Resist HumeLink
Correspondence to: amakeig@bigpond.net.au

Managing Director, Australian Energy Market Operator (AEMO)
20 Bond Street
Sydney NSW 2000

Dear Sir,

SUBMISSION IN RESPONSE TO THE DRAFT TRANSMISSION COST REPORT, May 2021

Resist HumeLink hereby submits this response to the Draft Transmission Cost Report (May 2021).

We would like to raise concerns about the omission of important costs associated with all the transmission projects considered. In particular we are concerned about the projects in Southern NSW to Central NSW, however the omission of costs is relevant to all projects.

The costs we refer to are the environment costs - the environmental externalities.

The Regulatory Investment Test for Transmission (RIT-T) doesn't require that the environmental costs be factored into the cost of the project https://www.aer.gov.au/system/files/AER%20-%20Final%20RIT-T%20application%20guidelines%20-%2014%20December%202018_0.pdf , page 30/31.

Overhead transmission lines permanently industrialise rural landscapes. This imposes huge costs on people living in the regions. To ensure an economically efficient outcome for the electricity market, all costs need to be taken into account.

1. Objectives of the National Electricity Market rules

We note the Australia Energy Market Operator (AEMO) has functions and powers **under the national energy laws** for the operation and planning of national electricity markets and systems.

We also note the Australia Energy Market Commission (AEMC) that **makes the rules for the AEMO** has **three objectives** which govern and guide its activities of making the rules for the National Electricity Market (NEM) and providing advice to the Energy Ministers' Meeting:

i. The National Electricity Objective (NEO)
ii. The National Energy Retail Objective (NERO); and

iii. The National Gas Objective (NGO)

The first two objectives are relevant here.

The National Electricity Objective (NEO) is stated as: “to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to:

- price, quality, safety and reliability and security of supply of electricity
- the reliability, safety and security of the national electricity system."

While the National Energy Retail Objective (NERO) is stated as: “to promote efficient investment in, and efficient operation and use of, energy services for the long term interests of consumers of energy with respect to price, quality, safety, reliability and security of supply of energy.” https://www.aemc.gov.au/about-us

Therefore, the objective of the AEMC is the efficient operation of the energy market – in terms of the use of energy, the production of energy and investment in future energy capacity.

For the National Electricity Market to have an economically efficient outcome, all the costs of building infrastructure need to be taken into account. The nation is suffering significant costs from the destruction of the environment, diminished visual amenity of property and reduced productive efficiency of farms from transmission lines. These costs need to be taken into account and passed on to the consumers. It’s important that those proposing investment in new infrastructure take all costs into account, so there is the right balance between infrastructure development and the environment.

And it’s important that electricity consumers face prices that reflect the full cost of the electricity being consumed, so that it is used efficiently. It’s inefficient for consumers to pay artificially low prices and inequitable for others to be bearing the social and environmental costs.

2. RIT-T maximising the net economic benefit

Further the Australian Energy Regulator states that ‘The purpose of the RIT-T is to identify the transmission investment option which **maximises net economic benefits** [emphasis added]**’** https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/regulatory-investment-test-for-transmission-rit-t-and-application-guidelines-2010

Maximising net economic benefit requires taking into account all the costs of the project - both direct and indirect. There is a fundamental flaw in the process where the objective is to identify the option that maximises net economic benefits and the environmental costs are not factored into the analysis, and so the decision about the project.

The nation is left with energy projects that are highly damaging to the environment. The balance between the environment and essential infrastructure is lost. Projects aren’t developed in environmentally sensitive ways.

3. Regional development costs

While Australia is characterised by a small population in a large land area, this isn't the case in southern NSW and Victoria. Areas being impacted by these transmission lines are increasingly closely settled.

There are very real economic costs to regions of not incorporating environmental externalities into the assessment of new transmission infrastructure.

State governments have made a commitment to regional development. In NSW the Regional Development Framework says the 'NSW Government is determined to ensure that regional NSW continues to be a vibrant and growing part of our economy'. https://www.nsw.gov.au/regional-nsw/regional-development-framework

The current HumeLink project that is industrialising 600 km of rural landscapes in NSW, and the other proposed projects for Southern to Central NSW, run counter to this commitment.

