

2022 VGPR Update



Key themes

Production
decline

Reducing
resilience

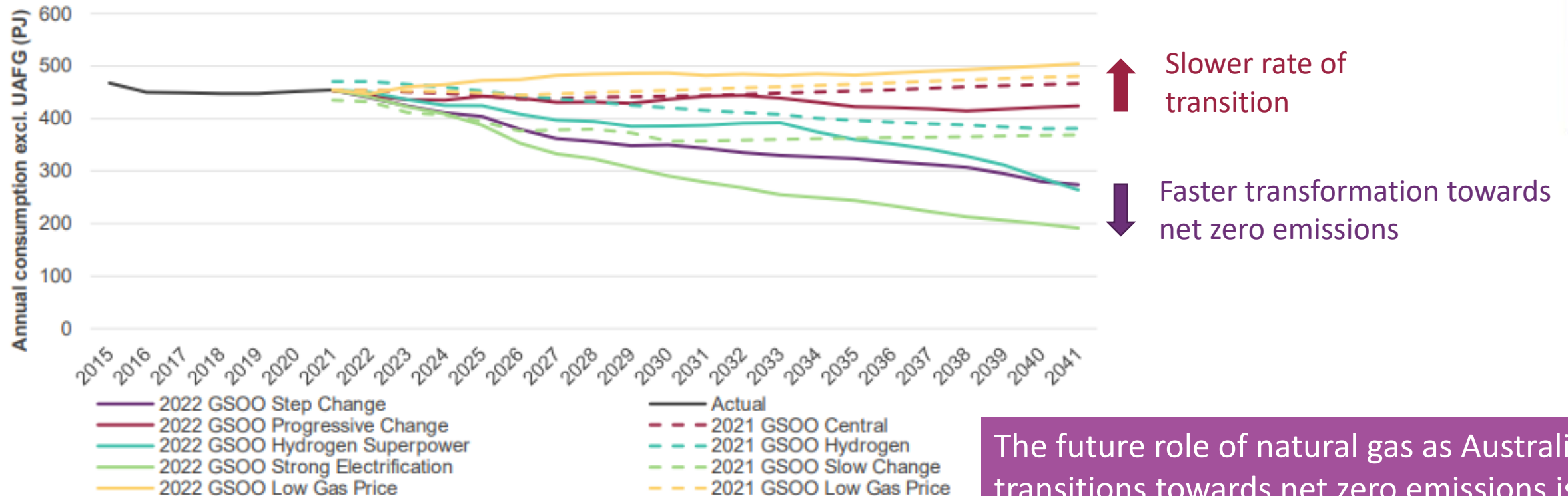
Delay in new
supply

Tight supply
balance

Demand
uncertain in
long term

Demand forecasts

Domestic consumption outlook (excluding gas generation)



The future role of natural gas as Australia transitions towards net zero emissions is a major uncertainty, exemplified by the speed of electrification and the potential impact of hydrogen

