AEMO
AUSTRALIAN ENERGY MARKET OPERATOR

2022 Integrated System Plan

ISP Public webinar: July 2022

Recording in progress

This session is being recorded. The recording will be published on AEMO's website, along with this presentation.

Questions and answers

We are using Slido chat. If your device has the Webex app, the chat will be embedded automatically. If you are joining the webinar through an internet browser, open a new window to access the chat.

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#ISP22

We acknowledge the Traditional Owners of country throughout Australia and recognise their continuing connection to land, waters and culture.

We pay respect to their Elders past, present and emerging.

Agenda

- Consultation on the Draft ISP
- Changes from the Draft ISP
- Scenarios and weightings recap
- ISP Development Opportunities (VRE, storage and gas-fired generation)
- Renewable Energy Zones
- Actionable and future ISP Projects
- Questions

Consultation on the Draft ISP

Stakeholder submissions

- **78 submissions**
- Draft ISP: 75
- Draft ISP addendum: 3

Broad stakeholder engagement

- Two public forums
- Q&A session
- Consumer verbal submission

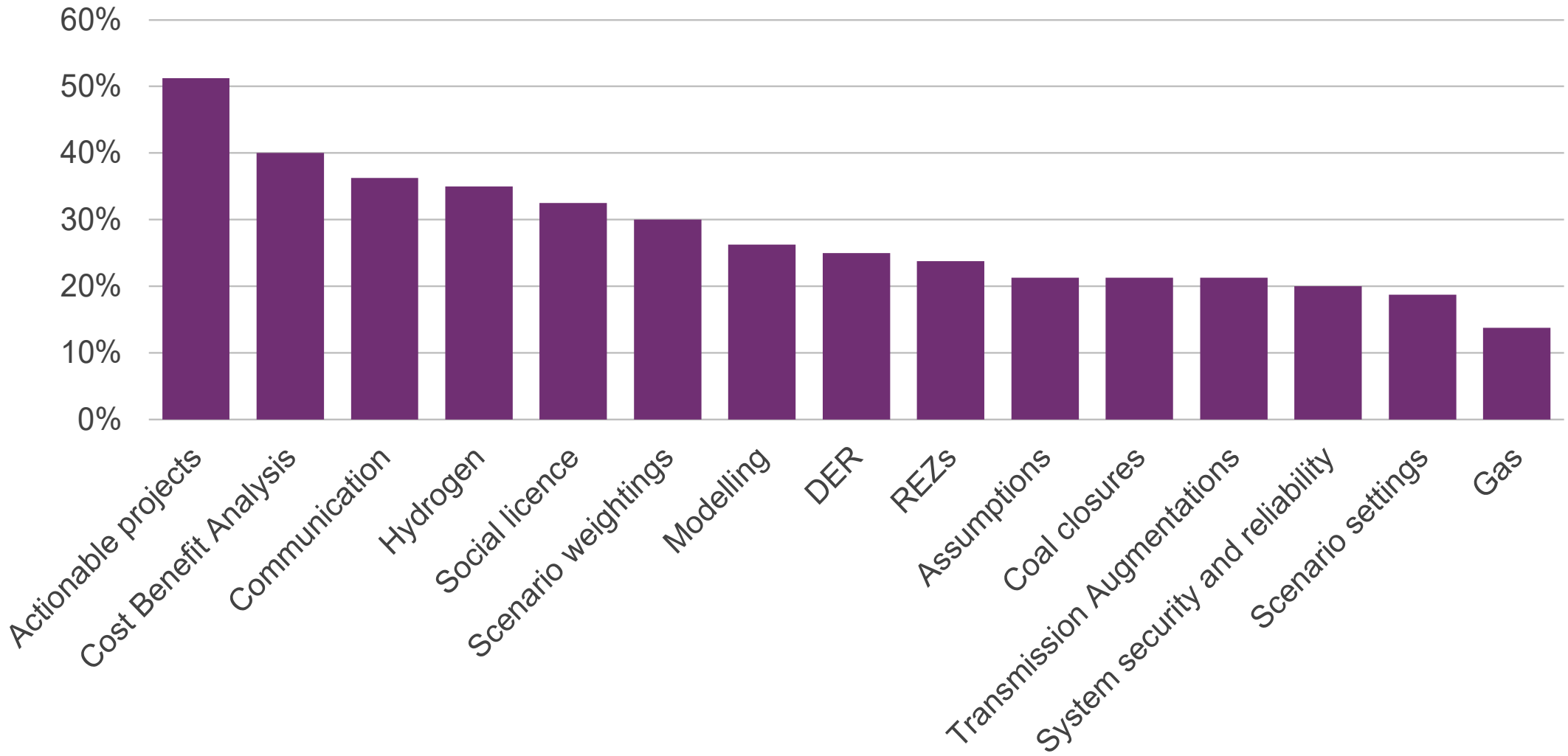
Consumer risk preferences

- Targeted engagement with energy consumer advocates

Stakeholder responses

- **Draft ISP Consultation Summary Response** report outlines stakeholder submission considerations

