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Energy Connect (NSW Eastern Section)
SSI-9172452
EIS Submission

Technical paper 13 – Electric and magnetic field study

- The author quotes the Gibbs report on a number of occasions however has failed to also include the following from the same report as quoted from Parliamentary enquiry into Health and EMF as part of the Eastlink Transmission enquiry. Chapter 2 - Health and EMF – Parliament of Australia (aph.gov.au) exerts included below in Italic.
- "Prudent Avoidance" by sighting transmission lines as far away from homes as possible is not a sound enough approach to minimising exposure to EMF emissions for impacted land holders.
- The technical paper quotes that magnetic field levels will be below the international limit of 2,000 milligaus (mG), however actual estimated levels are not quoted. Why?
- Why does the technical paper mention on two occasions that contingency loads will be for short periods and on rare occasions, on what basis and evidence do they make those claims, and why make special mention of these events twice? What are the EMF emission levels under these conditions?
- Current research into impacts of EMF's on human health are inconclusive one way or the other that these emissions have no detriment to the health of those exposed to these emissions.
- Evidence suggests exposure to EMF emissions may result in an excess risk to humans suffering.
    - Childhood Leukemia
    - Suicide and Depression
    - Neurodegeneration disorders
    - Source ICNIRP (emfs.info)

Suggestion
I would like to suggest that Transgrid have EMF level monitoring stations established, at fixed locations, where estimated EMF levels indicate they would be at higher levels, to establish readings and known data, of what levels of EMF are being emitted from this transmission line, this information needs to available to the public and auditable. Once data is available actions and decisions can then be made if required based on this information.

2.11 In the report, Sir Harry Gibbs concluded:

It has not been established that electric fields or magnetic fields of power frequency are harmful to human health, but since there is some evidence that they may do harm, a policy of prudent avoidance is recommended.

Power Authorities' Position

Transgrid

2.18 In its submission, Transgrid stated that in considering health concerns about EMFs, it relied on reviews carried out by other bodies, such as those described above. Transgrid agreed with the conclusion that adverse health effects have not been established but that the possibility could not be ruled out, and that further research was needed. The Authority therefore monitors worldwide research, participates in the sponsorship of research through the Electricity Supply Association of Australia (ESAA), reviews practices in the light of research findings, measures field strength around its installations, takes 'prudent avoidance' into account in the siting and construction of installations and freely provides information to the public. In the case of Eastlink, two brochures were made available to local communities: Electric and Magnetic Fields - Sharing Information and Your Guide to Understanding EillFs.

2.19 The Transgrid submission accepts the Gibbs recommendation of prudent avoidance' but does so in the light of the qualification that'it may be prudent to do whatever can be done without undue inconvenience and at modest expense

to avert the possible risk'.' 1 The submission discussed the two aspects of power line construction which contribute most to EMFs (the physical dimensions of the structure and phasing arrangements) but concluded that because the final

technical and cost aspects of the line had not yet been assessed, it is was possible at that stage to say what technical specifications would be used in Eastlink. However, the Authority proposed to acquire a 60 metre wide easement for the line 'which corresponds with to the typical width for) 30,000volt lines on which Sir Harry Gibbs statement was based'.' The submission concluded that the: 'actions taken by the Authority are consistent with the notion of prudent avoidance'.

2.20 Modeling has been carried out to estimate the strength and degree of dissipation of electric and magnetic fields along the Eastlink transmission line. With respect to electric fields the Transgrid submission states. 'The maximum electric field strength under average load conditions ... is approximately 3.2 kilovolts per metre (kV/m) under the line, decreasing to about 0.2 kV/m at the edge of the proposed casement, 30 metres from the centre of the line'. 14

2.21 With respect to magnetic fields the submission notes that because they depend on the current flowing in the line, which in turn varies with the load being supplied, there can be no single estimate as there is with electric fields. However, an estimate based on a maximum transmission load of 50Omw results in a value of 46 milliguass (mG) directly under the line, decreasing to about 6.5 mG at the edge of the casement, 30 metres away.