Gas demand forecasts – scenarios

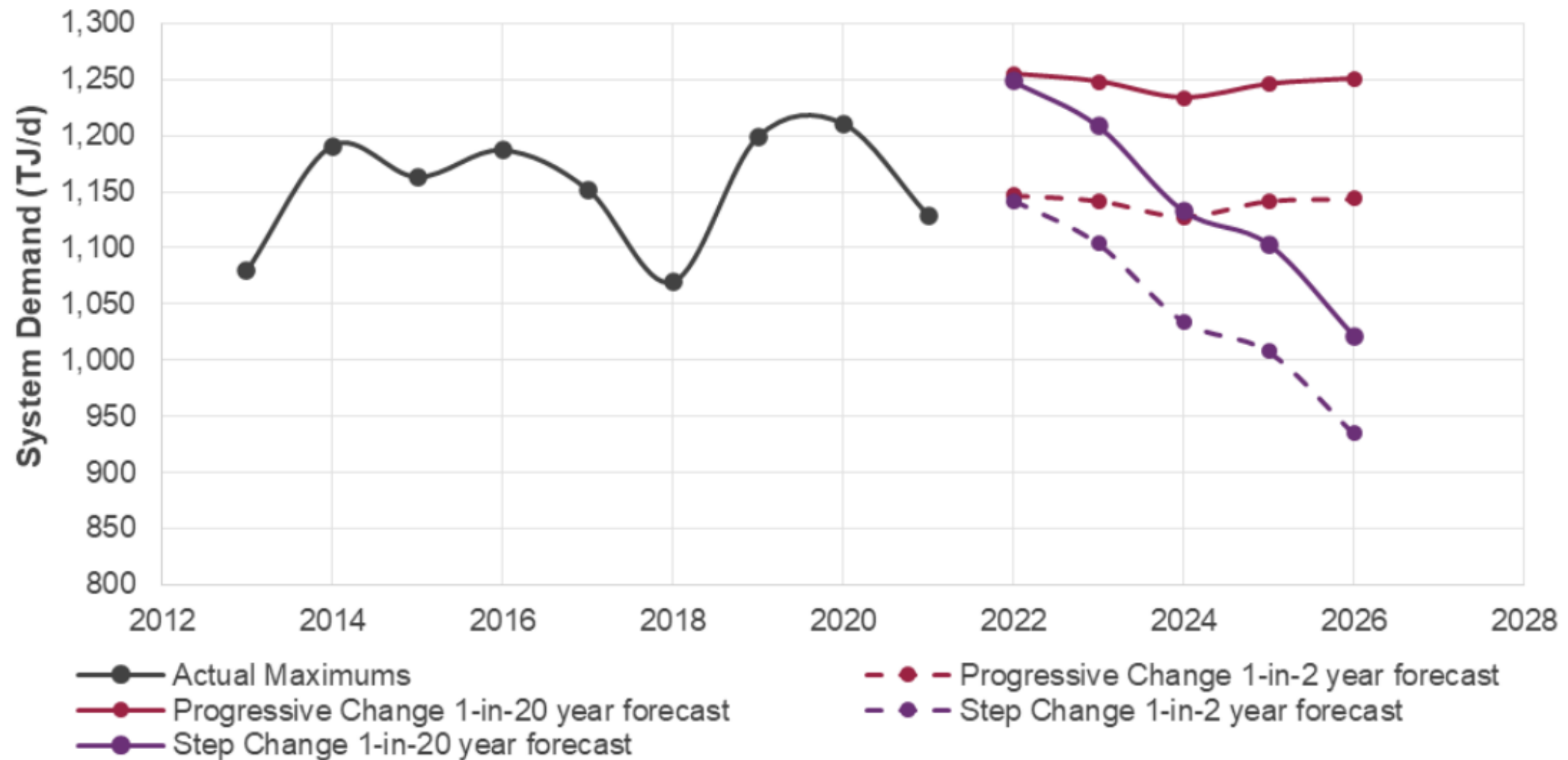
Step Change

Rapid transformation of the energy sector, coordinated economy-wide approach that efficiently and effectively tackles the challenge of rapidly lowering emissions (including electrification of gas heating load), driven by consumer-led change with a focus on energy efficiency, digitalisation and **step increases in global emissions policy above what is already committed**

