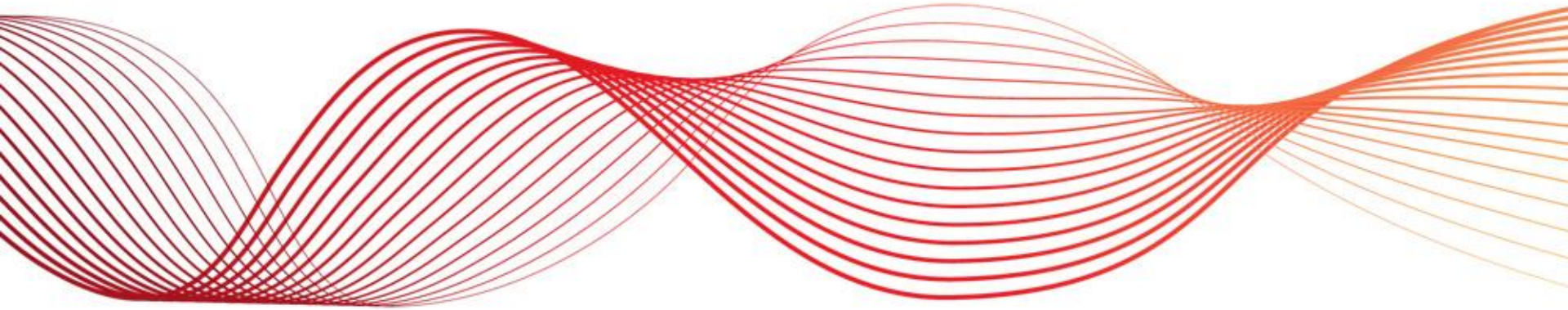
WESTERN VICTORIA REGULATORY INVESTMENT TEST FOR TRANSMISSION (RIT–T)

