



2019-20 Integrated System Plan

Candidate Renewable Energy Zones webinar

13th August 2019

Facilitator: Jonathon Geddes

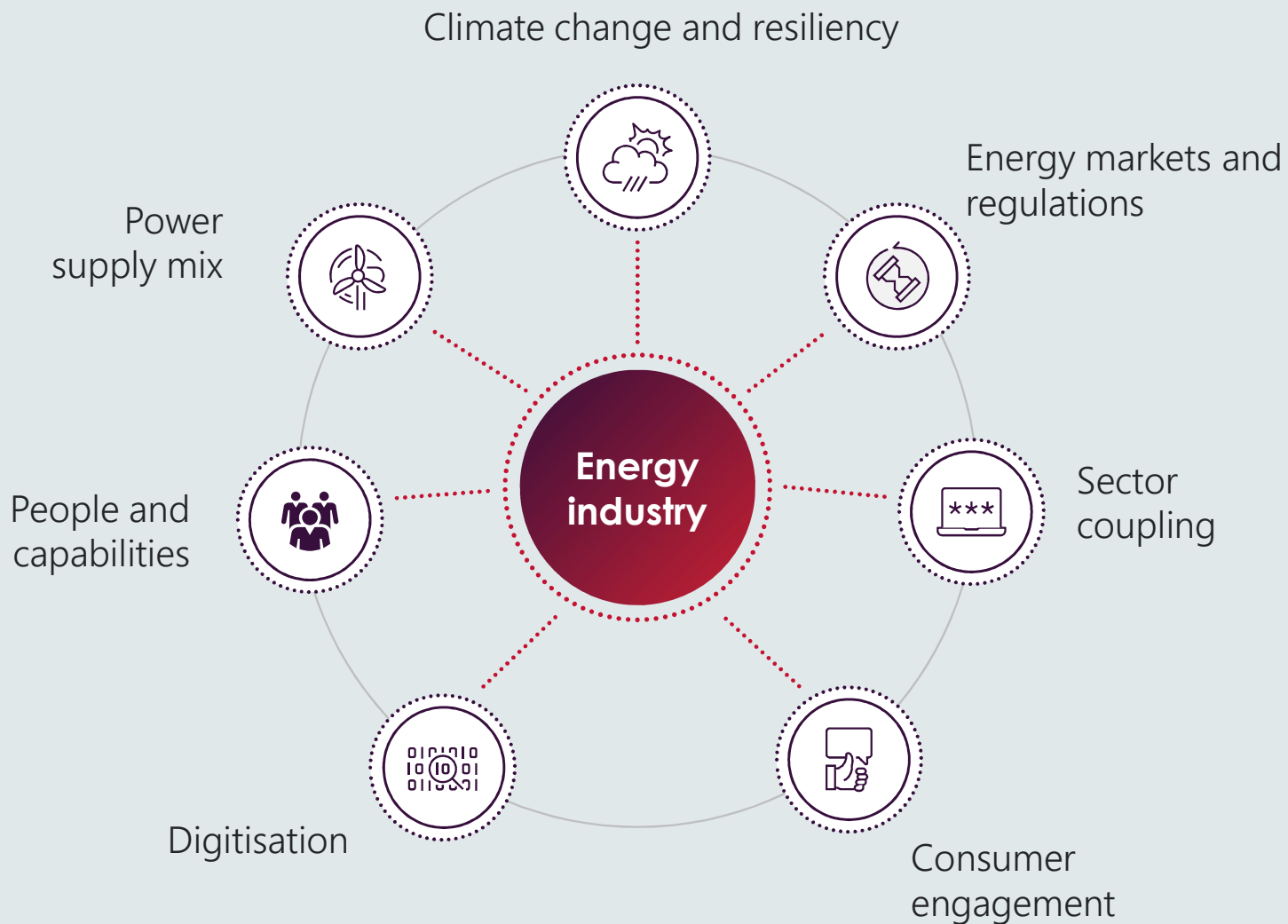
Speaker: Lars Narushevich

AGENDA

1. Background
2. Candidate REZ definition and usage
 - What is a REZ, and how were they defined?
 - How REZ inputs influence the modelling process
3. Current REZ candidates
 - What's changed since 2018 ISP and why?
 - Case Study – Western Victoria REZ
4. Next Steps
 - Actionable ISP
 - CoGaTI
5. Consultation Timeline
6. Questions