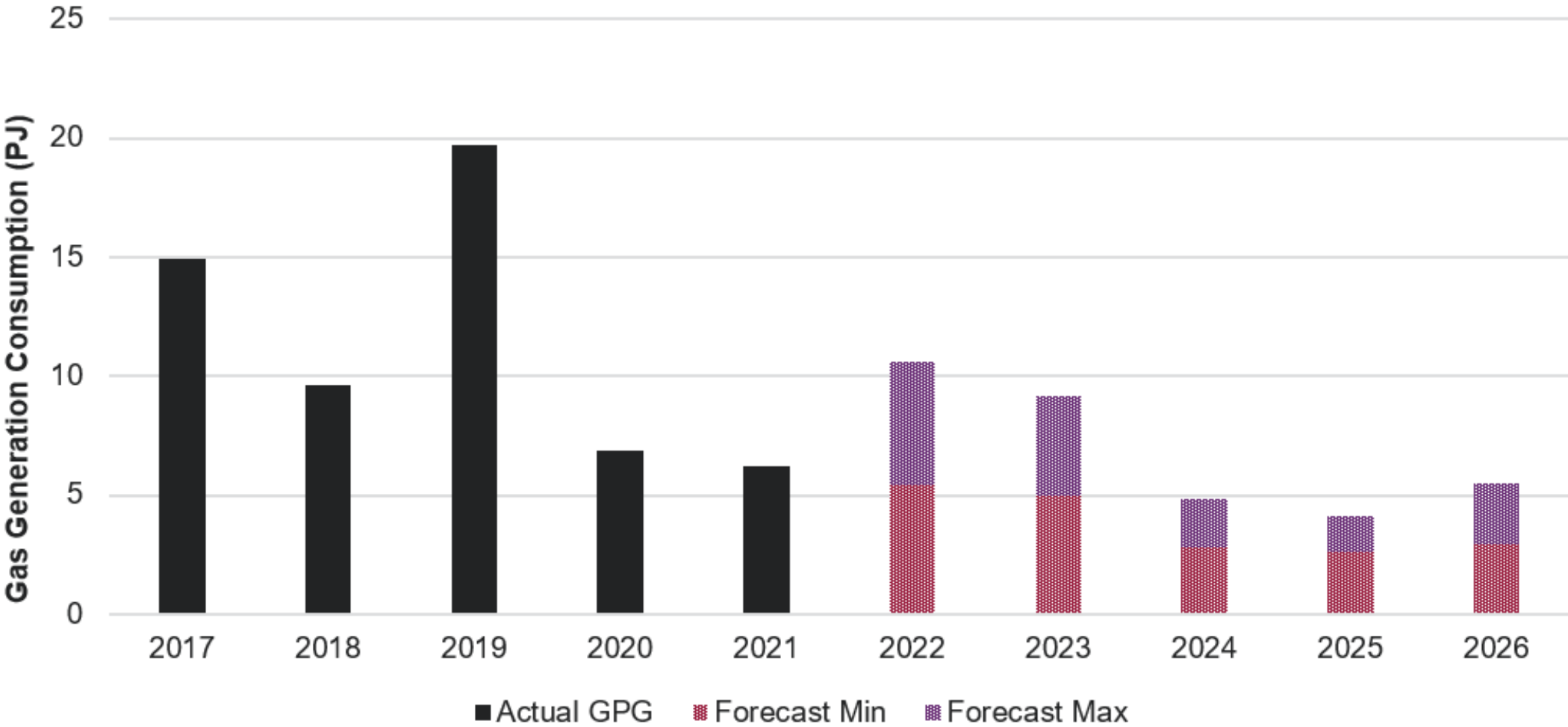
Progressive Change

Representing a future that delivers action towards net zero emissions through technology advancements and **based on current state and federal government environmental and energy policies**

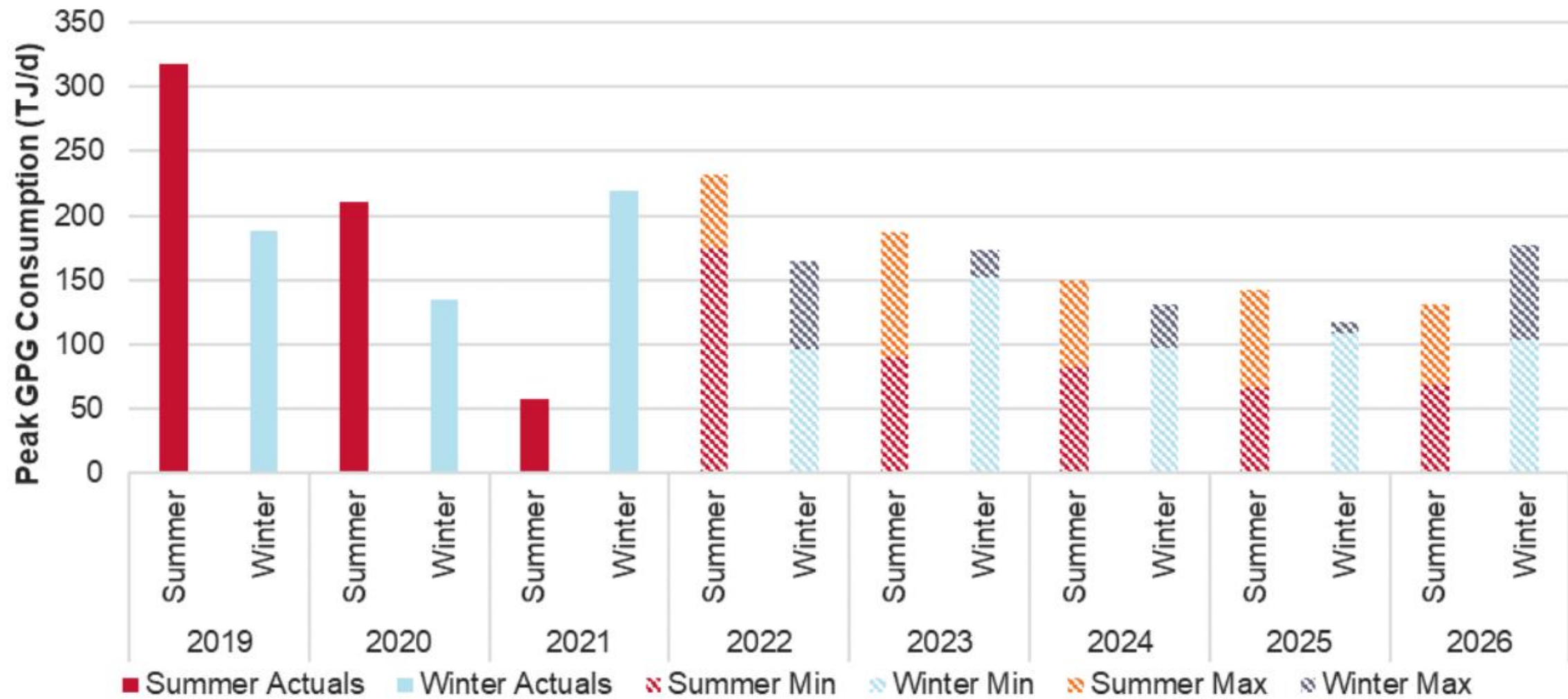
Gas system demand forecasts



Gas generation forecasts – annual



Gas generation forecasts – peak



Supply adequacy



Changes to south-eastern supply

More supply in Vic and NSW

- Victorian and NSW producers reported more committed and anticipated supply from 2023
- Additional supply mostly in Gippsland

Port Kembla Energy Terminal anticipated for winter 2024

- In 2021 GSOO and VGPR considered committed from 2023
- Ukraine invasion has changed world LNG dynamic and created FSRU pressures

