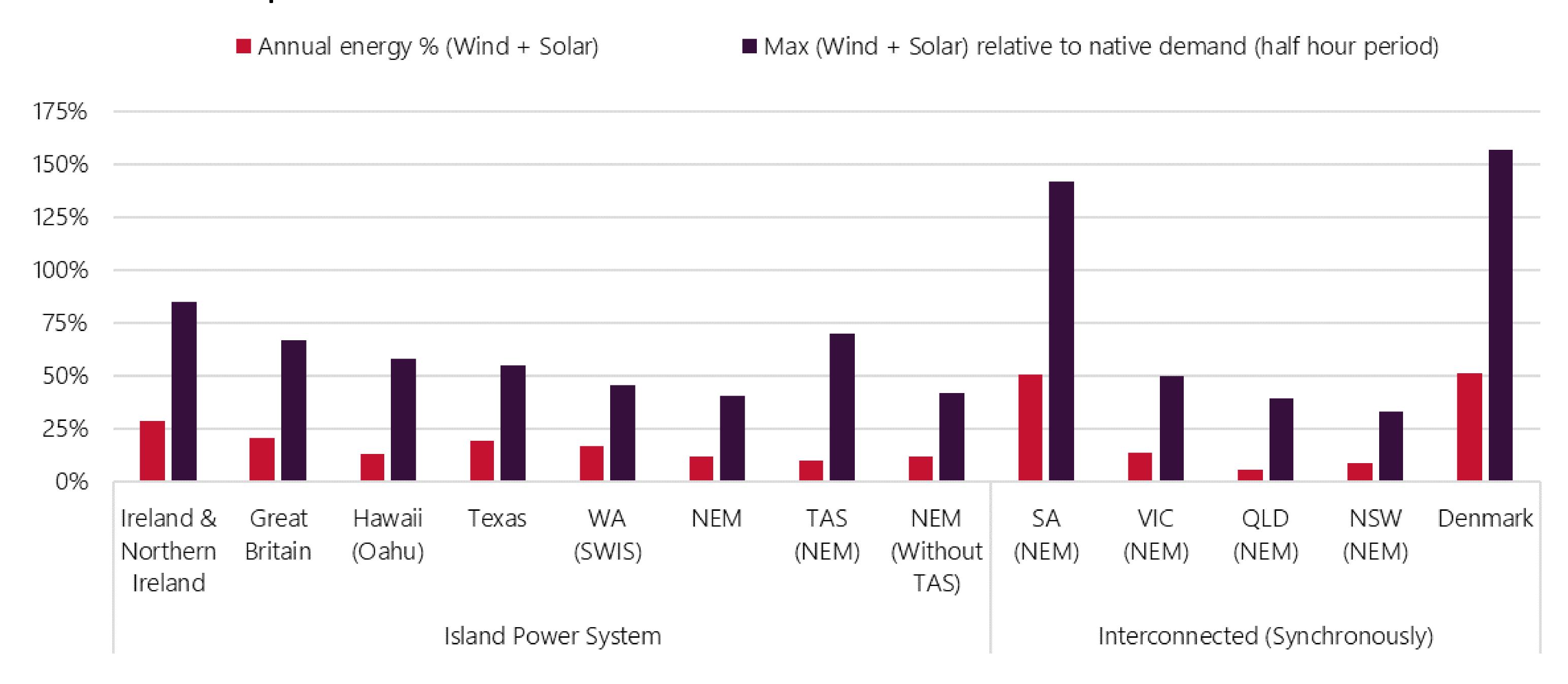
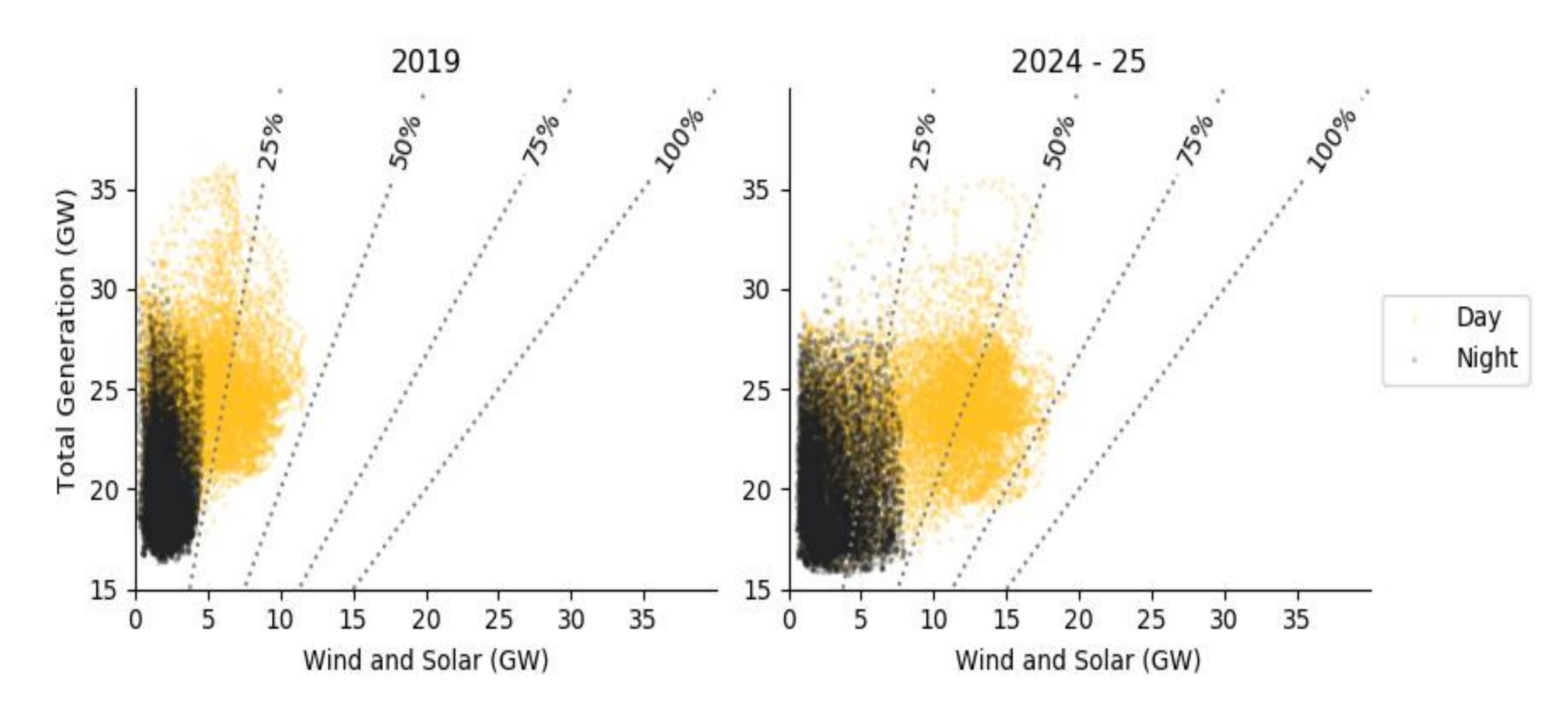
### REZ & Renewable Integration