Background

Our changing energy environment



The Integrated System Plan (ISP) - a roadmap for the future

- Provides an integrated roadmap
- Maximises value to end consumers
- Aims to inform policy makers, investors, consumers, researchers and other energy stakeholders

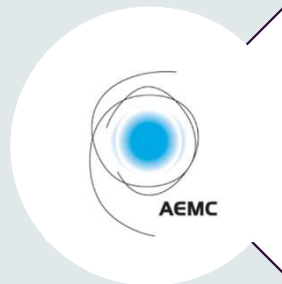
ISP context



Integrated System Plan



ISP/RIT-T guidelines



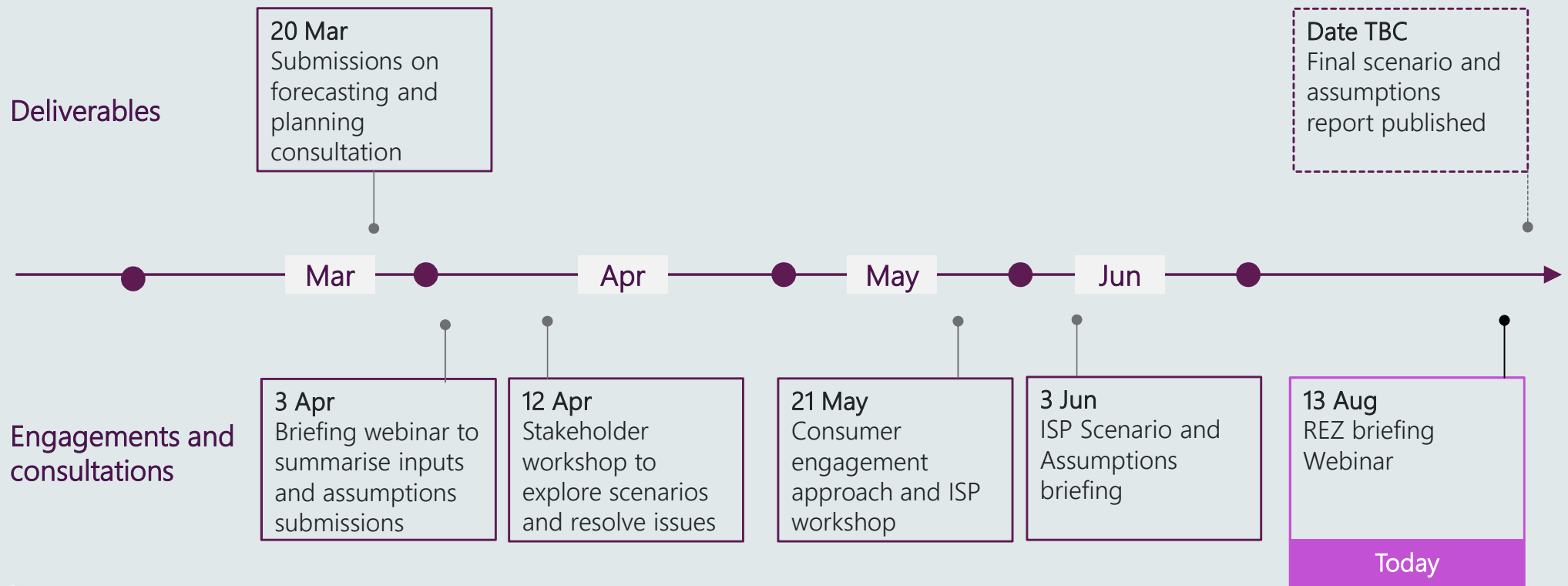
Coordination of transmission & generation investment