Golden Beach anticipated from 2024

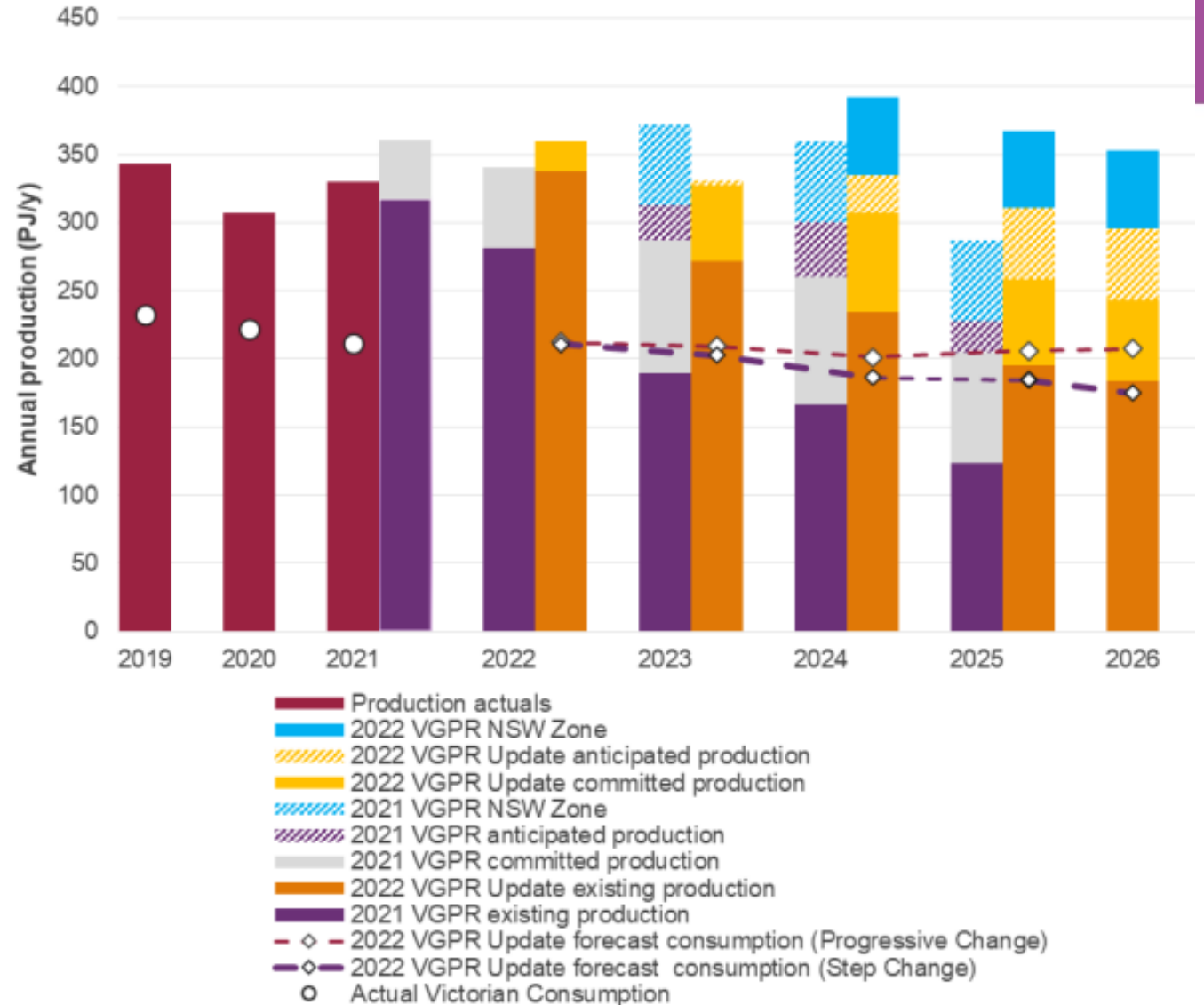
- In 2021 GSOO and VGPR, was considered anticipated from 2023

APA East Coast Grid Expansion

- Expansion of MSP and SWQP increases pipeline capacity from Queensland to Southern States