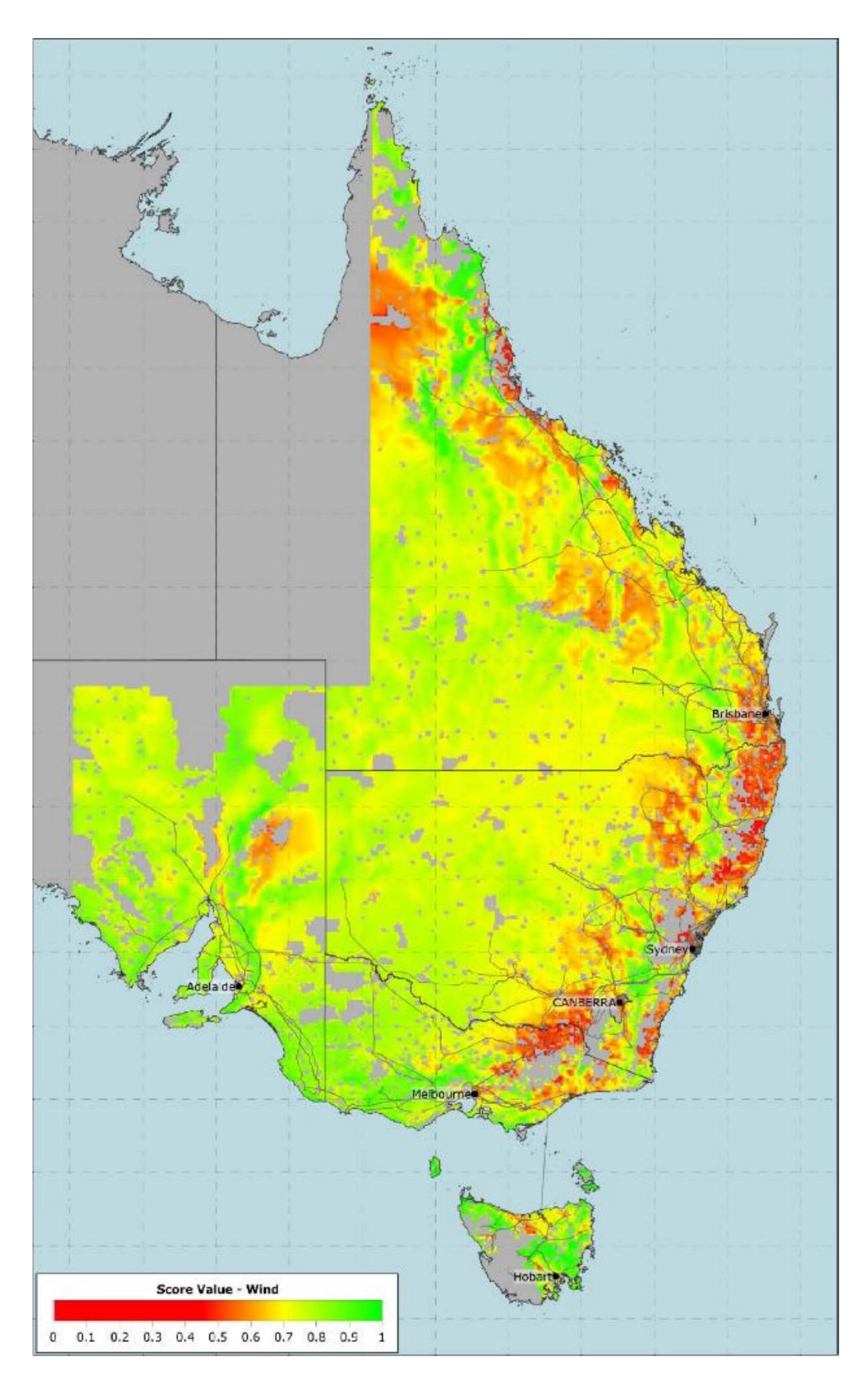
Large international power systems operating with high instantaneous penetrations of wind and solar generation, and Australian comparisons

