to the local community and chosen underground power instead of overhead power lines as it will have the least impact on landowners, farmers and local people living and working in the area"<sup>1</sup>

- Delivery timeframes - Community opposition to overhead transmission has already significantly delayed delivery of the HumeLink project. This opposition goes away if the project is built underground. Many landowners will happily support and encourage the process should this change be implemented. This also reduces the overall cost, as many landholders have also said they would happily forego much of the compensation for an underground solution.

Our community also finds it difficult to accept that HumeLink must be completed by 2026 when it is not going to be able to connect to Snowy 2.0 for at least 3 years after that. Why doesn't the government take advantage of this delay to bring the transmission project up to world best practice? We should not be rushing poorly planned transmission projects through when there is a better alternative that will have a greater positive impact on climate change. A pause now will save us more into the future.

We also see the opportunity to take advantage of this situation to develop industry and skills to supply the equipment and knowledge required to build underground transmission networks within Australia. There are tens of thousands of kilometres of transmission needed into the future to connect all the renewable energy projects. Why not up-skill, retrain and employ Australians to complete the whole process, instead of importing everything from overseas?

Conclusion: Our rural communities need to be heard when planning projects that directly affect them. We know our land, community and local environment. We want the best outcome for everyone, not just ourselves. City-centric planning, such as we see with the overhead HumeLink towers, does not consider enough of the issues. Issues that we can already see occurring around us. For a better environmental outcome, a happier stronger community and your food security, build the transmission networks underground.

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<sup>1</sup> <https://www.newcivilengineer.com/archive/first-underground-power-infrastructure-laid-at-victoria-desalination-plant-28-05-2010/>