Overhead transmission infrastructure is destroying areas as desirable places for lifestyle farmers – a growth sector for regional economies located two to three hours from major cities. Lifestyle farmers have invigorated and brought prosperity to many regional and local businesses. By not considering environmentally sensitive transmission infrastructure solutions such as undergrounding, this important economic stimulus for rural areas is being lost.

4. Managing farm-related land use conflicts

A recent report by the Australian Farm Institute commissioned by the NSW government entitled *Managing farm-related land use conflicts in NSW*, reviewed farm land use conflict and identified failures in planning policy.

The report states:

'Critical agricultural assets need to be identified and protected by all levels of government to secure the future of the industry. There is a lack of strategic identification and protection of critical agricultural assets across NSW at present. Current strategies of industries coexisting with agriculture do not appear to be working and are causing significant economic, personal and social impacts on community members', page 12.

And also 'There appears to be a lack of proactive State-wide strategies which plan significant infrastructure developments that conflict with agriculture……', page 24, https://www.farminstitute.org.au/report-managing-land-use-conflict-in-nsw/ .

New overhead transmission infrastructure is infrastructure development that conflicts with agriculture. Modern farming practices are increasingly relying on technologies like drones and GPS to improve productive efficiency. These technologies can't be utilised and many other activities can't be performed in close proximity to overhead transmission lines. It's important that these losses in

productive efficiency of neighbouring agricultural operations are taken into account in planning all new transmission projects.

5. Compulsory acquisition

Not only are the environmental costs not being considered, but the approval process is supported by compulsory acquisition legislation which means the concerns of communities about projects can be overridden. The legislative process requires the Minister to endorse the 'right to acquire'. This is an oppressive power, that Government doesn't take lightly. In many cases it means acquiring land against the will of the landowner. Having compulsory acquisition, at the end of a flawed process, is a serious failure of Government and the national electricity market.

6. Compensation

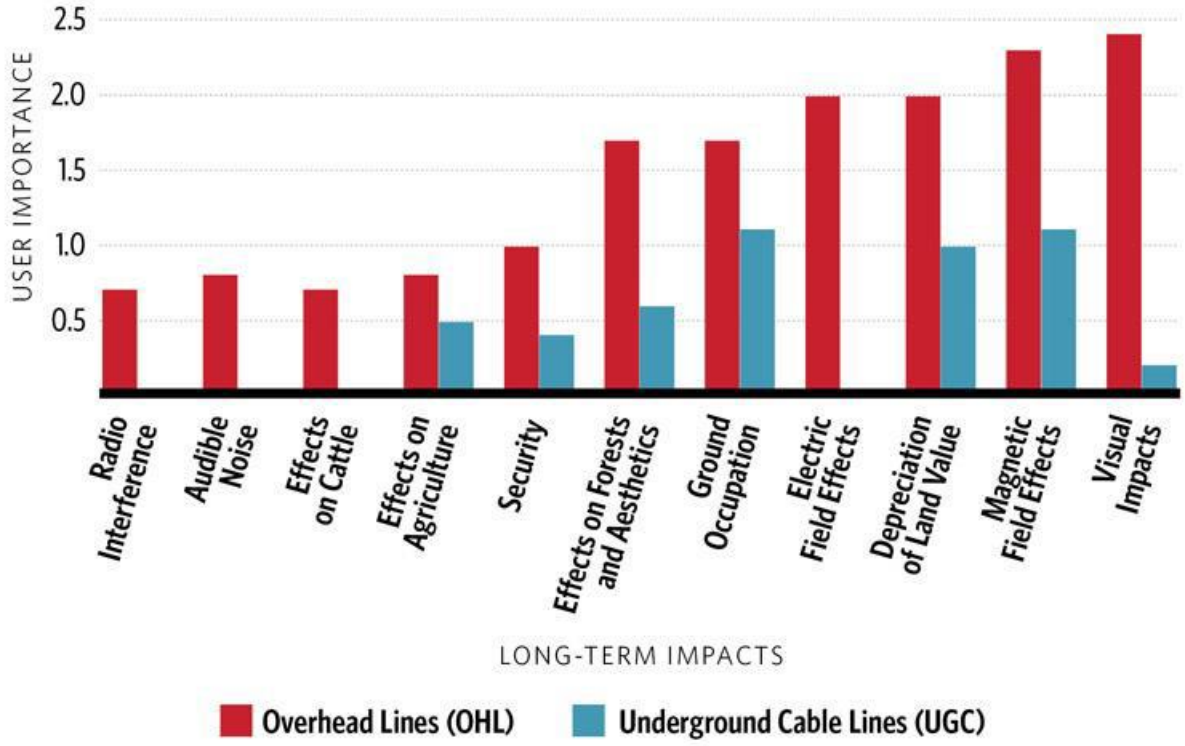
International studies indicate farmers and communities face properties devalued by 30% and more if their homes are close to the overhead transmission lines.