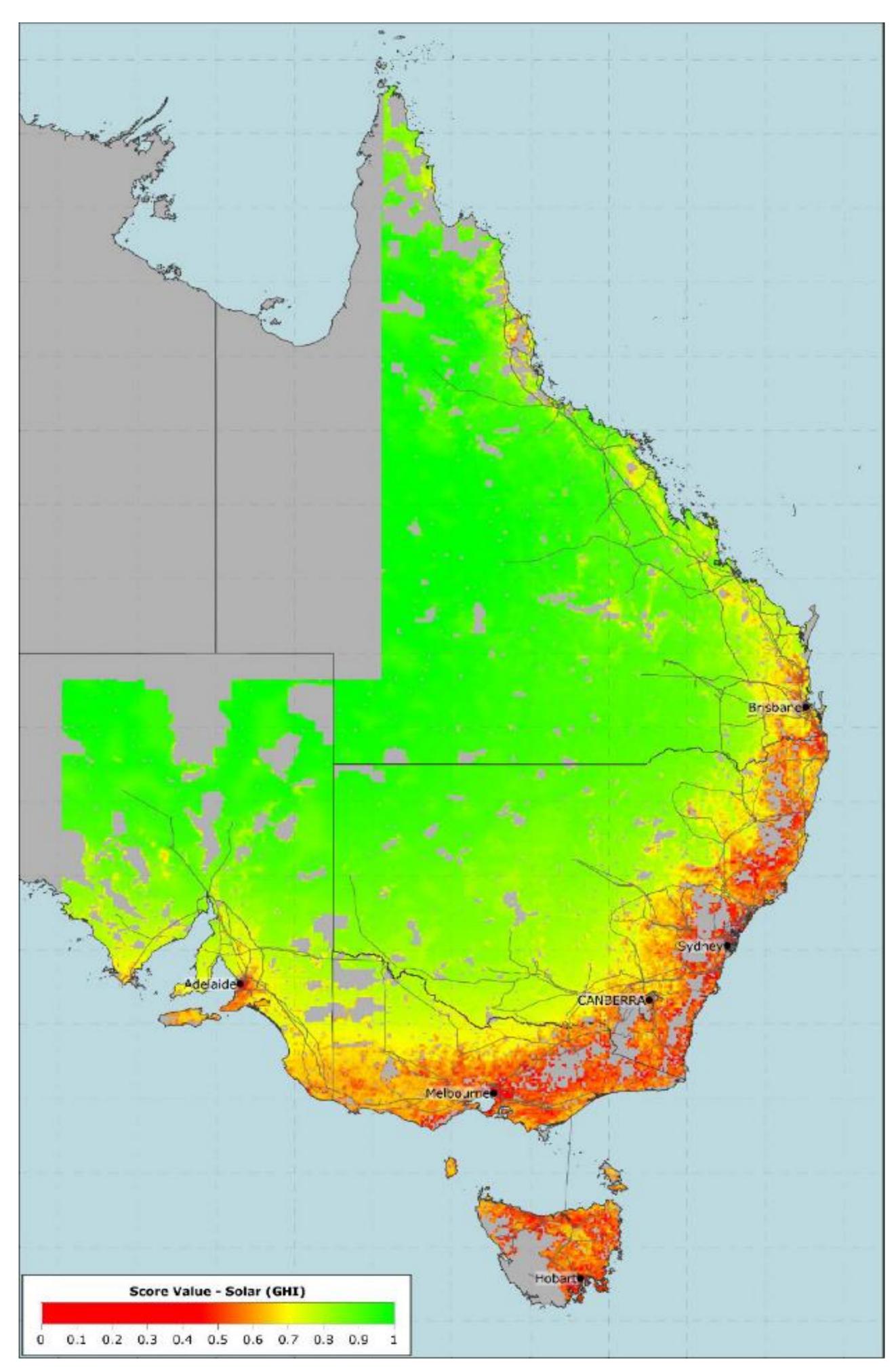


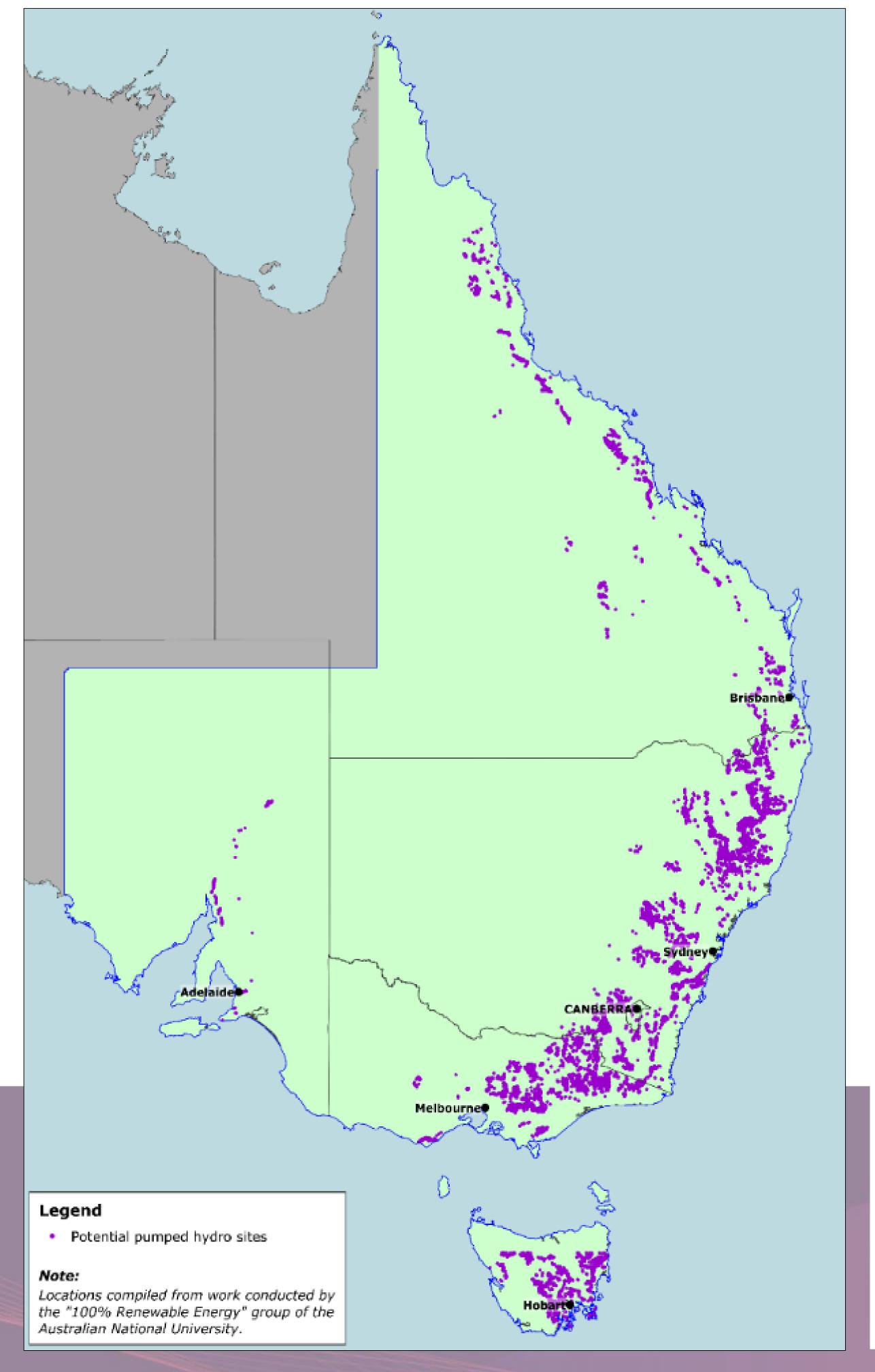
NEM total generation and wind and solar PV generation 2019 (actual) and 2025 (central scenario)