ENERGY
SECURITY
BOARD

Transmission
planning &
interconnection

Stakeholder engagement and consultation process to date



Webinar objectives

The objectives for today's webinar are to:

- Provide background on candidate Renewable Energy Zone (REZ) definition and development
- Explain how REZs will be used within the 2019-20 ISP modelling
- Discuss REZ candidates for the 2019-20 ISP

Candidate REZ definition and usage

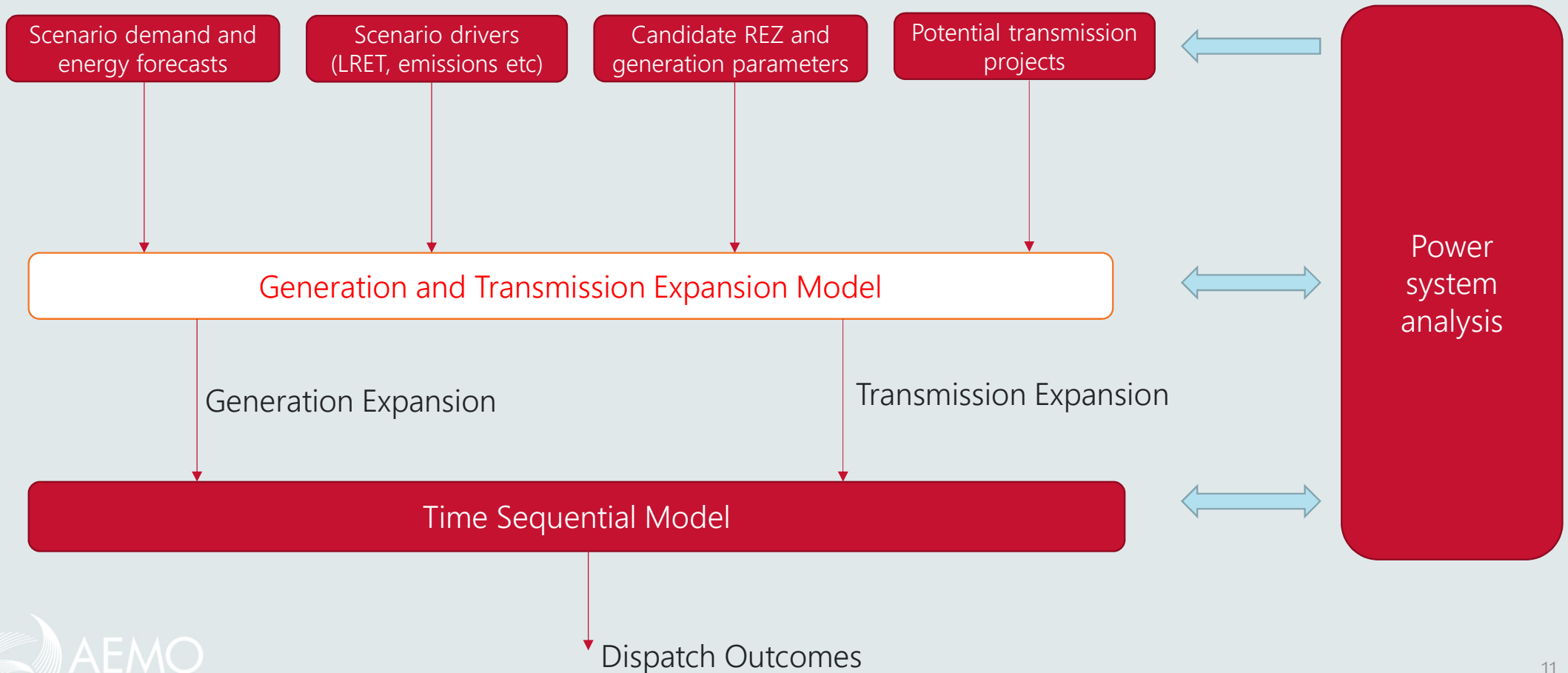
Renewable Energy Zones (REZs)



REZs are areas in the NEM where clusters of large-scale renewable energy can be developed to promote economies of scale in high-resource areas and capture geographic and technological diversity in renewable resources.