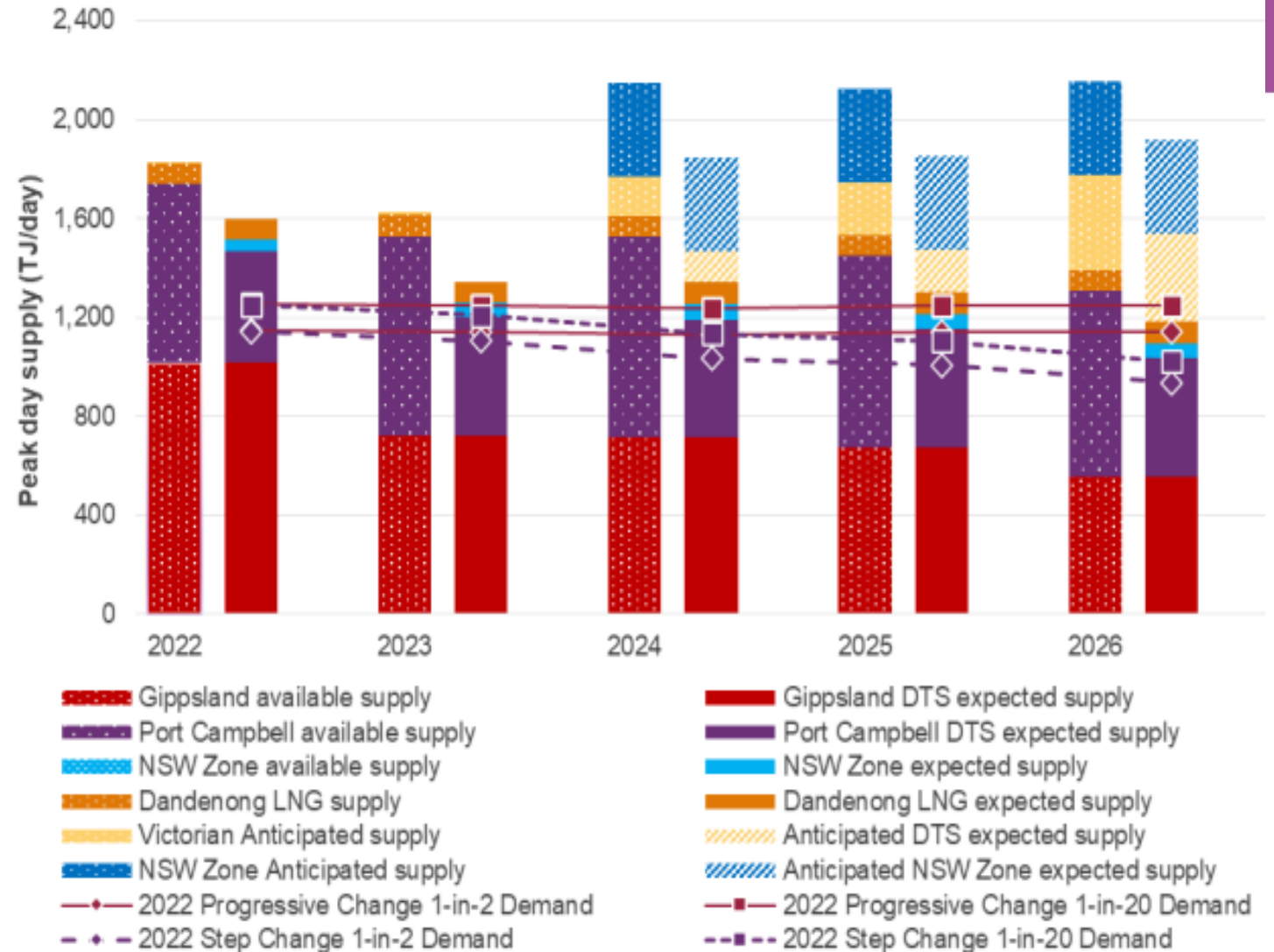
Victorian gas production forecasts

- Victorian production forecasts are higher than in the 2021 VGPR / GSOO
 - Gippsland production reducing from 312 PJ in 2022 to 200 PJ in 2026
 - Large reduction in Longford production from winter 2023
 - Port Campbell increasing 33 PJ in 2021 to 48 PJ in 2022, increases again to 69 PJ in 2023, falling to 42 PJ in 2026



Victorian supply capacity forecasts

- Gippsland supply reduces from 1,018 TJ/d in 2022 to 558 TJ/d in 2026
- Port Campbell supply (includes Iona UGS) increase from 719 TJ/d in 2022 to 803 TJ/d in 2023, then decrease to 725 TJ/d in 2026
- Tight supply-demand balance in 2023 – **unlikely to be capacity to support gas generation on a peak day**
- No anticipated supply options prior to winter 2023
- Balance tight in 2024-25, and development of anticipated supply needed to avert peak day shortfalls in 2026 under *Progressive Change*



Resilience risks

Resilience risks

Retirement of Longford inlet section of Gas Plant 1 at the end of 2021

- If one of the two remaining inlet systems are unavailable, production capacity reduces to 500-650 TJ/d
- Historically high uptime performance

Longford ethane constraint in winter 2022

- Periods of reduced ethane offtake by customers reduces Longford natural gas processing capability

Legacy gas field depletion

- Reduced ability for Longford to cover for other outages in their production system