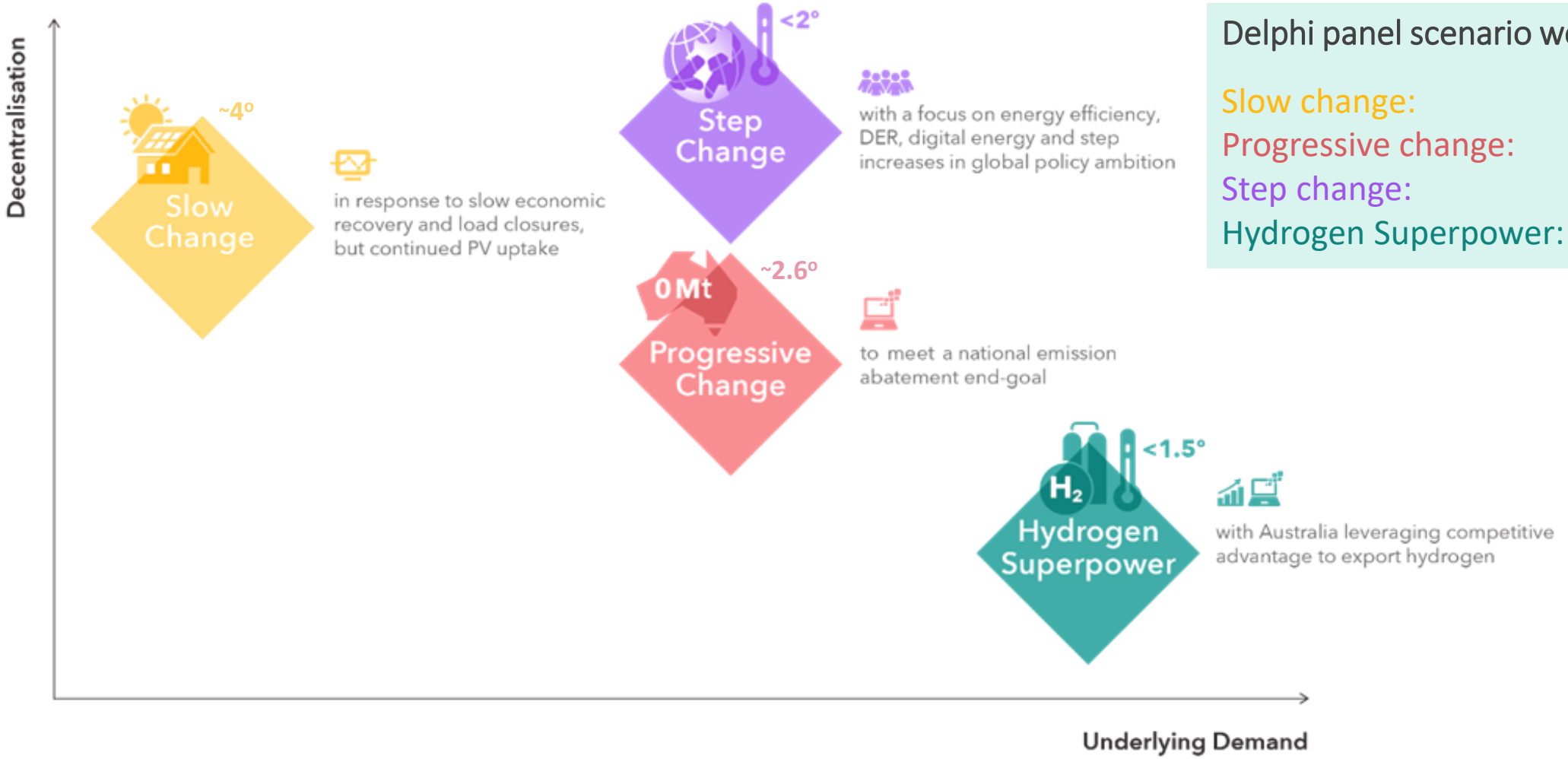
Key issues raised in ISP submissions



Changes from the Draft 2022 ISP

- The Optimal Development Path provides a resilient and robust transmission plan.
- Since the Draft ISP, AEMO has conducted **additional sensitivities**, **distributional effects** analysis, **expanded climate resilience modelling**, demonstrating that:
  - **Actionable projects should be progressed as soon as possible**
  - **Decision Rules** have been removed, yet consumer protections with project staging remains
  - **Marinus Link** delivery timing has been updated
  - **Sydney Ring** and **New England REZ Transmission Link** will progress via the NSW Infrastructure Roadmap
  - **Preparatory Activities** declared for additional future ISP projects

Scenarios and their weightings



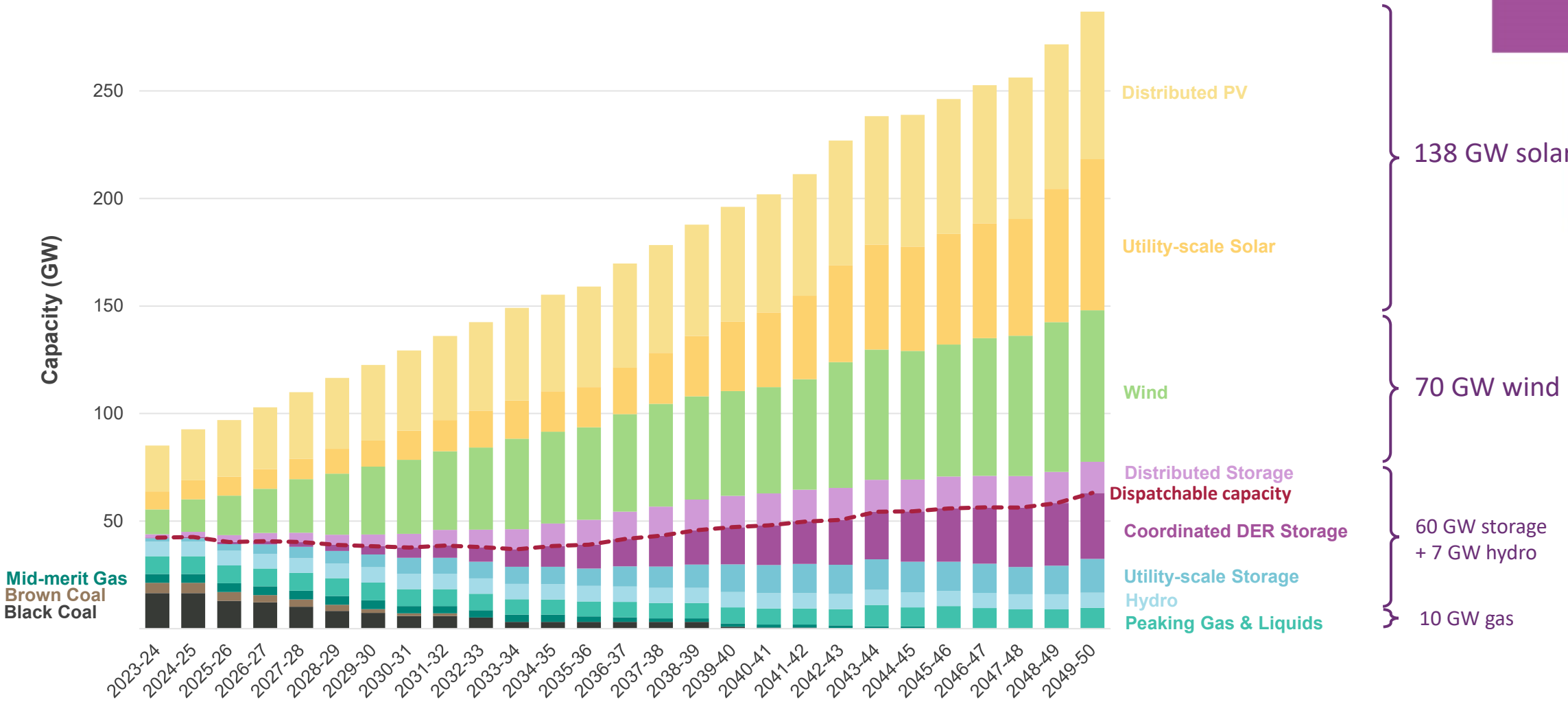
Delphi panel scenario weightings:

Slow change:	4%
Progressive change:	29%
Step change:	50%
Hydrogen Superpower:	17%