May 2017



PRESENTED BY KIET LEE

AEMO
AUSTRALIAN ENERGY MARKET OPERATOR

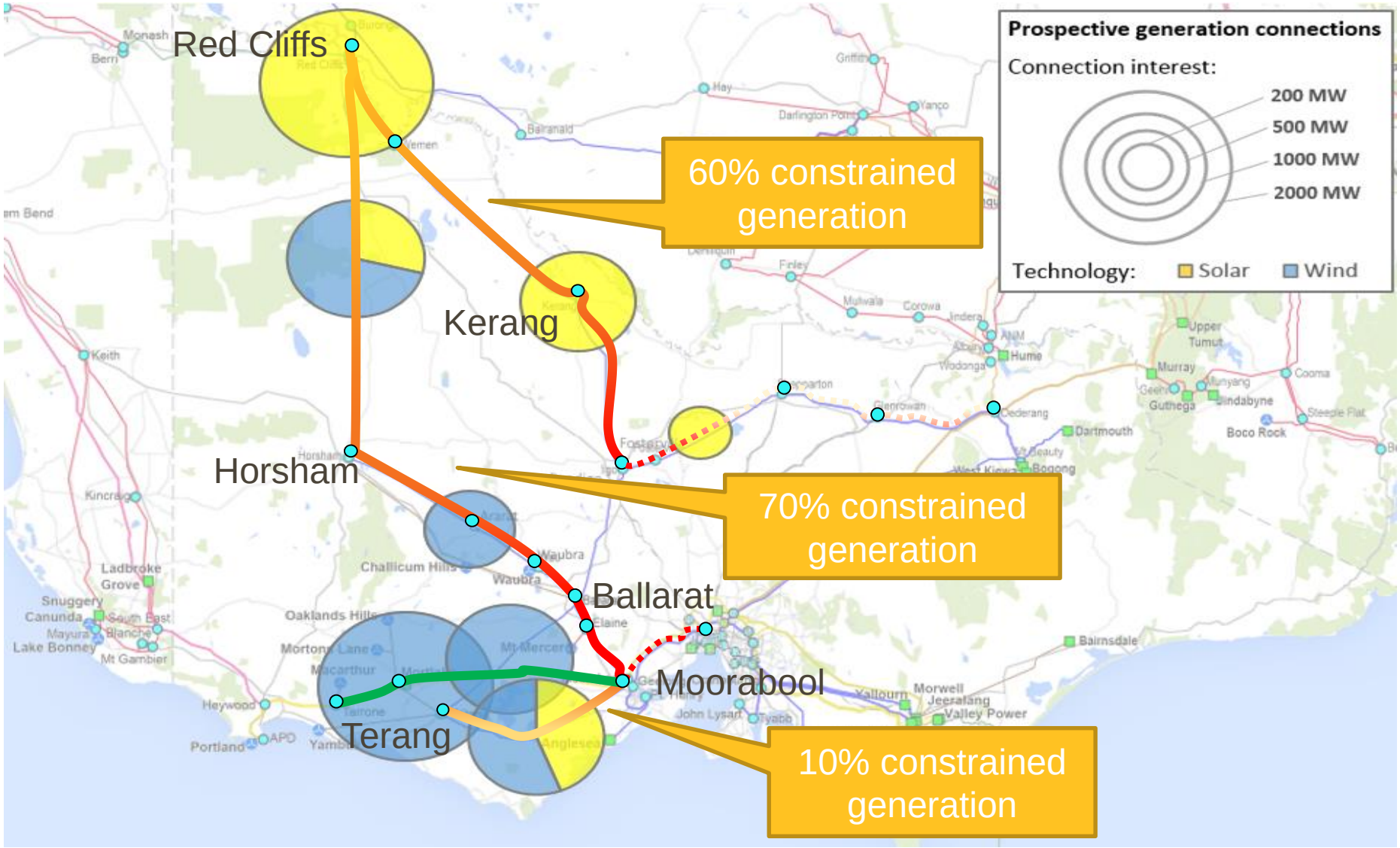
AGENDA SLIDE

1. Background
2. Key messages
   a) Thermal limitations and options
   b) System strength limitations and options
3. Next steps