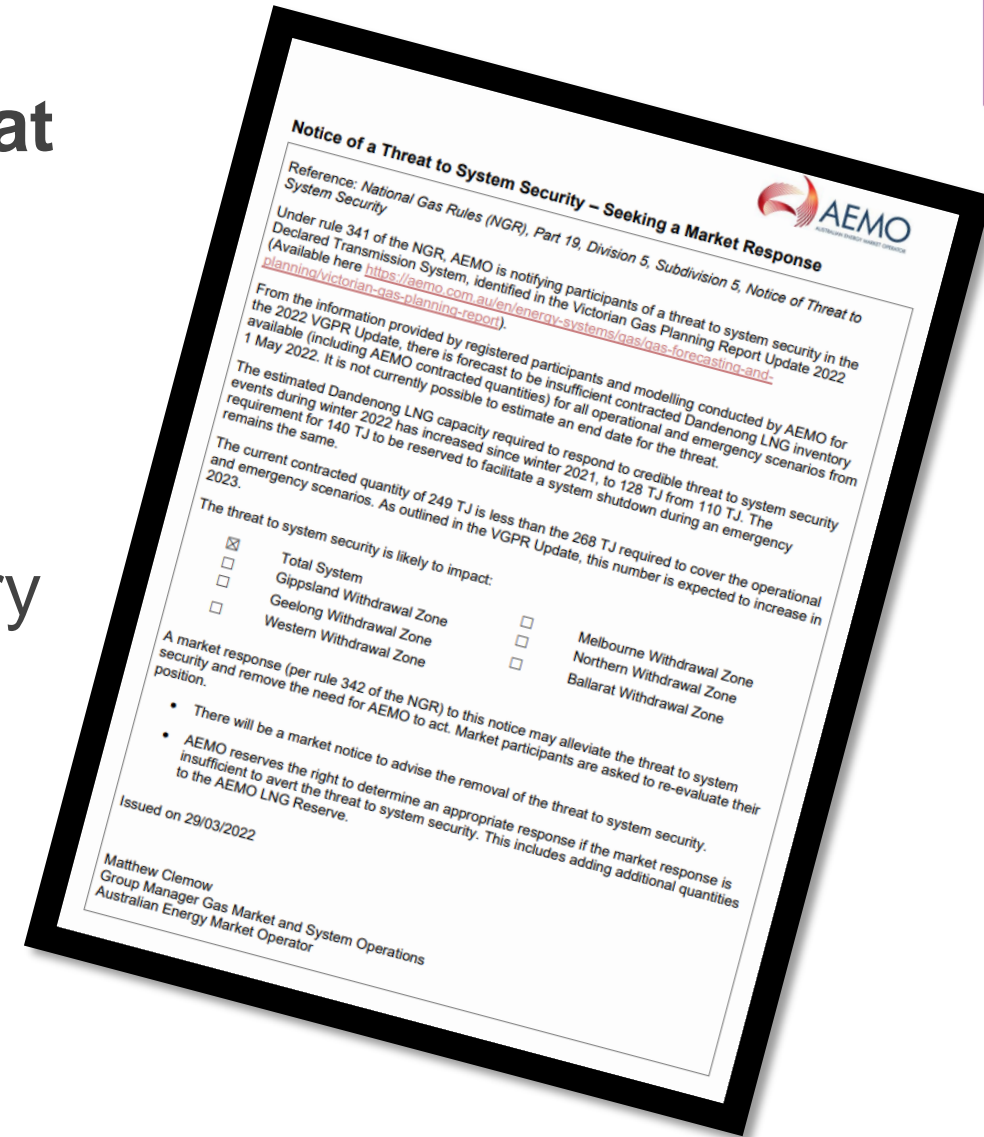
Full Longford plant outages

- One day outage required as early as Q4 2023
- A month-long outage in late 2025

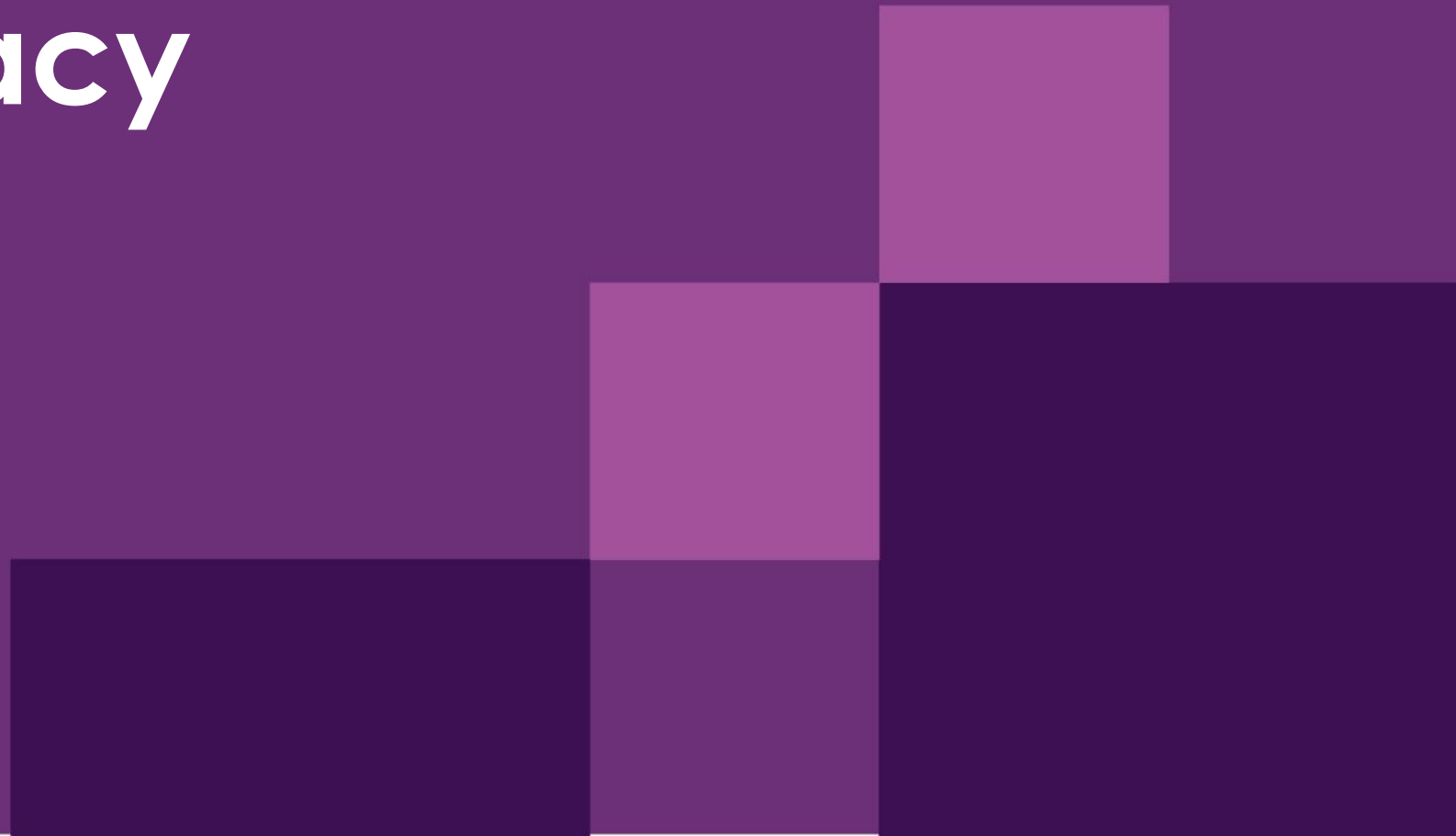
Dandenong LNG inventory

Victorian Threat to System Security

- AEMO has issued a notice of a **Threat to System Security** to market participants regarding low contracted Dandenong LNG and is seeking a market response
- Insufficient Dandenong LNG inventory increases the probability of gas load curtailment, including gas-fired generation

