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18 August 2017

## **Personal Submission to the Inland Rail Project by Mr Christopher Dalitz**

*The opinions expressed in this submission are those of the author and NOT those of Essential Energy, Engineers Australia, The Electric Energy Society of Australia, The Australian Electric Vehicle Association or any other body or organisation of which the author is a member.*

### **Executive Summary**

My submission relates to the Inland Rail Project generally and not specifically the Parkes to Narromine section. However, my comments are relevant to the Parkes to Narromine (and all other sections) in particular the 'new build' sections of the project.

The Inland Rail project has been described as a 'once in a generation' project. It therefore deserves to be 'visionary' in scope – built for future generations with modern technologies. It should be built 'up to a standard' and 'not down to a price'. Fossil fuel technologies belong to the 19<sup>th</sup> and 20<sup>th</sup> centuries. The future is electric.

### **1.0 Inland Rail Corridor should be a “Services” corridor.**

The Inland Rail corridor should be viewed not only as a 'rail freight' corridor, but as a 'services' corridor from Melbourne to Brisbane. Other services that could follow that corridor, in part or for the whole of its length, might include (but not be limited to) the following:

- A dual circuit 220kV Transmission Line – to supply not only electrified rail (see next section) but facilitate the connection of Renewable Energy generation (eg Solar Farms – PV and Solar thermal) and facilitate the North-South flow of electricity in the National Electricity market (NEM).
- A water pipeline – and associated electric pump stations (supplied by renewable energy) to transfer water between the various river systems that are crossed along the route.
- A hydrogen pipeline to supply the 'hydrogen economy' of the future – with the opportunity to produce hydrogen along the route (powered by excess renewable energy) to deliver hydrogen to the cities of Melbourne and Brisbane.

See my attached 'concept' drawing. Public-Private partnerships could finance, own and operate these 'complementary' services, eg TransGrid the Transmission line, APA Group the hydrogen pipeline.

### **2.0 Inland rail should be Electric – 25kV AC supplied by 220kV/25kV substations along the route.**

Electrified rail is faster, more powerful, has lower operating cost, is quieter and can operate on renewable energy supplied along the route. Electric trains can be driverless in the near future. Full details of the advantages of electrified rail freight can be found in the submissions to the Queensland Competition Authority (QCA), in particular from Aurecon (25 Sept 2012) and Siemens (25 Sept 2012).

Electric trains obviate the need to ventilate tunnels. Electric trains 'recover' energy when they descend or decelerate. Electric trains accelerate and decelerate faster. Electric trains are simply better trains.

### **3.0 Inland rail 'new build' sections should all be dual track from day one, including all tunnels.**

All new build sections and infrastructure (tunnels and bridges) should be dual track from day one, eliminating passing loops in those sections and significantly improving speeds and safety.

All augmentation sections should provide for a second track as much as is practicable.

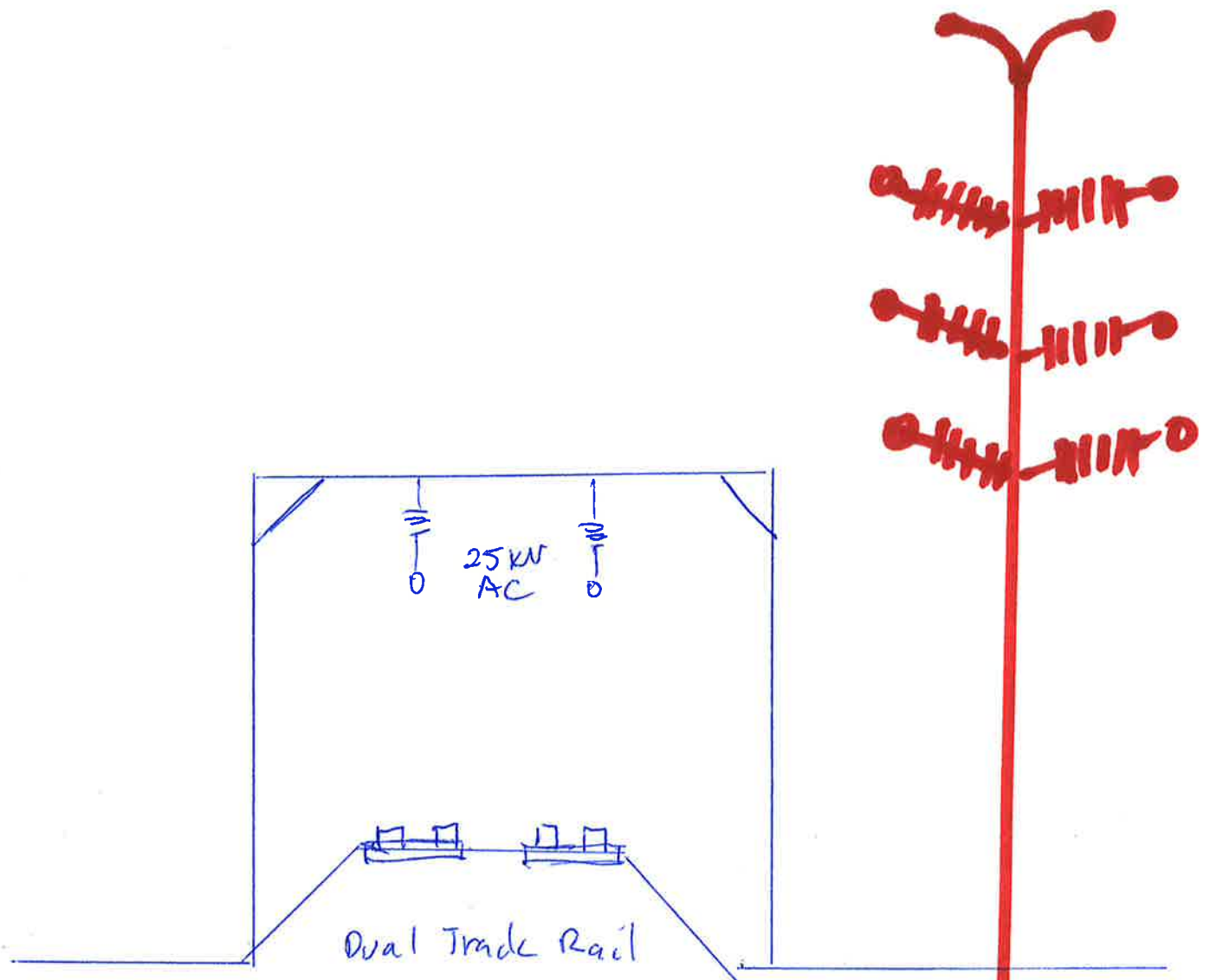
Thank you for the opportunity to contribute to the review.



Christopher Dalitz

BE(Elect.)-UNSW, Grad. Dip. Mgt. (Deakin), Assoc. Dip. Local Museum Studies (Sydney Uni), ME (Energy Policy & Planning)- UTS, FIEAust, CPEng. NPER, and Immediate Past President of the Electric Energy Society of Australia.

# Inland Rail Services Corridor



Hydrogen Pipeline  
Water Pipeline

Dual Circuit  
220,000 Volt  
Transmission Line

Chris White  
9 AUG 2014