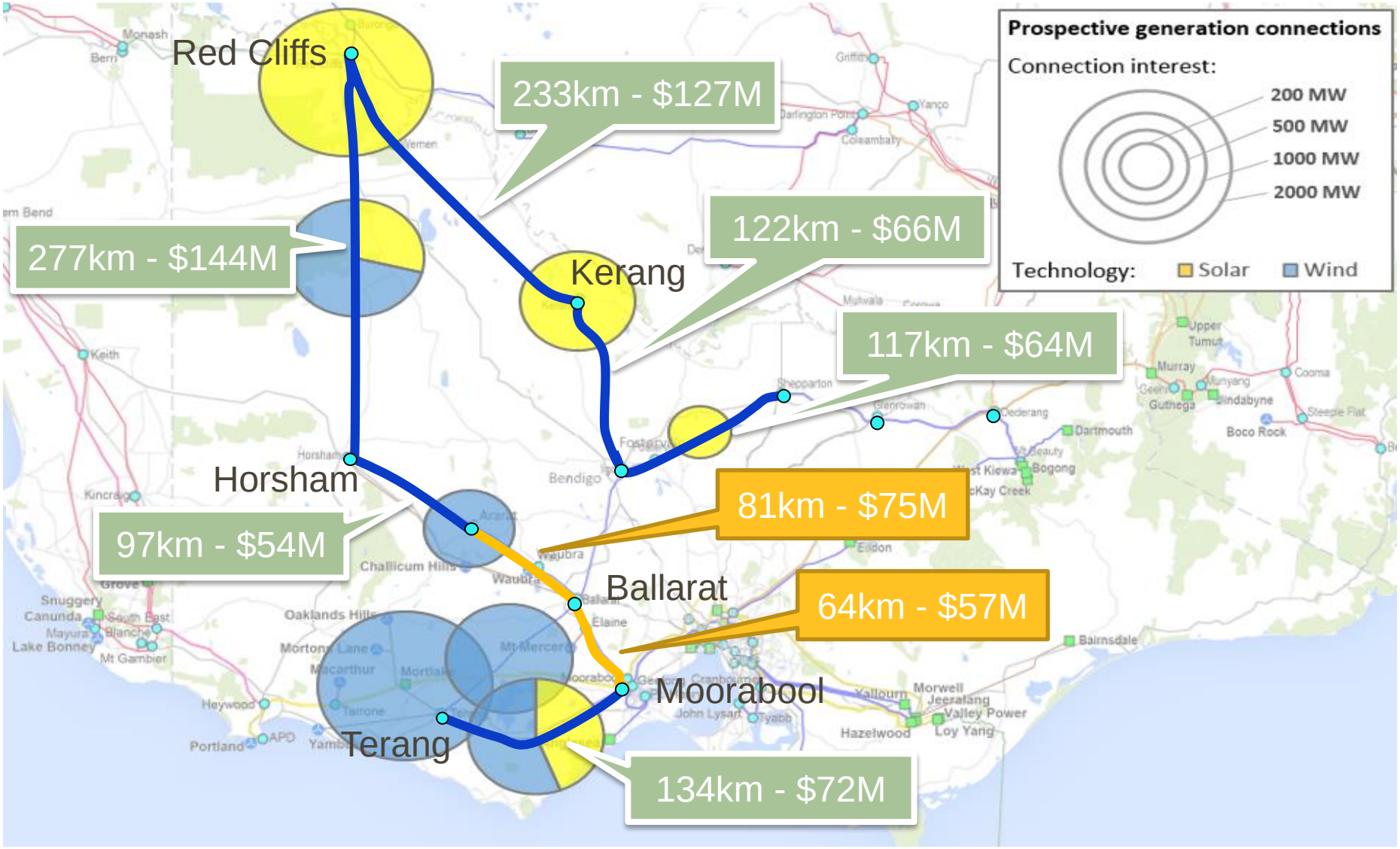
BACKGROUND

- The Victorian Government has announced the Victorian Renewable Energy Target (VRET) which could introduce up to 5,400 MW of new renewable generation capacity in Victoria.
- Most of the generation interest has been in the Western Victorian network, and the volume of new connections will exceed the existing transmission network capacity.
- As per the National Electricity Rules (NER), AEMO is carrying out a Regulatory Investment Test for Transmission (RIT-T) to assess possible options for increasing the transmission network capacity in this area.
- The Project Specification Consultation Report (PSCR) was published on AEMO's website in April 2017.

KEY MESSAGE #1 – THERMAL LIMITATIONS



OPTIONS FOR THERMAL LIMITATIONS

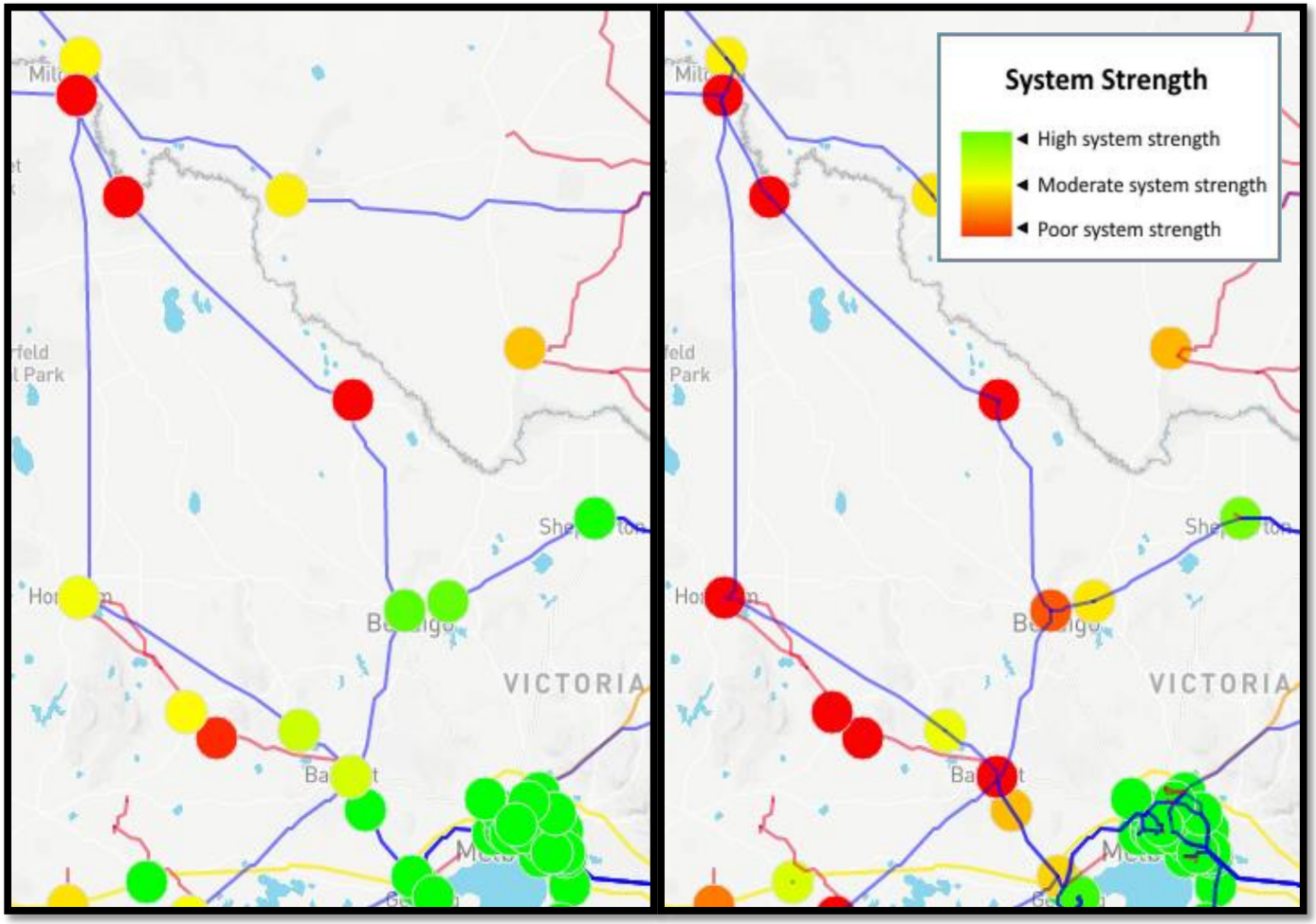


OPTIONS FOR THERMAL LIMITATIONS

- The next stage of the RIT-T, the Project Assessment Draft Report (PADR) will identify the solution that will return the highest market benefit.
- Preliminary studies show that investments to **completely** remove all transmission network limitations are likely to be uneconomic.
- It may be more efficient to build new transmission lines closer to Moorabool, where constraints are more severe and line lengths are short (low cost, high benefit).
- Further away, non-network options may become more attractive.

KEY MESSAGE #2 – SYSTEM STRENGTH RESULTING IN RENEWABLE INTEGRATION

2017 → **2036**



KEY MESSAGE #2 – SYSTEM STRENGTH RESULTING IN RENEWABLE INTEGRATION

- System strength is critical for stable operation of the power system and will decrease with the connection of new inverter connected generators.
- System strength cannot be effectively resolved through transmission infrastructure, and is most effectively addressed through local solutions (synchronous plant).
- The NER currently does not assign responsibility for maintaining system strength.
- The Australian Energy Market Commission (AEMC) has developed a rule change direction that will place responsibility on transmission network service providers (TNSPs) to maintain minimum system strength.
- AEMO will assess the technical requirements for maintaining system strength in Western Victoria in the RIT-T assessment.

SUMMARY OF KEY MESSAGES

- The Victorian electricity grid needs to be modernised, in order to meet carbon abatement targets.
- Thermal limitations are more severe for generators proposing to connect to the 220 kV Western Victoria transmission network.
- System strength in North West Victoria is reducing with the connection of new inverter connected generators and will also need to be addressed.
- Optimising generator locations will minimise transmission investment requirements.

NEXT STEPS

- AEMO welcomes written submissions on the PSCR, particularly in relation to the credible network and non-network options presented, and issues addressed in this report.
- Submissions due on or before 14 July 2017 and should be emailed to Planning@aemo.com.au
- The second stage of the RIT-T process i.e. the Project Assessment Draft Report (PADR) which will include a full options analysis, will be published within 12 months from 14 July 2017.

QUESTIONS