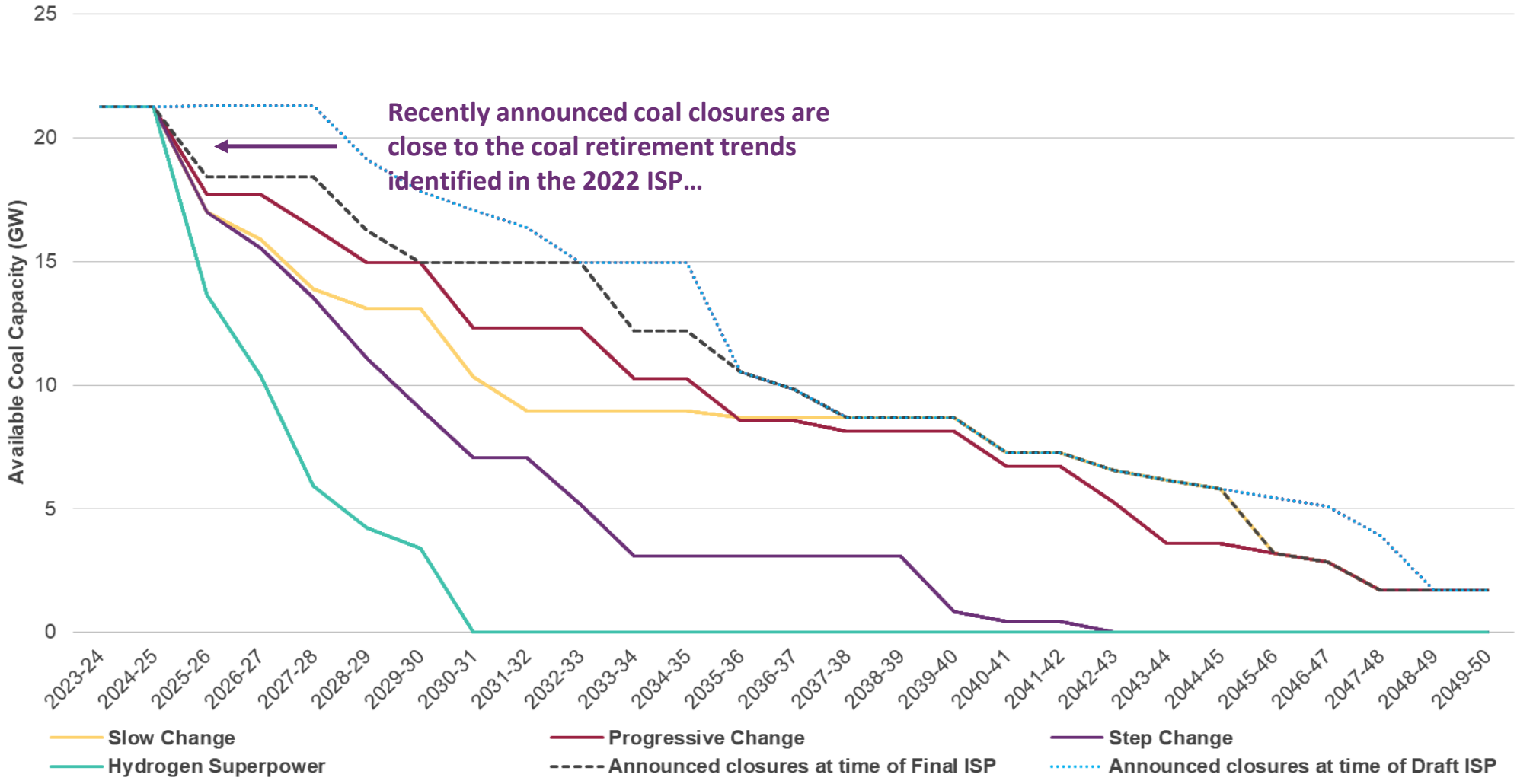
Capacity mix of the future NEM

ISP Development Opportunities

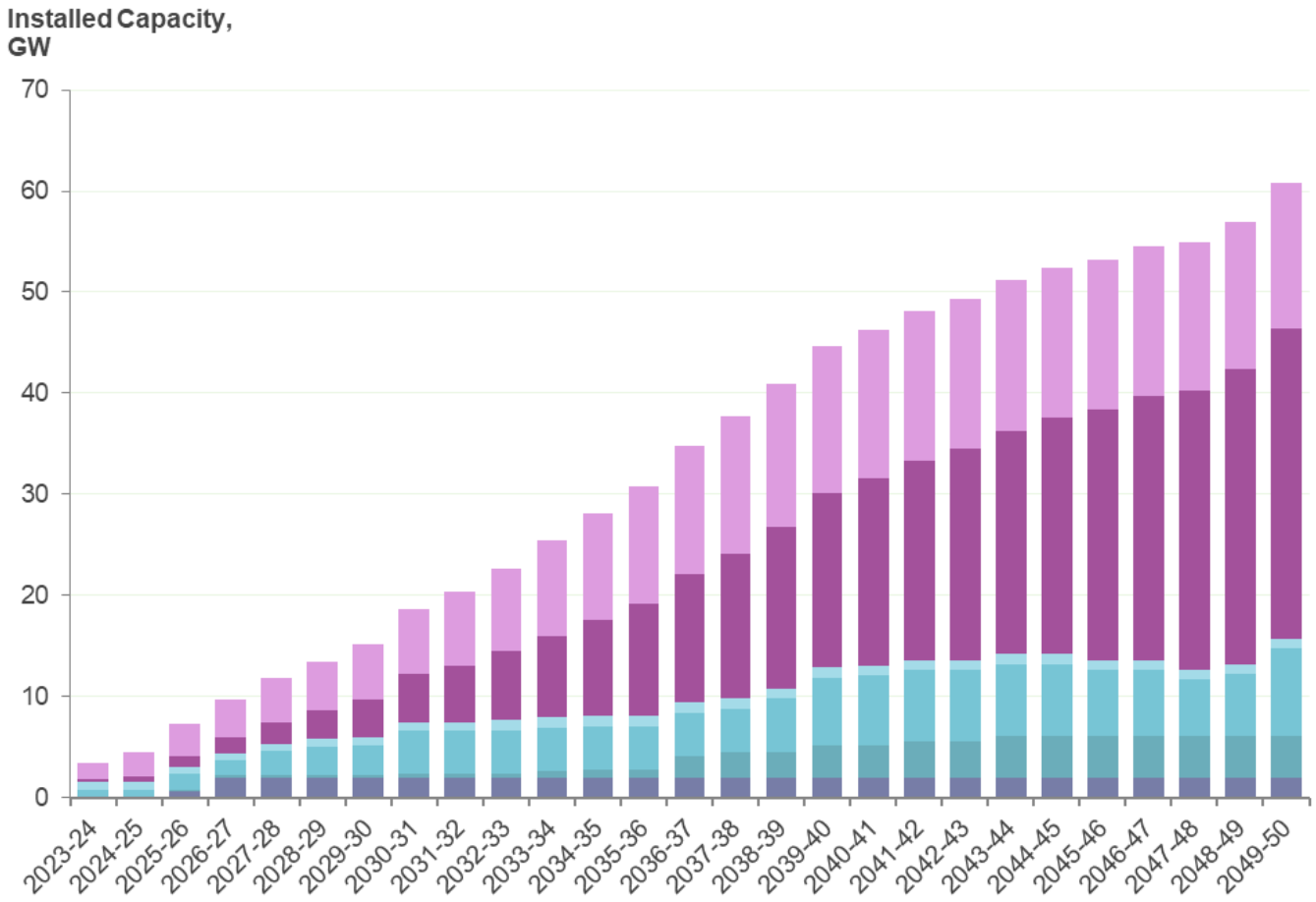
Renewable capacity to at least double every decade from now to 2050…