– ISP Consultation Paper
(AEMO)

ISP modelling overview

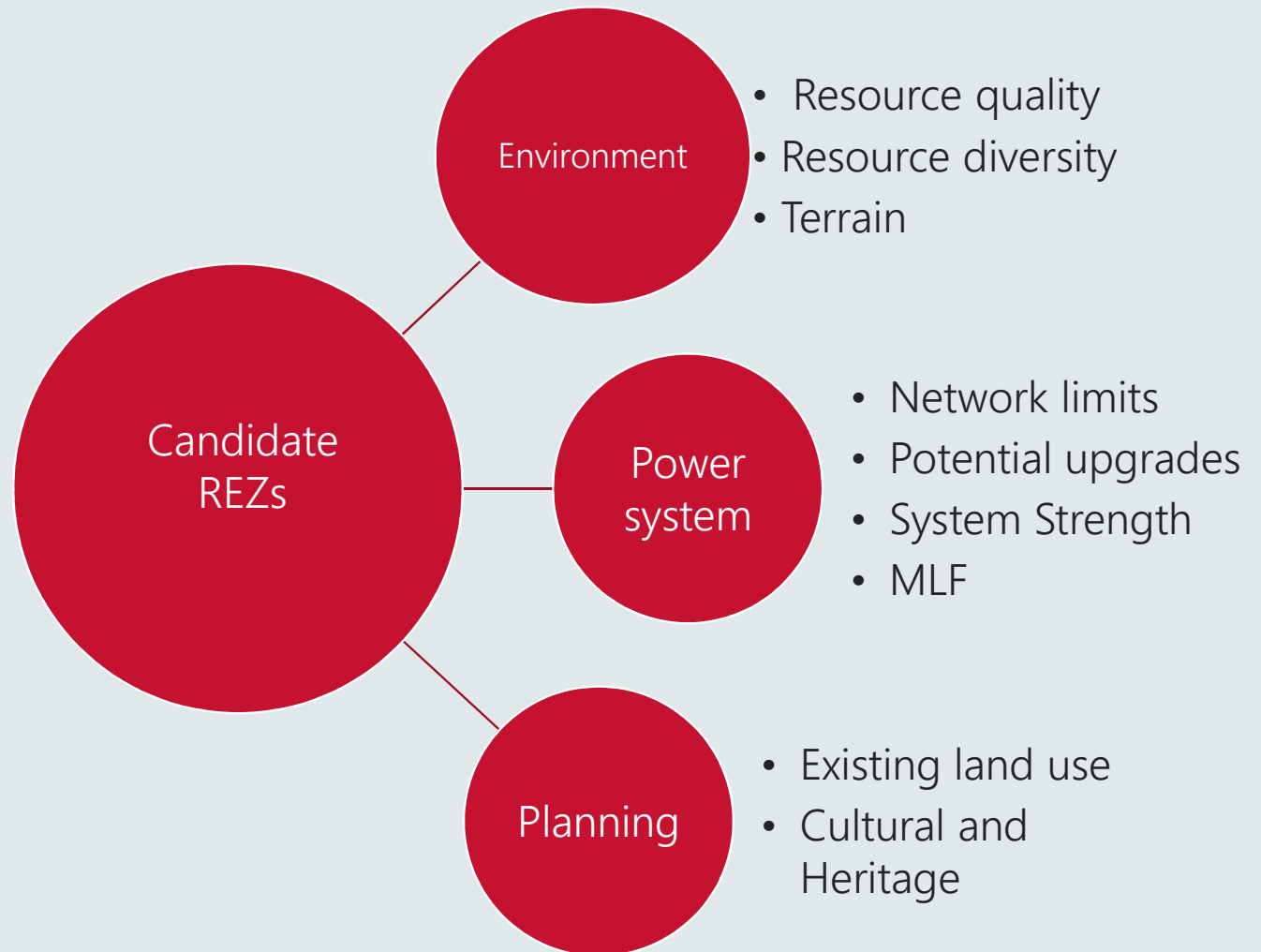


REZ inputs to model – snapshot

Location	Wind generation limits (MW)		Solar PV plus Solar thermal Limits (MW) ¹	Transmission-limited total build in the REZ ³	Indicative transmission expansion cost (\$M/MW Real 2019) ⁴	Additional generation capacity available (zero additional cost) in REZs due to the development of interconnectors	
	High	Medium				QNI Option 2	QNI Option 3B
Far North Queensland	-	-	-	700	1.179	-	-
North Queensland Clean Energy Hub	2,320	6,955	3,982	-	1.273	-	-
Northern Queensland	-	-	1,650	2400 (note 5)	0.889	-	-
Isaac	465	1,395	3,500	2700 (note 6)	0.684	-	-
Barcaldine	475	1,435	4,000	-	0.952	-	-
Fitzroy	220	670	2,000	2900 (note 7)	0.513	-	-
Darling Downs	695	2,090	3,743	2,743	0.171	600	1,200
Southern New South Wales Tablelands	575	1,735	1,000	1,000	0.230	-	-