In NSW people are dealing with Land Acquisition (Just Terms Compensation) Act 1991 when it comes to compensation. This only applies to those with the transmission line (or easement) actually on their properties. People neighbouring it get nothing. In many cases neighbouring properties with views of the transmission line will be more affected, than the property with the easement. Large numbers of people are being negatively impacted and aren't being compensated. This practice denies those people natural justice.

7. Assessing feasible options with the least visual and environmental impact

A solution to the problem would be to require all future transmission infrastructure to assess feasible options that minimise visual and environmental impacts. In many cases this will involve assessing undergrounding transmission.

The US company HDR quotes the International Council on Large Electrical Systems, or CIGRÉ, which compared the impacts of greatest environmental concern for overhead lines (OHL) and underground cable lines (UGC). The biggest environmental impact of overhead transmission lines is the visual impact which is almost eliminated with underground lines (see Figure below).



Source: CIGRÉ as reference by HDR https://www.hdrinc.com/insights/top-5-reasons-use-underground-transmission-lines

The transmission companies state that the cost of undergrounding transmission lines is 10x more than overhead transmission lines. Engineers expert in undergrounding extra high voltage cables, say the construction costs are 3x to 10x greater, but there are off setting operational benefits. The Figure above indicates the visual impacts of transmission lines are reduced 12x by undergrounding lines.

The National Electricity Market needs to assess feasible options for undergrounding transmission, to reduce costs to the environment. As our population grows, things like having pristine landscapes of great natural beauty become more valuable. It's important to recognise these high value landscapes now and preserve them for future generations.

The construction costs are one off. The loss of visual amenity is a continuous cost for the nation – for generations.

8. Current proposed projects

The Draft Transmission Cost Report discusses three options for Southern NSW to Central NSW to be constructed in succession:

i. Option 1 HumeLink;
ii. Option 2 an additional 500kV line between Wagga Wagga and Bannaby;
iii. Option 3 a 2000 MW HVDC bi-pole transmission system between Wagga Wagga and Bannaby (Section 3.8, p35)

The accumulative negative impacts of the existing 330kV Bannaby-Yass transmission plus three additional lines, are excessive. This will mean communities will be living with four sets of transmission lines. Engineers are drawing these lines on a map in offices remote from regions impacted, with no regard to the environmental and social impacts.

All three options need to be evaluated with environmental costs fully incorporated in the assessment. In addition, an assessment of viable, minimum environmental impact options needs to be undertaken. This requires an assessment of underground options: DC fully underground transmission with converter stations; and AC underground sections through high value landscapes, for Option 1 (HumeLink), Option 2 and Option 3 above.

9. Other projects undergrounding transmission

Two private companies, Star of the South and Marinus, currently have National Electricity Market projects in the pipeline that are proposing to underground transmission lines. The reason - visual amenity and environmental benefits.

10. Conclusion

The visual pollution of the transmission lines, is a pollution to the environment causing significant damage, just like any other pollution.

Now more than ever before it's important that the rules and regulations of the National Electricity Market promote efficient outcomes, given much more transmission infrastructure will be needed, with greater amounts of unreliable renewables in the system. A recent paper by the National Parks Association (NPA) states that 'almost all new transmission links are underground throughout Europe, in fact are mandated in some countries, and much of Asia. For instance, in 2010 the Netherlands capped the total length of overhead transmission and distribution – every new kilometre of overhead line must be compensated by undergrounding an equivalent length', *Going underground with the transmission connection for Snowy 2.0*, NPA, January 2021, page 5.

Engineers are telling 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. Australia needs to be world best practice with all new transmission infrastructure.

AEMO has as its vision:

'A world-leading energy system planner and market operator', https://aemo.com.au/en/about .

It's time to realise this vision.

Andrea Strong
For Resist HumeLink 25 June 2021