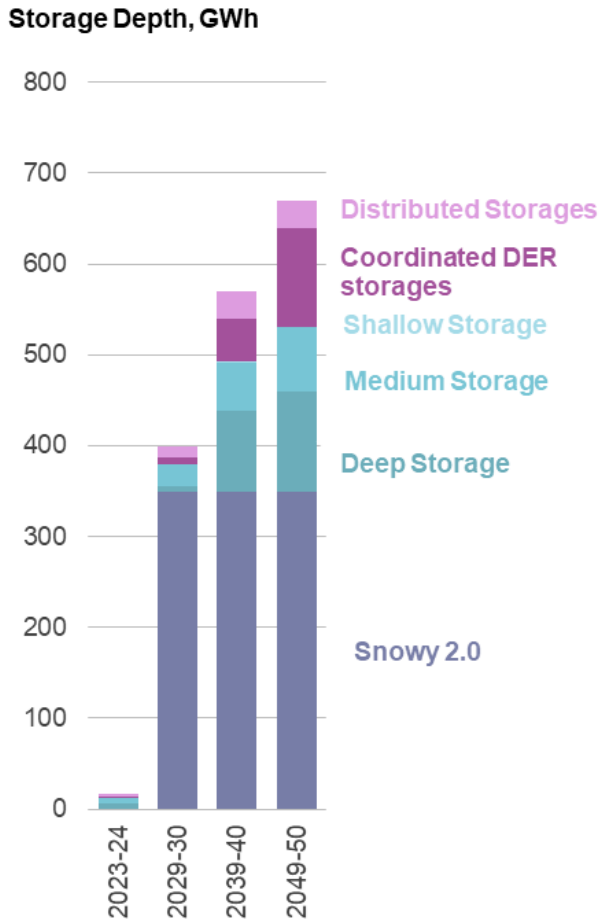


…coal likely to withdraw within the next decade or two…



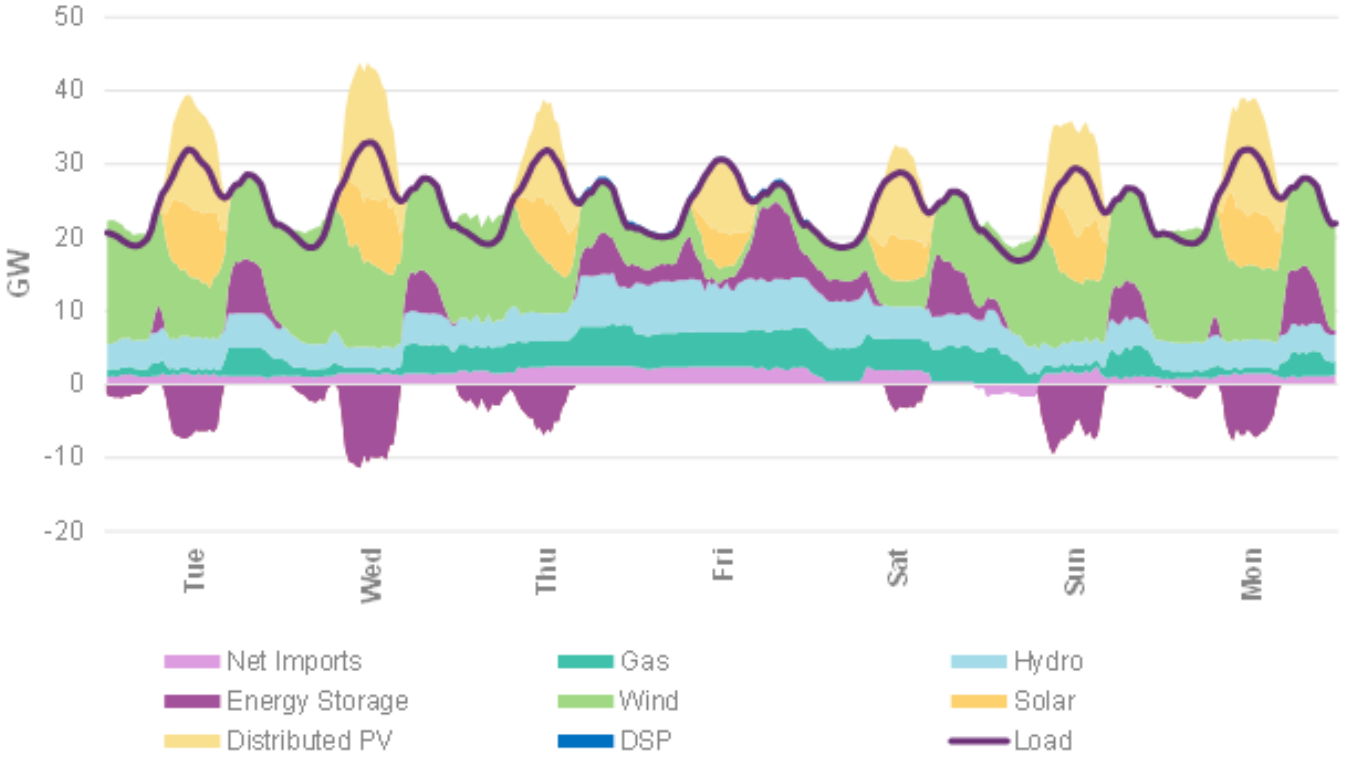
…requiring firming capacity from storage of all depths…



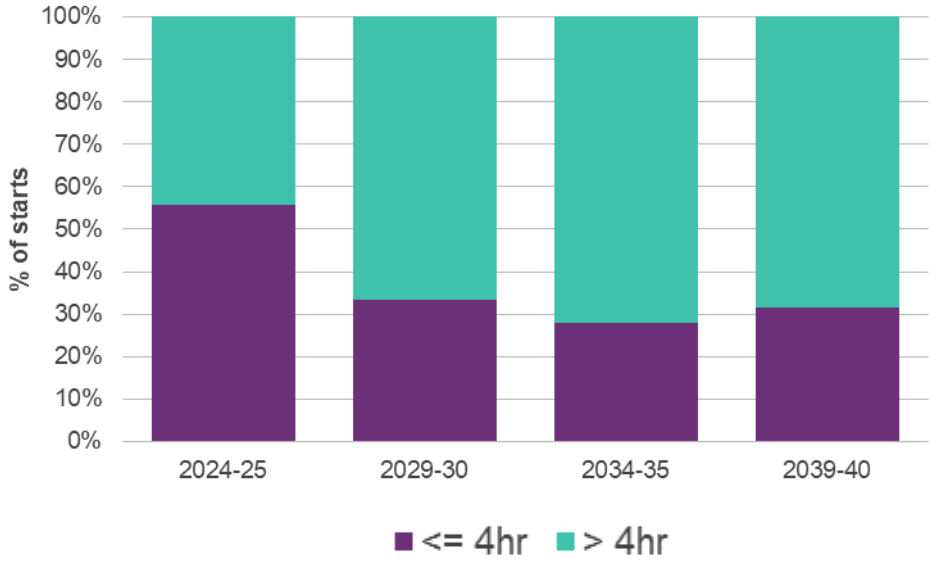


…as well as from gas generation to help address dark and still periods.

Example of winter operability across VIC, NSW, SA & TAS in a low VRE period in 2040