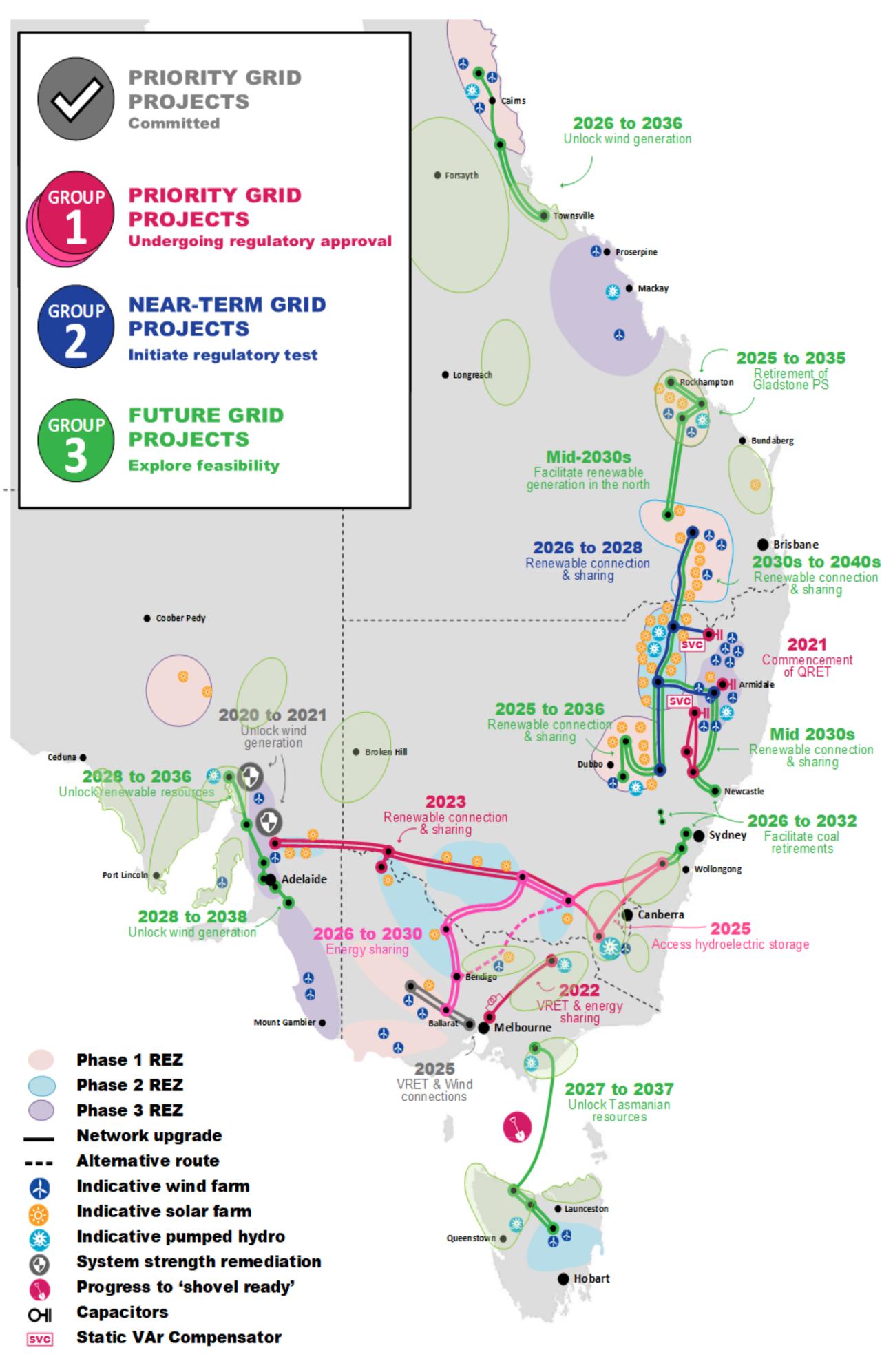












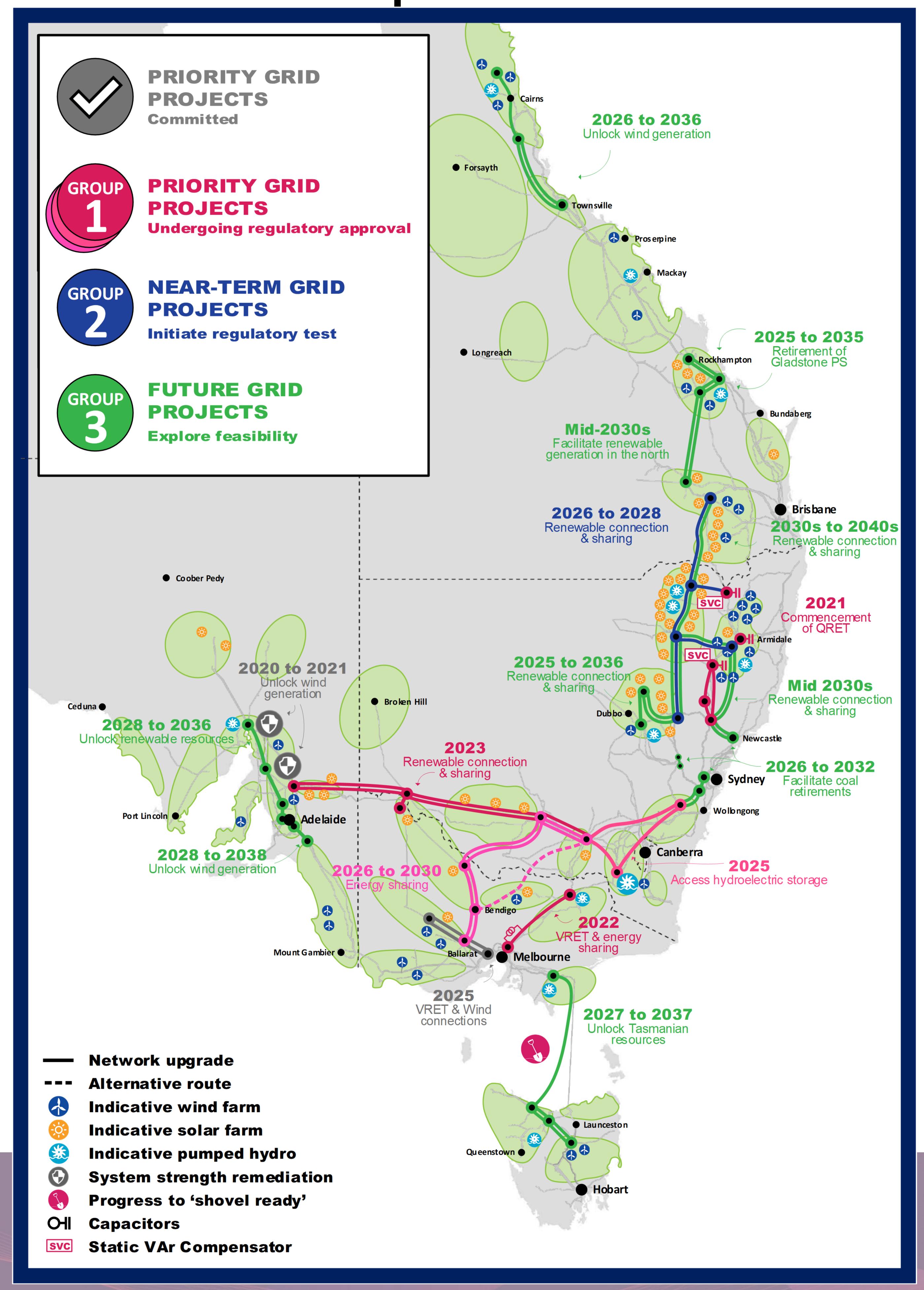


We have a few items that we could look at over the next 3 months before we issue the plan as final. To help us with our prioritisation, please place a star on your top two.

<b>System strength costs –</b> TNSP and 'Do no Harm' costs, sensitivities to consider inverter capability improvement in later years			
Projections of Marginal Loss Factors (MLFs)			
24-hour day analysis — <b>A day in the life of a REZ</b> (similar to the regional analysis already presented in Draft ISP)			
Methodology for the calculation of hosting capacity (spare capacity to connect generation)			
'Spurs' beyond the standard interconnector routes (i.e. to expand the grid to nearby REZs)			
Integration of DER- operational limits are likely, at least in the near term to the amount of uncontrollable generation that the transmission and distribution system can securely accommodate under different scenarios			
Frequency control – minimum requirements for inertia			
Have an idea that's not on our list? Please add it			

# Planning: Network and non-network options







We have a few items that we could look at over the next 3 months before we issue the plan as final. To help us with our prioritisation, please place a star on your top two.

Route selection for VNI-West path (via Kerang or Sheppartor	1)
More technical details on the recommended network upgra	ades
Understanding the impact of transmission cost changes	
Exploration of minor Central to Southern QLD upgrade option	ons in medium term
Economics behind <b>non-network options</b>	
What does ' <b>shovel ready</b> ' mean	
More analysis of c <b>limate resilience for networks</b>	
	Have an idea that's not on our list? Please add it