Candidate REZ assessment

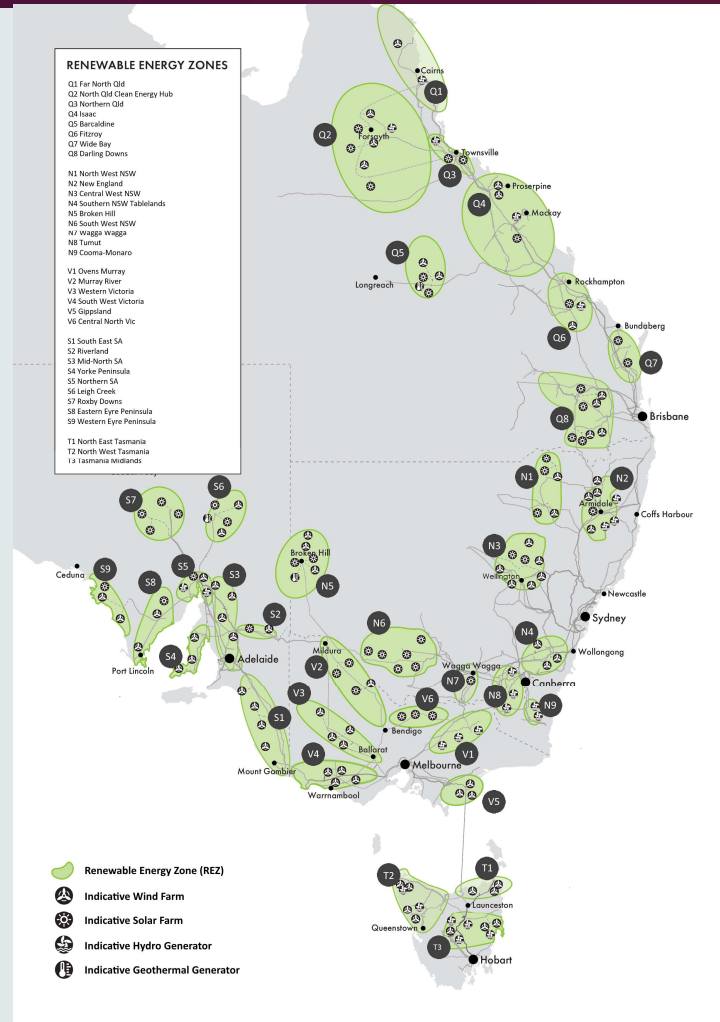




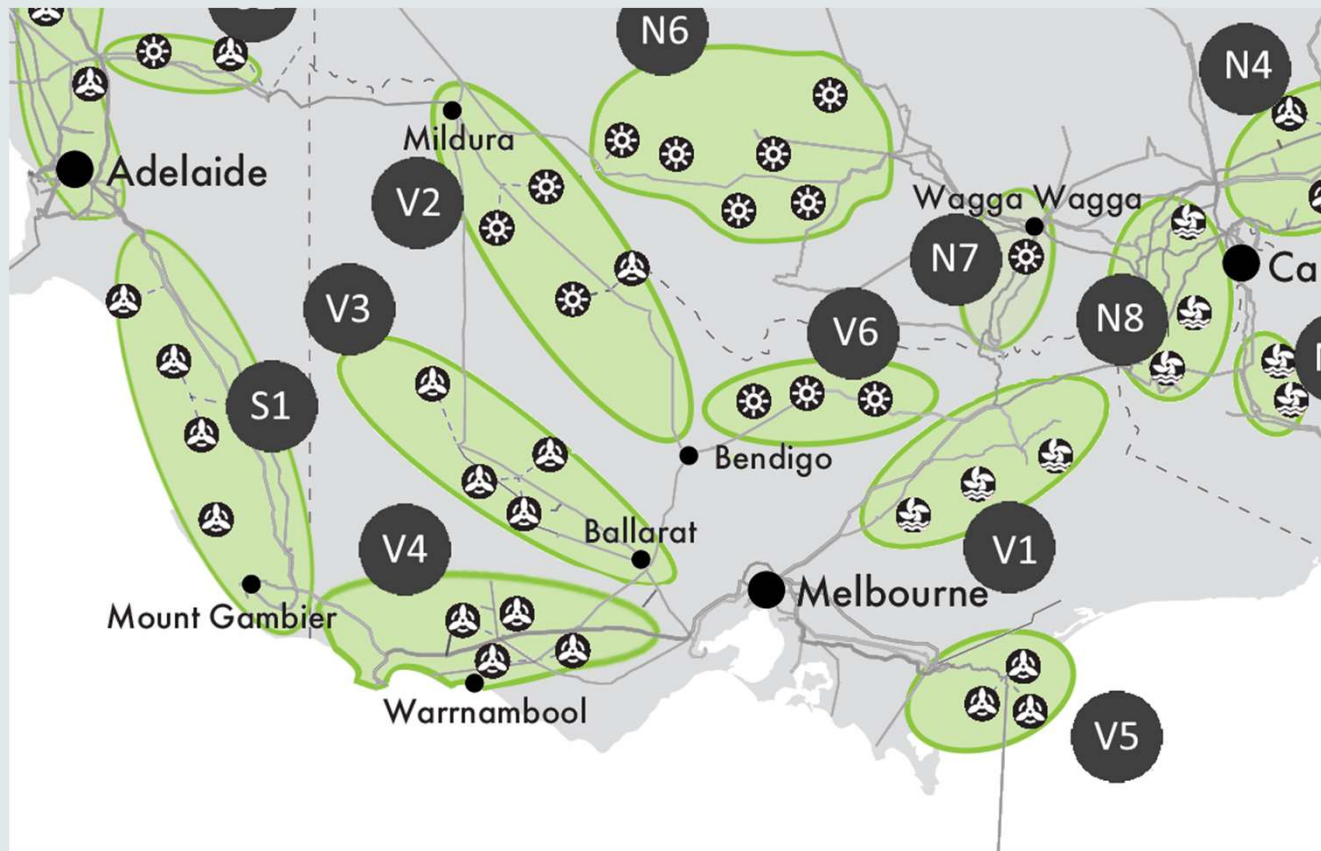
Current REZ candidates

+ Case Study of Western Victoria REZ

Candidate REZ Map – 2019-20 ISF

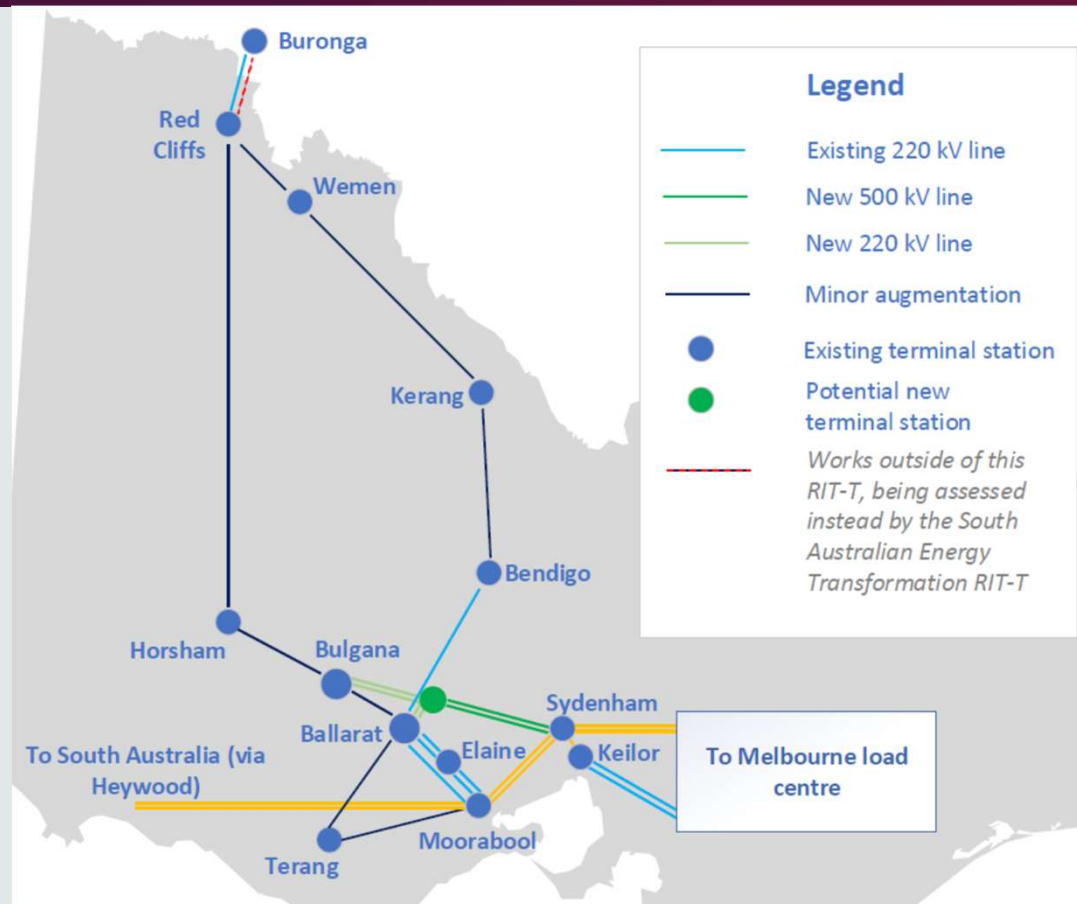


Case study – Western Victoria REZ



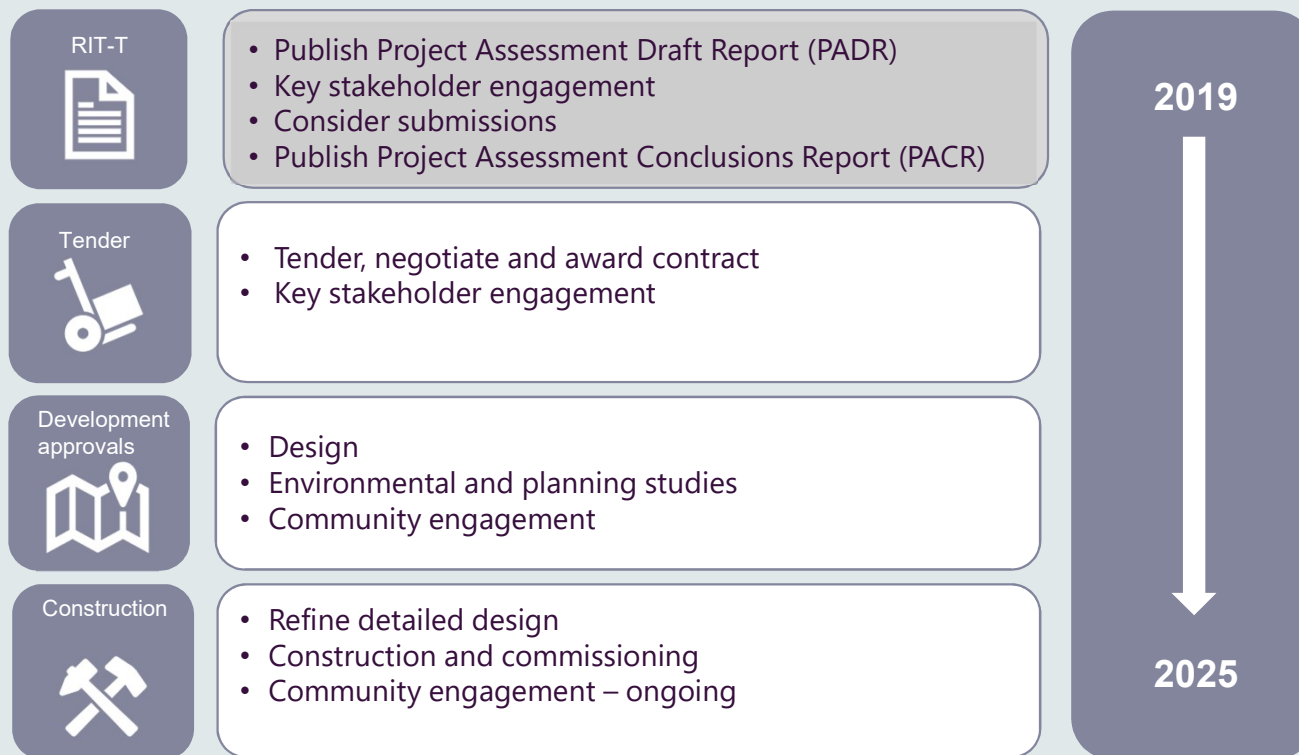
Candidate Renewable Energy Zones for Victoria
2019-20 ISP

Regulatory process and preferred option