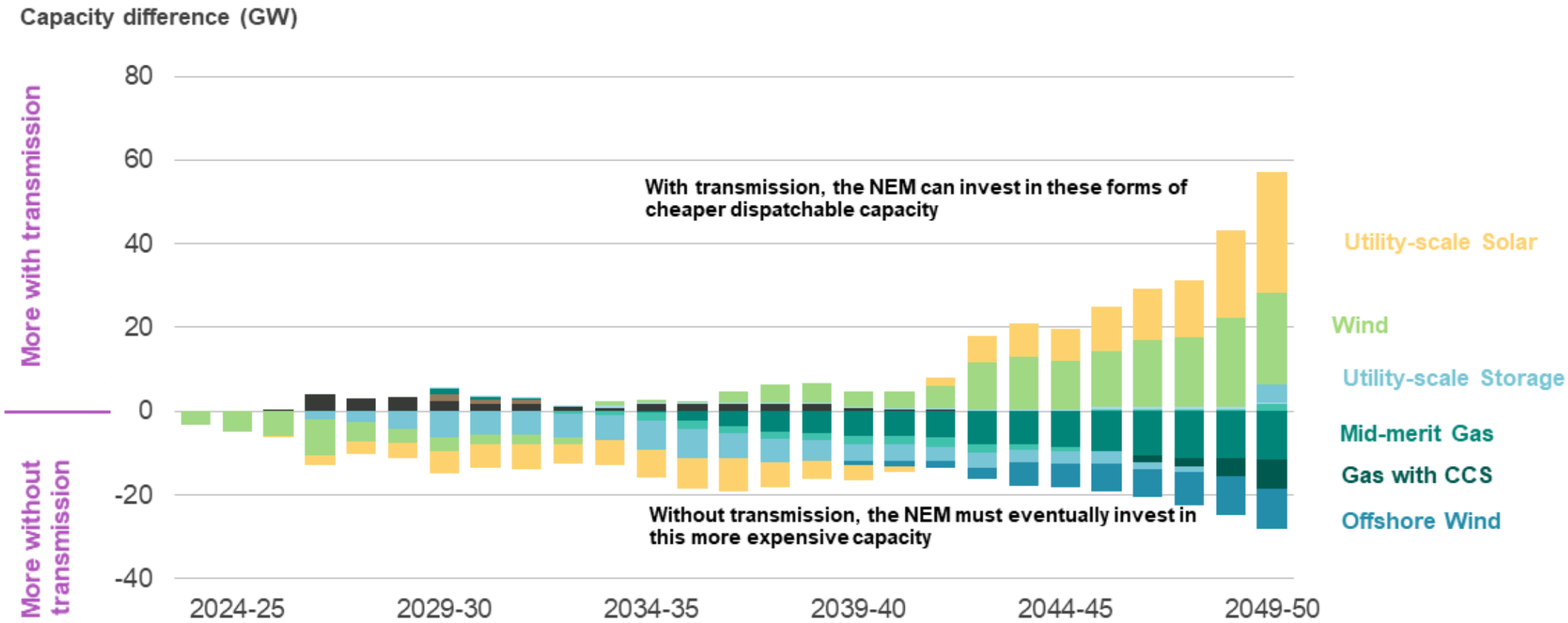


Length of runs of gas-fired generation

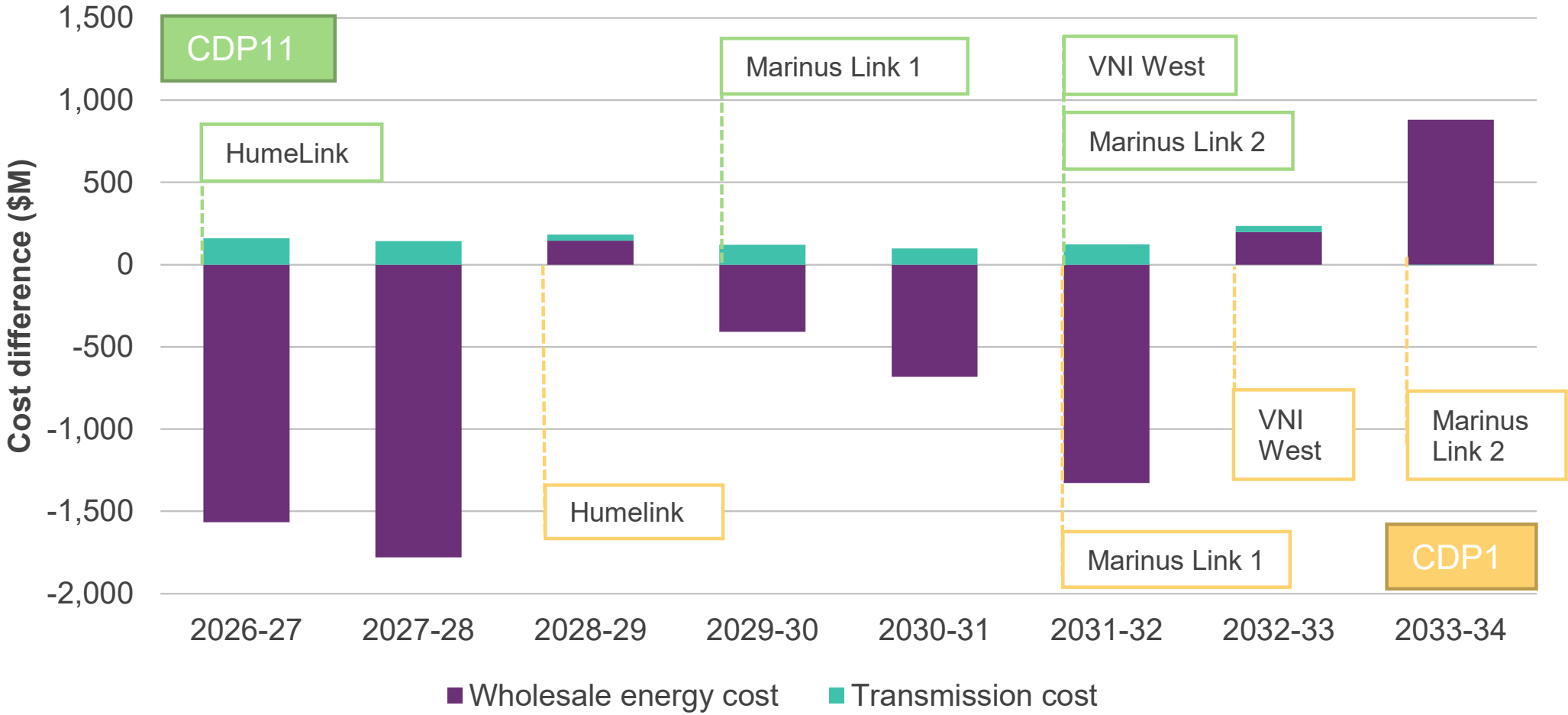


While the length of typical gas generation operation may extend to cover periods of low renewable generation, the frequency of these dark and still events is also low with greater resource diversity.

Transmission enables more efficient capacity development in the NEM...



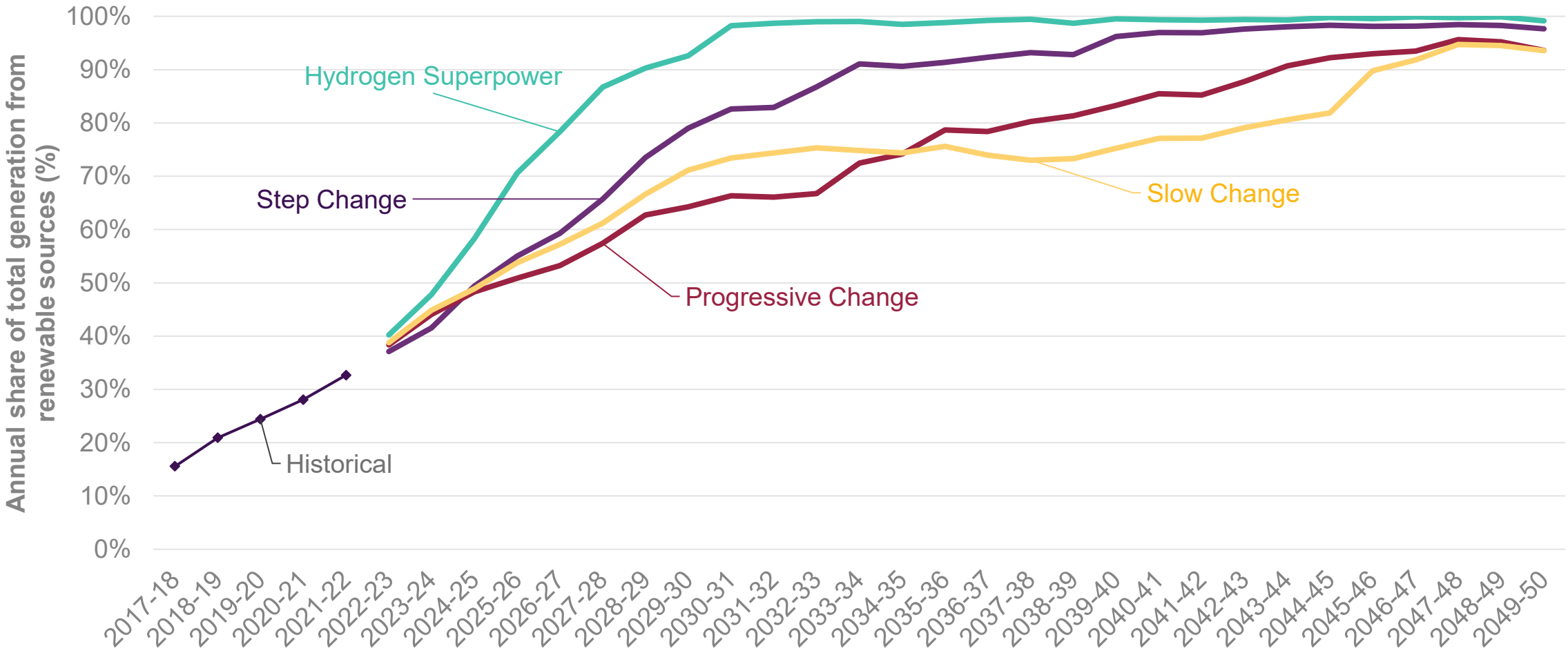
...and potential savings in wholesale energy cost far outweighing the additional cost of early transmission



The timings of major augmentations in each CDP are denoted by the coloured labels showing the years in which they become operational.