### Energy Outlook:

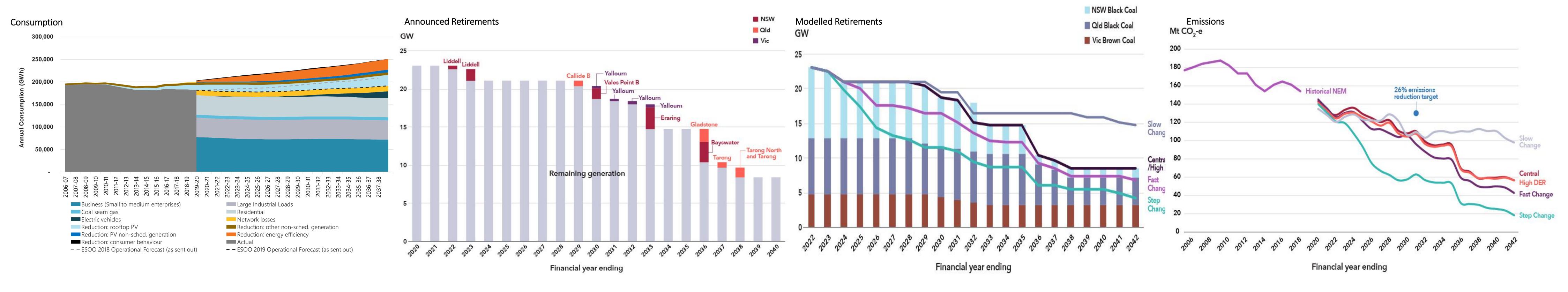


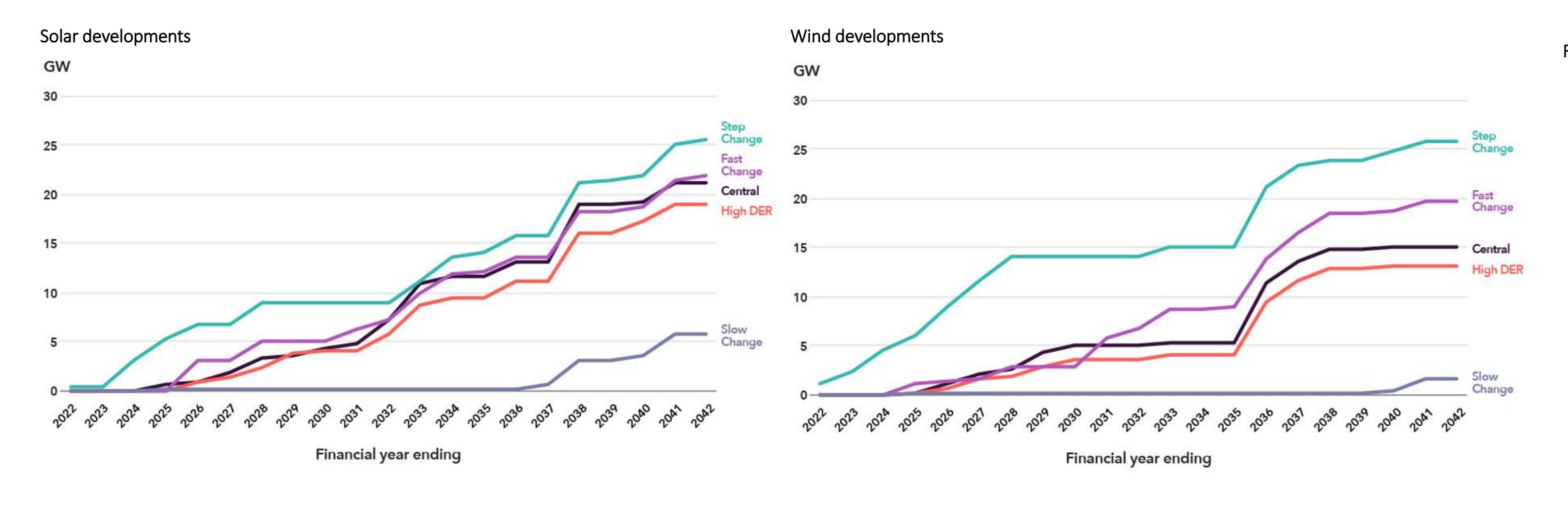
### Forecasts, DER, Storage to 2040

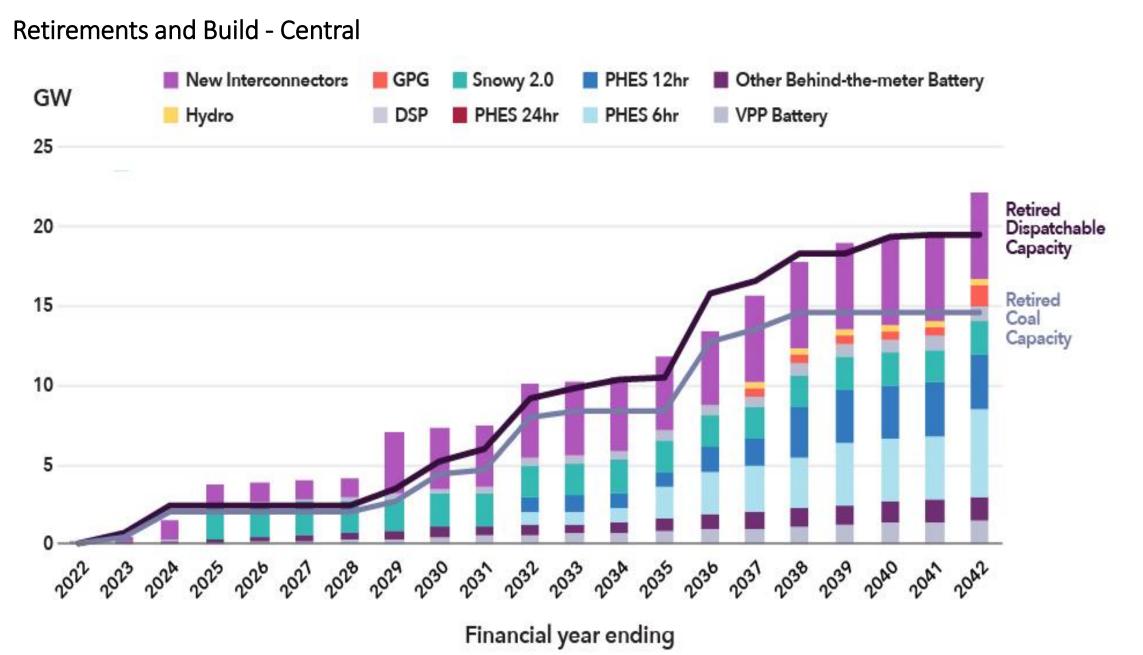


# Energy Outlook: Forecasts, DER, Storage to 2040











Are there items we could look at over the next 3 months before we issue the plan as final?

Have an idea? Please add it

# Decision Making and Least Worst Regrets



#### Common developments in all pathways

- QNI Minor
- VNI Minor
- EnergyConnect
- Humelink
- QNI Medium

#### Candidate Pathway #1: No Accelerated Action

Deferred decisions on VNI West and Marinus Link

#### Candidate Pathway #2: Accelerate VNI West

- Immediate commencement of VNI West to deliver by 2028-29 (or as early as 2026-27 if expedited)
- Provides resilience to early retirements

#### Candidate Pathway #3: Accelerate Marinus Link

- Immediate commencement of Marinus Link to deliver by 2026-27
- Provides resilience to early retirements

#### Candidate Pathway #4: Accelerate VNI West and Marinus Link

- Immediate commencement of both VNI West and Marinus Link
- Provides maximum resilience to early retirements

#### Candidate Pathway #5: Accelerate VNI West <u>and</u> maintain early delivery option for Marinus Link

- Immediate commencement of VNI West
- Progress design and approvals for Marinus Link (making it 'shovel ready')
- Provides maximum resilience to early retirements

Scenario / Sensitivity	No accelerated action	Accelerated VNI West	Accelerated Marinus Link	Accelerated VNI West and Marinus Link	Accelerated VNI West and shovel-ready Marinus Link
Central	\$0M	-\$67M	-\$288M	-\$380M	-\$108M
High DER	\$0M	-\$83M	-\$279M	-\$470M	-\$124M
Step Change	-\$240M	-\$139M	\$0M	\$0M	\$0M
Slow Change	\$0M	-\$25M	-\$130M	-\$155M	-\$155M
Fast Change	\$0M	-\$80M	-\$25M	-\$170M	-\$121M
Worst Regret	-\$240M	-\$139M	-\$288M	-\$470M	-\$155M
Early retirement sensitivity	-\$118M	\$0M	-\$156M	-\$307M	-\$41M