Note: This diagram is not to scale. Routes are yet to be confirmed and for illustrative purposes only.

Indicative project timeline



Next Steps

Next steps

- ISP will identify an optimal development path for the power system, including:
 - transmission build/upgrades;
 - non-network solutions;
 - associated REZs.

Integrated
System Plan



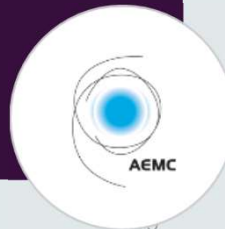
- ESB consulting on draft Rules later this year. It is proposed that the ISP will:
 - trigger and partially replace RIT-Ts; &
 - inform decision making by market participants (incl. VRE generators) & policy makers.
- Whole of system planning will help to overcome the current “chicken & egg” issues.

Converting the
ISP into action



- AEMC’s Coordination of Generation and Transmission Investment review is exploring options to promote the efficient development of REZs.
- This review feeds into the ESB’s Post 2025 market design review.

COGATI



Consultation timeline

Proposed ISP milestones/engagements 2019-20

Legend:

Publishing Dates

RIT-T

Public engagements

REZ public briefing

Preliminary outcomes briefing TBD

Public engagement on draft outcomes, development plan, REZ

Draft ISP published

Final ISP published

July — Aug — Sept — Oct — Nov — Dec — Feb — Mid 2020

VNI RIT-T PADR published

QNI RIT-T PADR Published

VNI RIT-T PACR Published

Marinus Link PADR published

AER determination on EnergyConnect

Questions

Jonathon Geddes