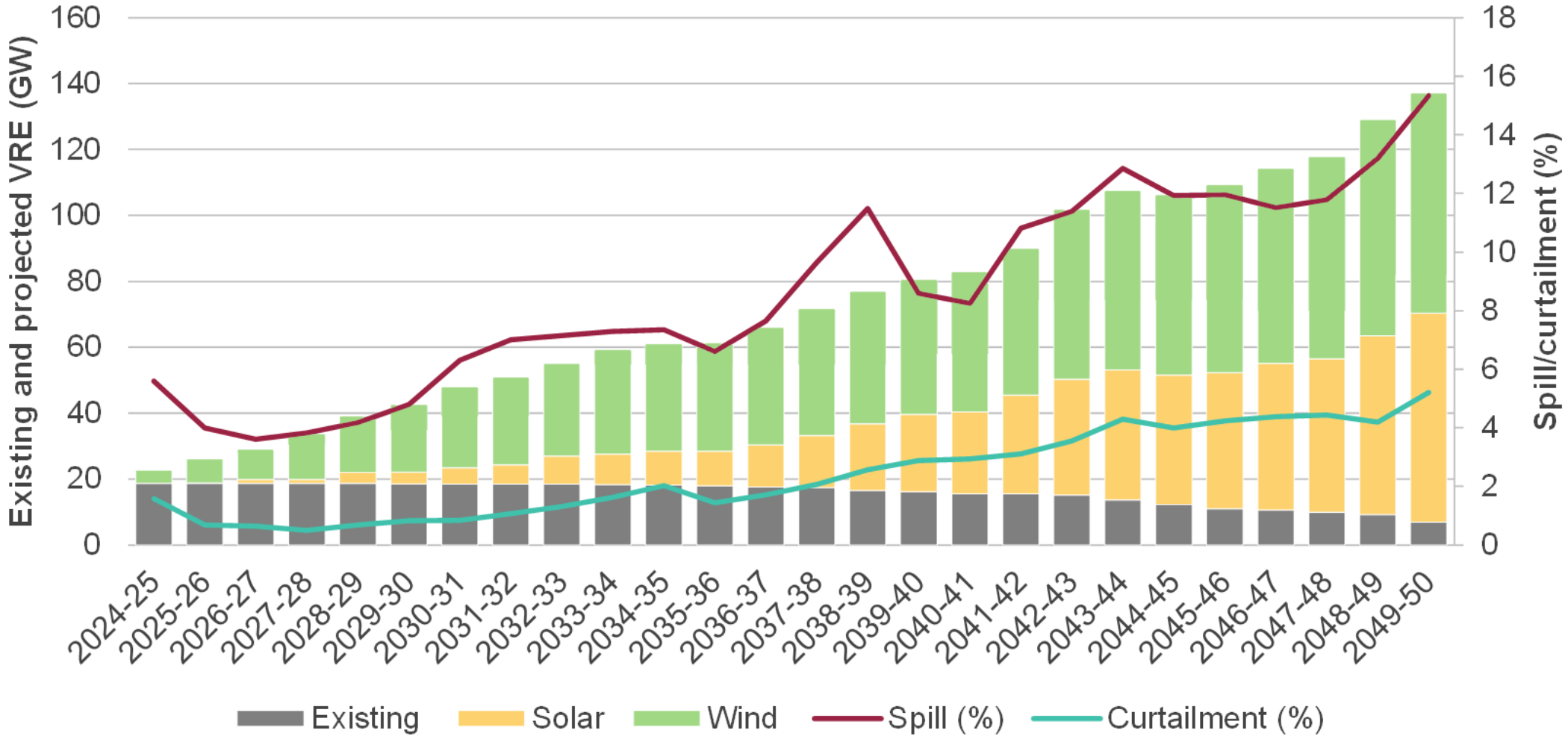
Renewable Energy Zones

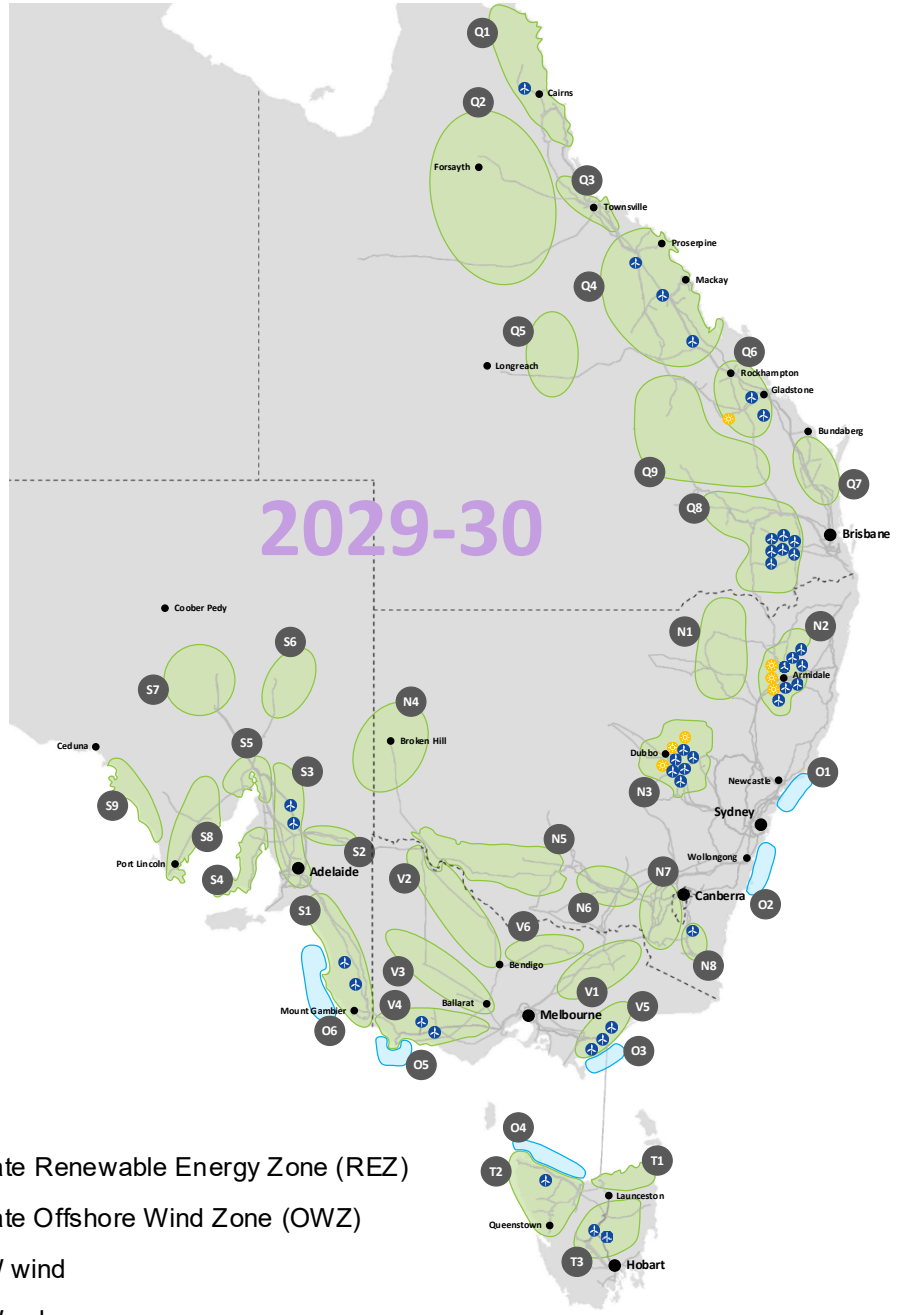
The NEM is continuing its transformation to higher levels of renewable energy output