We have a few items we could look at over the next 3 months before we issue the plan as final. Put a star on your top item.

Impact of <b>new project commitments</b> on the benefits of the optimal developments	nt pathway
Alternative counter-factual analysis	
Further consideration of honofits of staging and decision gateways	
Further consideration of benefits of staging and decision gateways	
Have an ide	a that's not on our list? Please add it

## Prioritisation for final ISP



We have a few items listed here that we have identified as important for us to incorporate in our workscope over the next 3 months before we finalise the ISP. Please add further suggestions on sticky notes below. To help us with prioritisation, please place a star on your top two items (whether a new suggestion already added on stick note, or one we have identified).

Further validation of the plan through detailed hourly simulations
Resilience to climate change – we will be including a chapter on this in the Final ISP
Central West NSW REZ – other sensitivities with generation development in this zone
Choice of route selection for VNI West
In step change scenario, are we confident the system is operable in 2040?
Cost increases on interconnectors or generators (capex generally)
Projections of Marginal Loss Factors (MLFs)

Other?

# Suggested workshop areas that have been screened out



In prioritising the most important analysis, it has also been necessary to identify further analysis that is "nice to have" but unable to be delivered in time for this ISP, as listed below. Please add a star on anything you feel should be prioritised ahead of items listed above, and add reasoning on a stick note. Feel free to add other suggestions raised during this workshop that you do not consider relevant for the Final ISP.

Detailed analysis of FCAS/ancillary services to value other services delivered by
storage
Sensitivities with and without Snowy 2.0
Price outcomes
Detailed analysis of impact of hydrogen
Black start requirements at each region
Othor2

Ouiei: