

Submission
No 103

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

Organisation: Nature Conservation Council of NSW

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The Standing Committee on State Development
Legislative Council
NSW Parliament
Via online submission

To the Chair,

Inquiry into the feasibility of undergrounding the transmission infrastructure for renewable energy projects

The Nature Conservation Council of New South Wales (NCC) is the state's peak environment organisation. We represent over 180 environment groups across NSW. Together we are dedicated to protecting and conserving the wildlife, landscapes and natural resources of NSW.

NCC welcomes the opportunity to highlight key issues regarding transmission connections to the Committee.

The renewable energy transition must continue to gather pace.

We are in a climate emergency. Communities, threatened species and ecosystems have suffered disastrous drought and unprecedented bushfires and floods. Since 1910, when national weather records began, average temperatures have risen 1.4°C. As such, NCC supports all efforts to accelerate the uptake of clean renewable energy and storage, and to develop transmission infrastructure to connect these new assets to the grid.

In most cases, action on climate change supports biodiversity goals. However, as the renewable energy transition gathers pace, we must coherently manage conflicting objectives. Renewable energy zones are seeing large areas of land cleared for new green energy facilities and transmission, and communities grappling with the challenges of the transition. A sensitive, consultative and strategic approach must be taken to ensure energy projects are developed in areas of the lowest biodiversity values, along with a hierarchy for decision-making focussing on avoidance of high value sites on public and private land.

Research suggests that with appropriate policy and regulatory controls, we can continue to pursue the crucial climate intervention of transitioning our energy systems and protect areas that are rich in biodiversity.¹ Standards and guidance have been developed to support projects



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to minimise nature impacts, including mitigating impacts on biodiversity such as migratory birds, and maximising renewable potential.²

NSW must move to international best practice and use underground connections whenever passing through areas of high environmental, social or economic significance. For the transition to clean energy to happen at the pace required to address the climate crisis while ensuring biodiversity is protected, we will require a mix of overhead and underground transmission lines.

In general, and for the transport of energy from large wind, solar, pumped hydro, and energy storage facilities, transmission lines that we have today, and need to build more of, will be high voltage alternating current (HVAC). These overhead lines are faster to build, cheaper and have less environmental and land impact than undergrounding.

Where undergrounding is necessary, the cost must be accepted.

We acknowledge that there is a higher cost associated with international best practice underground connections. However, in a climate and biodiversity crisis, and when the vast majority of the public want more done to protect nature³, financial cost can no longer be the only determining factor. Undergrounding transmission solves many of the problems presented to nature by the renewable energy transition.

The safety of fire fighters and the integrity of our power systems in the face of increasingly intense bushfire seasons must be considered.

Changing how we deal with bushfires in NSW requires proactive policymaking, deference to expertise, and candour from government. In all decision-making, governments should take a big-picture approach to how we live with fire by recognising its role in nature and the need for the entire NSW community to adapt to a bushfire environment driven by climate change.

Underground transmission, compared to traditional, above-ground transmission:

- Reduces ignition sources during high winds.
- Increases community resilience. Bushfires often destroy poles and towers, and it can take a long time to re-establish power. Without power, communities face unusable water pumping stations, sewage and sanitation services, no refrigeration, heating or cooling, and impacted communications infrastructure. The 2019-20 Black Summer provides an all-too thorough example of the impacts of fire-damaged electricity systems.
- Improves the safety of firefighters by avoiding the problem of fallen transmission structures and the danger of aerial crews colliding with power lines.
- Reduces the risks involved in fire suppression measures.

As the risks of catastrophic, climate-change driven fires escalate, these benefits are significant.



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If not done properly, transmission is a threat to cultural heritage, important species and ecological communities.

Most overhead transmission lines were constructed more than fifty years ago. They sit within easements that are cut and slashed to maintain clearance. They effect the ecological integrity of all land on which they are built. There are substantial and important habitats and Protected Areas along the East Coast between the generators in the Snowy Mountains, Hunter Valley and Lithgow, and the interstate connections to the north and south. The construction of above-ground transmission lines could remove thousands of hectares of habitat and cause further fragmentation and loss of connectivity at a massive scale.

A very illustrative example of the damage overhead powerlines can cause to important landscapes is the Snowy 2.0 scheme transmission connection through Kosciuszko National Park. Severe environmental costs associated with overhead towers, lines, easements, and access tracks are being worn by this Protected Area. NCC refers the Committee to the submission provided by the National Parks Association of NSW for a detailed analysis.

Transmission design and delivery takes a long time to develop and Australia has spent decades talking about what we needed and not building any, until now. And now, we are doing this in parallel with a significant build of renewable energy generation in the same regional and rural areas. Less than optimal communication about why this is needed now and what the impacts will be is leading to an understandable concern within communities that are hosting or may host new energy infrastructure.

We see a very strong need for governments to recognise and support rural and regional Australia in dealing with and responding to the significant scale of infrastructure coming to them. Decisions that don't involve community input, or are experienced as a tick-box process create significant space for the unknown and unfamiliar to become the unwanted. This undermines all of the drivers for a just energy transition that delivers for consumers, the community and climate.

There are areas and locations where undergrounding of sections should be considered and deeply investigated. Allowing for technological change and innovative solutions should also be considered where and when this is feasible for bulk transmission infrastructure.

We note that the potential risk of 'spaghetti network' may warrant more detailed investigation into undergrounding lower voltage connection infrastructure specifically for generation assets around in-demand grid connection locations. This limited length and specific circumstance is less likely to add unduly to consumer bills.

The current biodiversity offsetting scheme is incapable of protecting habitat at risk of destruction by over-head transmission.



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Given the state of the NSW environment, it is extremely unlikely that sufficient 'like for like' offsets exist to cover the liabilities that would accrue if new transmission lines were routed above ground. The more likely outcome is that any large-scale projects would rely upon the financial compensation provisions in the *Biodiversity Conservation Act*. Indirect offsets, and particularly financial offsets have been thoroughly dismissed as ineffective by numerous reports, inquiries and the environment movement.

Under the current offsets scheme, biodiversity has become a cost of doing business, with little regard to whether genuine environmental outcomes are being delivered.⁴ Offsets do not repair nature and they do not result in 'biodiversity gains' because they destroy at least as much as they protect.

To solve the extinction crisis, we must stop habitat destruction at its source, not continue to allow it by permitting offsets to act as 'compensation'. We need to ensure that essential proponents of development projects in places of ecological value, such as transmission projects, are required to actively protect areas that cannot withstand further loss.

Indeed, it is the hope of the conservation movement that new biodiversity protection measures resulting from the statutory reviews of the Local Land Services Act (part 5A) and the Biodiversity Conservation Act may impact the viability of overhead transmission.

Recommendation: That the Committee report that NSW should move to international best practice and use underground connections whenever passing through areas of high environmental, social or cultural significance. This should not come at the expense of the transition to clean energy which must be fast and fair for people and nature.

Thank you for the opportunity to participate in the inquiry and we look forward to appearing at the hearing.

Your key contact point for further questions and correspondence is Jacquelyn Johnson, Executive Officer, available via _____ and _____. We welcome further conversation on this matter.

Yours sincerely,



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Jacqui Mumford
Chief Executive Officer
Nature Conservation Council of NSW

¹ Dunnet, S. 2022, Does renewable energy threaten efforts to conserve biodiversity on land?, Carbon Brief, available online at <https://www.carbonbrief.org/guest-post-does-renewable-energy-threaten-efforts-to-conserve-biodiversity-on-land/>

² Bennun, L.; van Bochove, J.; Ng, C.; Fletcher, C.; Wilson, D; Phair, N. & Carbone, G. Mitigating biodiversity impacts associated with solar and wind energy development, IUCN, available online at <https://portals.iucn.org/library/node/49283>

³ *[Biodiversity Council research](#) shows that 97% of Australians want more to be done to look after nature*

⁴ See, for example, Nature Conservation Council of NSW, Paradise lost: The weakening and widening of NSW biodiversity offsetting schemes, 2005-2016, 2016, available at https://assets.nationbuilder.com/natureorg/legacy_url/2417/bio-offsettingreport_v14.pdf?1630462684 This report examines the evolution of biodiversity offsetting schemes in NSW between 2005 and 2016, when the current framework was first proposed.