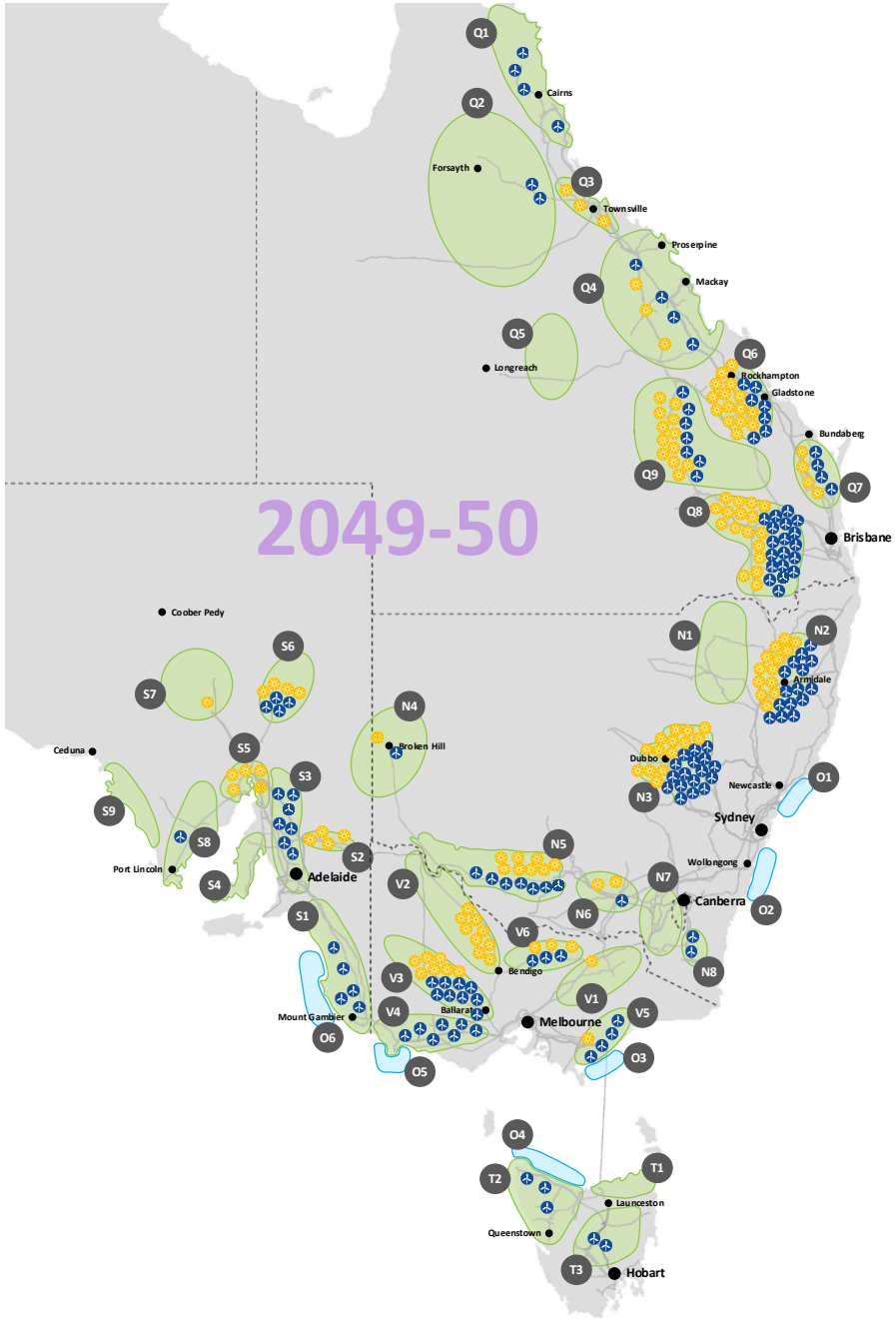


Curtailment and spill will be efficient

Projected utility-scale VRE in REZ for the NEM, economic spill and transmission curtailment







Candidate Renewable Energy Zone (REZ)

Candidate Offshore Wind Zone (OWZ)

500 MW wind

500 MW solar

Queensland

Q1 Far North QLD
Q2 North Qld Clean Energy Hub
Q3 Northern Qld
Q4 Isaac
Q5 Barcaldine
Q6 Fitzroy
Q7 Wide Bay
Q8 Darling Downs
Q9 Banana

New South Wales

N1 North West NSW
N2 New England
N3 Central-West Orana
N4 Broken Hill
N5 South West NSW
N6 Wagga Wagga
N7 Tumut
N8 Cooma-Monaro

South Australia

S1 South East SA
S2 Riverland
S3 Mid-North SA
S4 Yorke Peninsula
S5 Northern SA
S6 Leigh Creek
S7 Roxby Downs
S8 Eastern Eyre Peninsula
S9 Western Eyre Peninsula

Victoria

V1 Ovens Murray
V2 Murray River
V3 Western Victoria
V4 South West Victoria
V5 Gippsland
V6 Central North Victoria

Tasmania

T1 North East Tasmania
T2 North West Tasmania
T3 Central Highlands

Offshore

O1 Hunter Coast
O2 Illawarra Coast
O3 Gippsland Coast
O4 North West Tasmanian Coast
O5 Portland Coast
O6 South East SA Coast

2022 ISP Optimal Development Path

Actionable and future ISP Projects

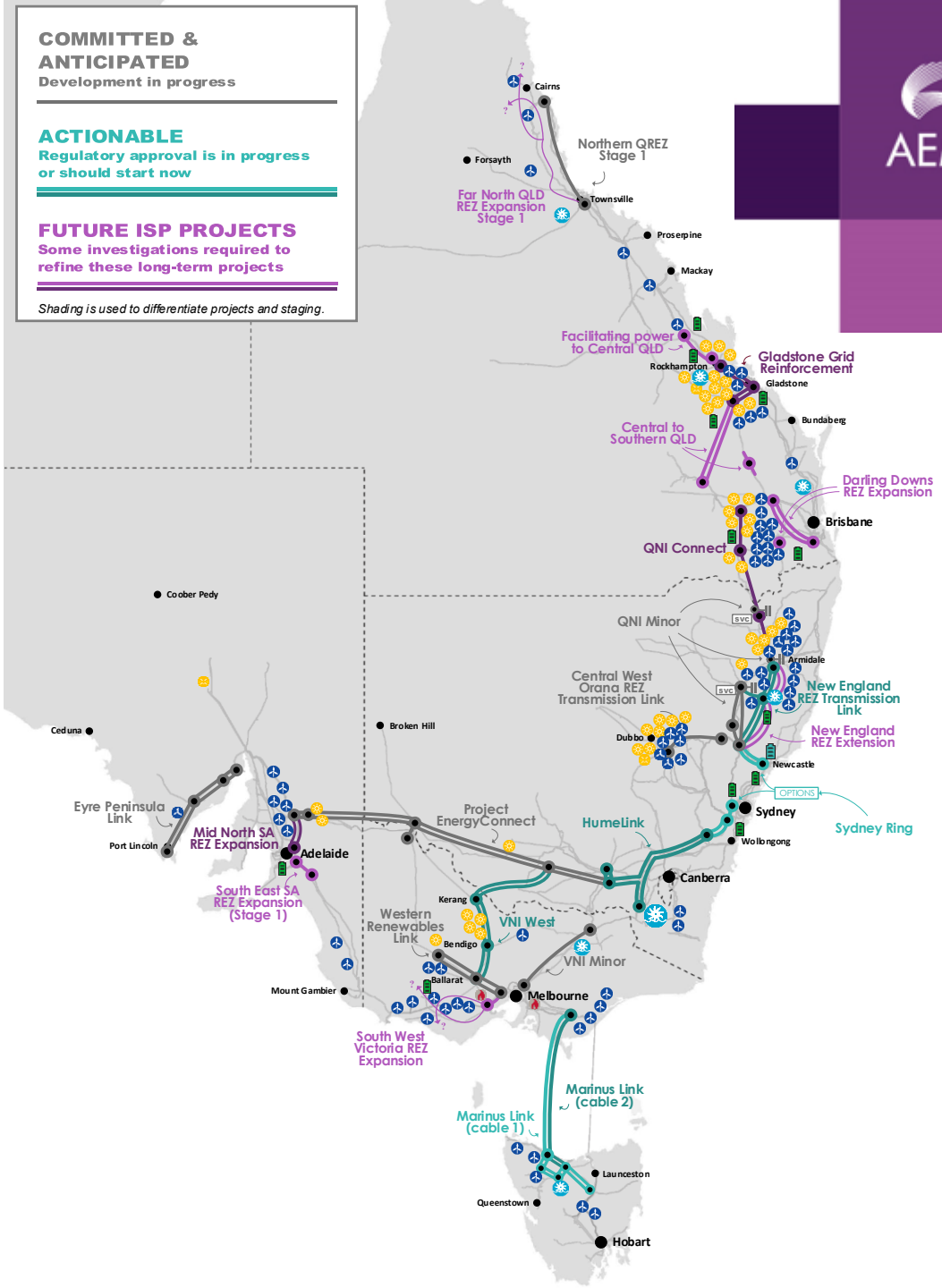
The optimal development path enables an efficient transition

