

24/08/2018

Mr Rainer Korte
Executive Manager Asset Management
ElectraNet Pty Ltd
55/52 East Terrace
Adelaide SA 5000

South Australian Energy Transformation PADR feedback

Dear Mr Korte,

Lyon Group (Lyon) welcomes the opportunity to respond to ElectraNet's South Australian Energy Transformation (SAET) Project Assessment Draft Report (PADR) from June 2018. We consider this in conjunction with the Australian Energy Market Operator's (AEMO's) Integrated System Plan (ISP) released in July 2018.

ElectraNet's recommended outcome is a new network Interconnector, with an estimated cost to consumers of \$1.5 billion. This decision stems from a Regulatory Investment Test for Transmission (RIT-T) which considers network and non-network solutions. There is a broad consensus that the traditional network investment process requires expanded consideration to consider the fullest value of non-network solutions that may not be captured at present. To this effect, Lyon proposes a complementary investment path that we believe may have been overlooked in the recent PADR (and ISP) publication. That is, the development of a Virtual Transmission Line¹.

A Virtual Transmission Line utilises two utility scale batteries at either end of a congested transmission line, operating the storage systems in tandem with the aim to lift thermal constraints. Lyon is currently developing Riverland (SA) & Nowingi Solar Storage (VIC), located in proximity to MurrayLink Interconnector. The emergence of Virtual Transmission Lines will:

- Enable regional investment and dispatch confidence by reducing generation curtailment
- Lower electricity prices through time-shifting to reducing access to market risk
- Complement new and existing network infrastructure investments (e.g. during Interconnector construction)
- Expand the role for batteries by incentivising this market efficiency and 3rd party benefit
- Enhance existing asset utilisation rates, driving efficiency in regulated asset class
- Provide reliability through instantaneous dispatchable resources that mitigate contingencies (RoCoF)
- Rapidly deploy an Australian first, transforming competition and network access

Lyon can deliver Australia's first Virtual Transmission Line by Summer 2019/20, via the Riverland Solar Storage project and the Nowingi Solar Storage project. Lyon acknowledges this proposed solution spans two NEM regions. Lyon is focused on structuring an appropriate non-regulated asset ownership model to simplify

¹ For precedence, see France's Network Service Provider, RTE – recently launching *Project RINGO* (Virtual Transmission Line).

the delivery of this non-network solution. However, regulated ownership structures are possible, similar to RTE's model.

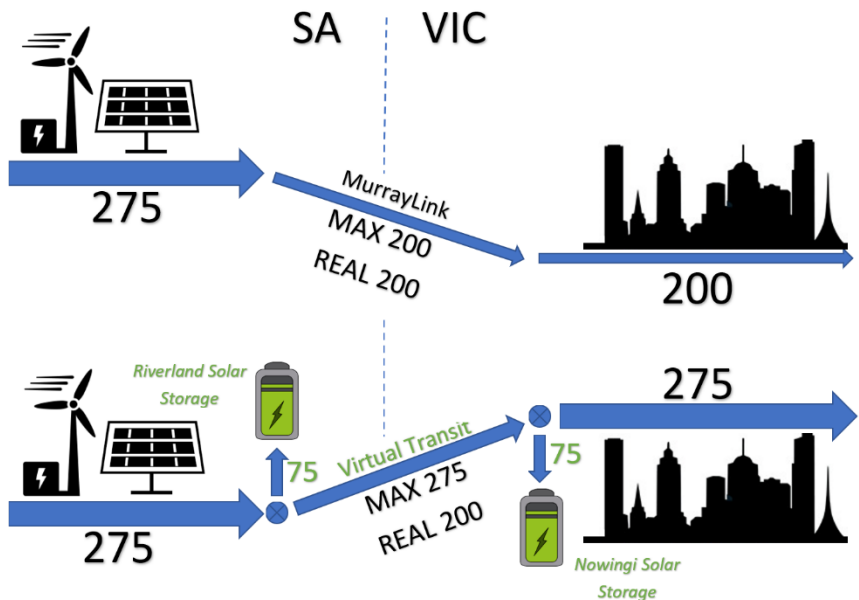
Lyon acknowledges ElectraNet's preferred network solution for additional interconnection, whilst remaining conscious of the timeframe (3-5 years) in which consumers will derive benefit from this traditional investment. Lyon has the potential to facilitate Australia's first Virtual Transmission Line by Summer 2019/20. The proximity of these solar plus battery storage projects, ideally located on either end of the MurrayLink provides an immediate complement to transmission congestion issues. Less curtailment and network congestion will lower electricity prices for consumers.

MurrayLink

MurrayLink facing thermal constraints, wind + solar spill leads to increased price

MurrayLink 2.0

A 'virtual' transmission flow of 75 MW is sent in addition to the real transmission flow of 200 MW. Virtual line allows 150% of nominal line capacity (in this example)



To support this, a technical investigation undertaken by Advisian (WorleyParsons) can be made available through Lyon, exploring the Virtual Transmission Line's Load Flow analysis in both Riverland and North West Victorian regions which support this concept. In the event PADR submissions may be made public, Lyon welcomes ElectraNet to request this investigation undertaken through Lyon. This Virtual Transmission Line is proven to avoid regional network congestion and enable investment and the transformation of South Australia's electricity system.

We look forward to the opportunity to discuss these matters with you.

Yours sincerely,

David Green
Chairman