2.22 The Transgrid submission points out that in many areas of Australia, and particularly in NSW, there are thousands of kilometres of transmission lines. Over NSW, there are about 530kin of 500kV lines, 4480kin of 330kV lines, 690kin of 220kV lines and 8,000kni of 1321cV lines, as well as about 300kin of underground cables predominantly located in the Sydney area; a total of about 14,000km.

2.23 After the Western Corridor was selected as the preferred line in February 1995, estimates were made of the number of dwellings which would be in close proximity to it. The Transgrid submission provides the following figures for the NSW sector of Eastlink:

Distance From Transmission Line	*Number of Houses*
0 - 250 metres	*3*
250 - 500 metres	*23*
500 - 1000 metres	*58*

Table 2.1 - Proximity of Eastlink power line to existing dwellings

2.24 Transgrid stated that the closest house is approximately 100 metres from the line and that many lines, particularly in urban areas, would have homes very much closer than this. The submission also noted that when the estimates for electric and magnetic field strengths at various distances away from the source are compared with the proximity of dwelling, there would be negligible effect on even the closest dwelling.

Technical Paper 4
Agricultural Impact Assessment (NSW – Eastern Section)

Biosecurity
LP7 Mitigation
Suggestions

- **Operators performing clean downs need to be appropriately qualified and hold national certification in that area**
- **Plant, vehicles and equipment needs appropriate documentation to confirm clean down, including but not limited to information regarding asset ID, person performing cleaning ID, status of cleanliness before and after cleaning.**
- **A log of Plant, vehicles and equipment entering and departing a property should be recorded to document vehicle movement.**
- **This information needs to be auditable and available to landholder if requested.**
- **If Pathogens are identified, how are they to be managed on location.**
- **Mobile wash down plants need to be used by the construction contractor to clean down plant, vehicles and equipment before and after leaving a property.**

LP9 Mitigation

Suggestion
Site recordings of plant species on each property should be recorded prior to construction during different times of the year to record current plant species. This can be done by several 1m2 areas along the proposed easement area being laid out, so plant species data is recorded for past and future plant counts. This will help confirm any impacted areas with weed infestations resulting from construction using factual data.

Conclusion

The conclusion described by the author is very generalist, with the author visiting just 6 properties, to gauge a report for all the impacted landholders in the eastern section. Each property is different, and each landholder has different management approaches and expectations from Transgrid. The author mentions that this Transmission line is also being built in parallel to an existing line, which is the case for my circumstance, yet this existing line has not been included in any of the land use tables. 0.005% of land being taken up by towers and restricted areas as part of this new transmission line are in addition to an already 0.005% from the existing line, so now I will have 0.01% impacted or in real terms 1.1ha that has been taken out of production.

The EIS fails to mention the lifetime of the asset, how long is this planned to be in service, 50 to 100 years? The pre-existing line has been in service for 40 years currently, so compound this over say another 40 years and I have lost 44 ha or based on the economic figures $26,840 income loss without any compounding effect, earning potential lthat has been removed from my business that could potentially service debt if I wanted to buy additional land to expand my business.

Also in contrast the lost production land under towers will need to be managed separately from the rest of the adjoining land as it cannot be managed as part of the surrounding land area. Due to access with machinery etc. Stock can still graze, but improved pasture cannot be established, weeds will take over and need to be managed so they do spread to other areas, taking additional time and effort for no economic benefit. I have estimated for my business that this will be an addition 10 hours work per year plus costs. Yes, these might be considered small numbers, but they are additional time and costs with no return, any business looks to incremental improvements in efficiency and the impact of this transmission line is a reverse of that process.

Any impact where production is reduced and costs are increased on a business cannot be described as “minimal impact” and the authors assessment that the impact on agricultural enterprises is very low is an assessment to which I do not agree.