The optimal development path (ODP) delivers **≈$28 billion** in net market benefits

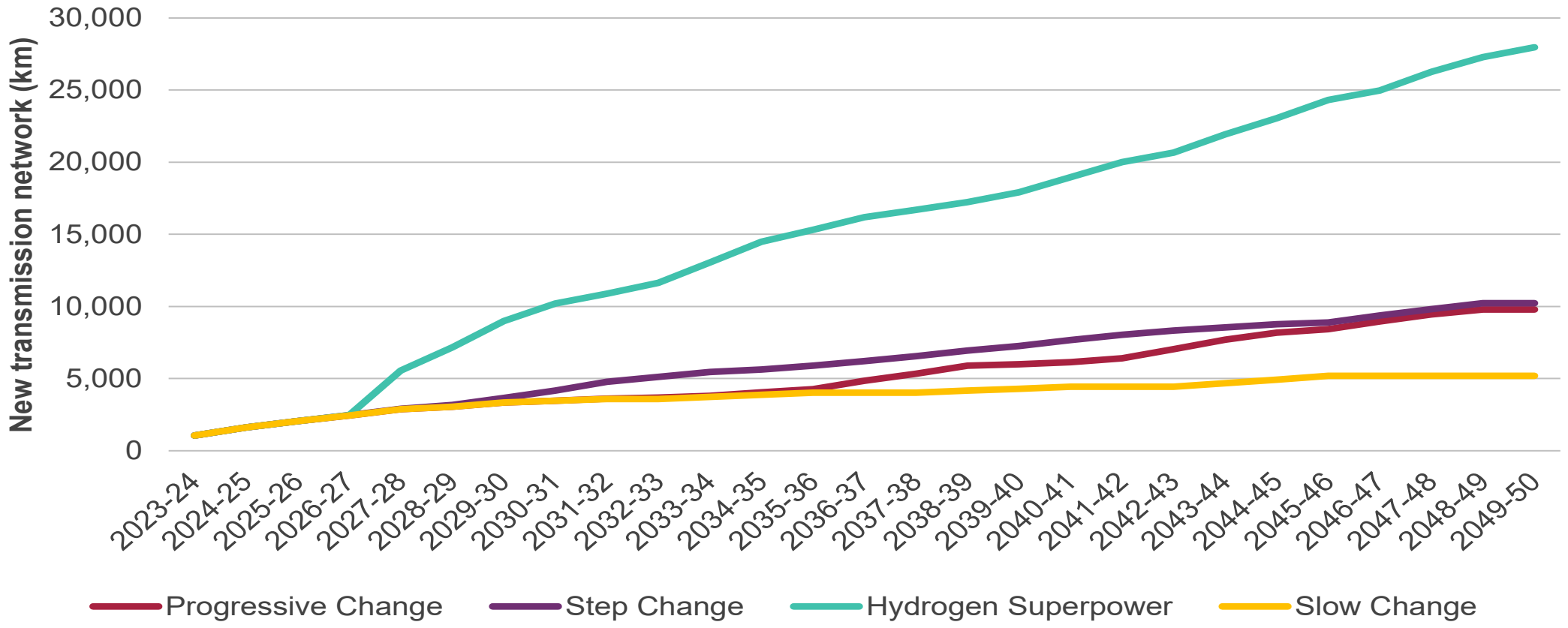
Provides **investment certainty** and **flexibility** to reduce emissions faster if needed

Helps mitigate risks of earlier coal closures, delayed generation, storage and transmission developments

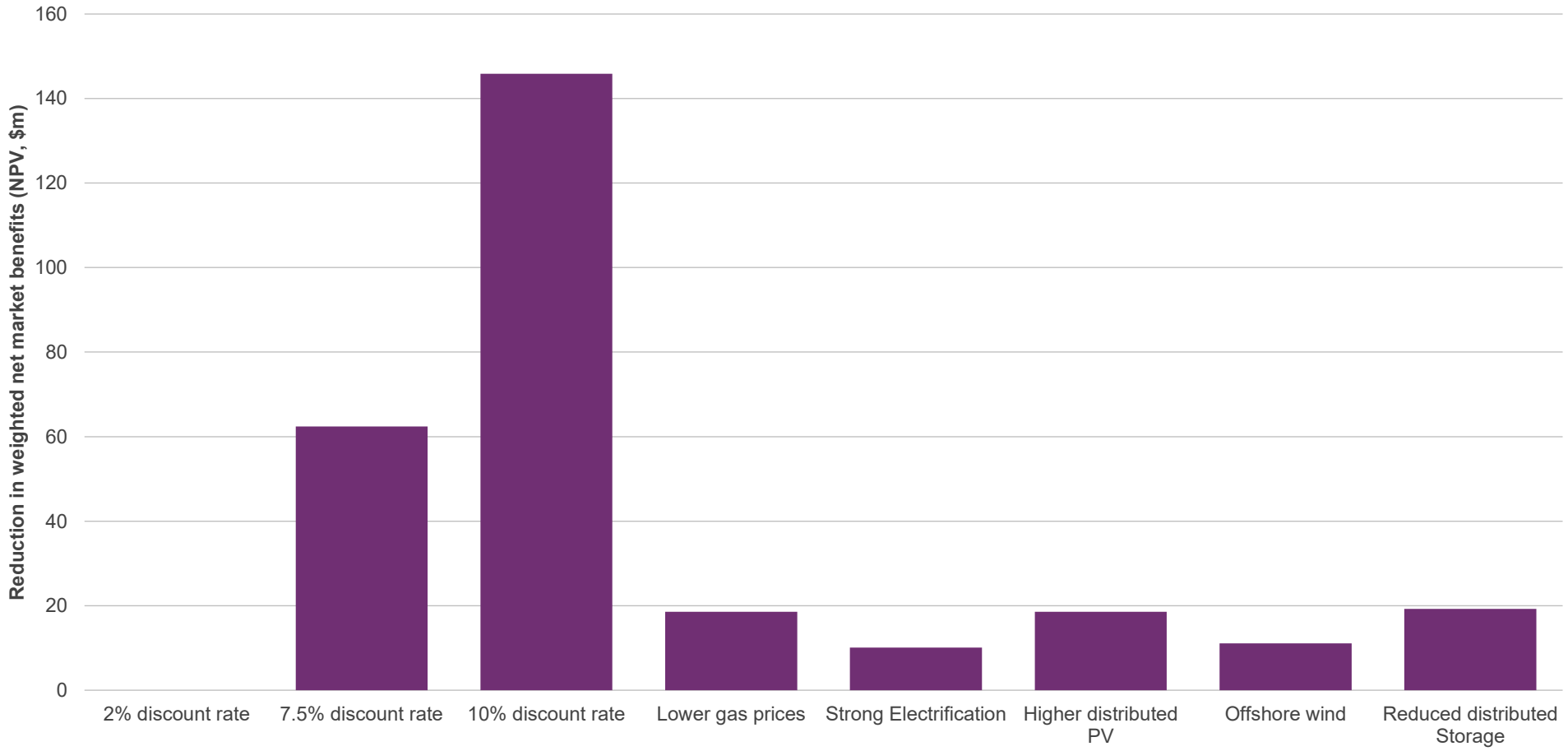
This optionality comes at almost no cost to consumers ($3 million)



ODP identifies 10,000 km of new transmission



ODP is also robust to sensitivity testing



Thank you for your contributions to the ISP

Any questions?

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