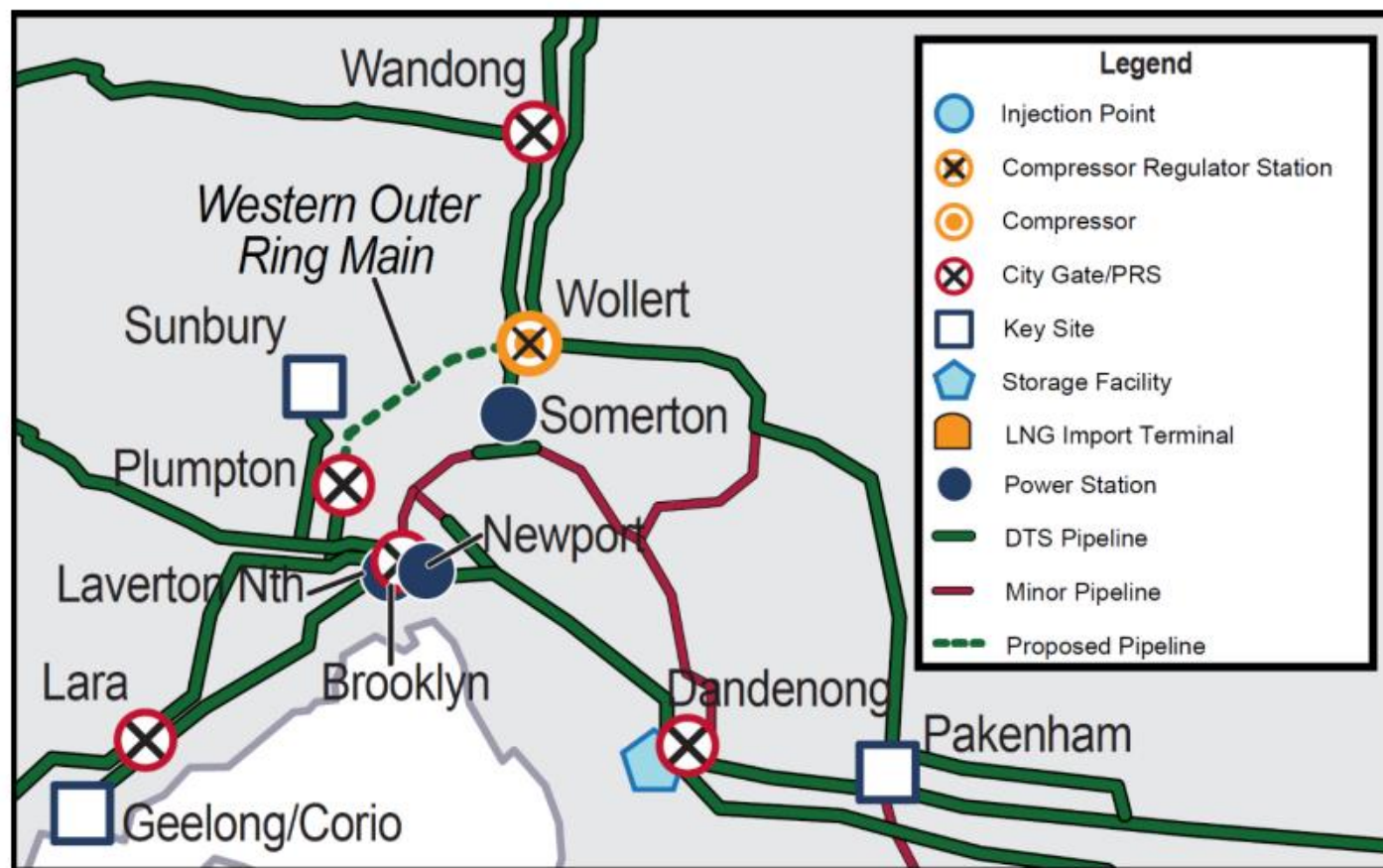


DTS adequacy



WORM

- 51km of new pipeline Plumpton to Wollert
 - Connects SWP to VNI
 - Connects SWP to LMP
- New compressor unit at Wollert
- New PRS allowing flow from WORM into eastern Outer Ring Main

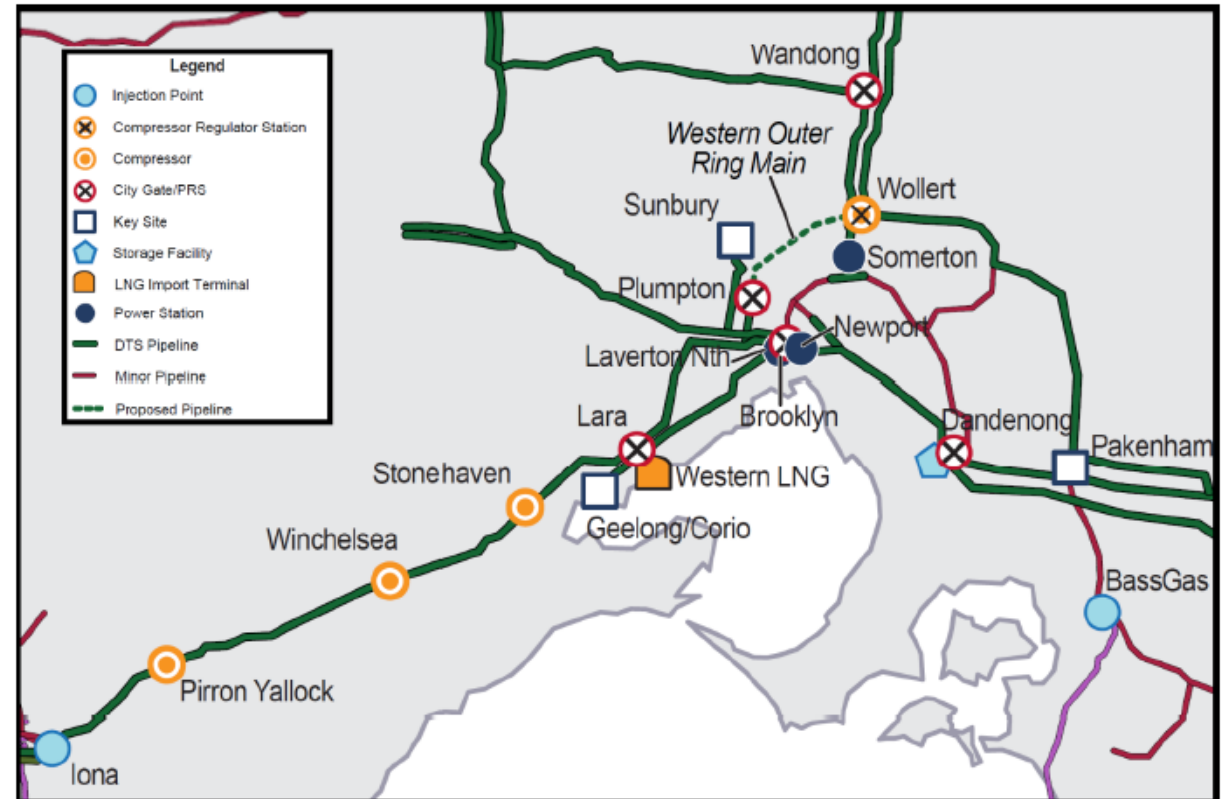


WORM

- Increases SWP injection and withdrawal capacity
- Increases DTS supply capacity, reliability and security
- Provides more supply flexibility by reducing dependence on Longford CPP injections
- Improved DTS operability by increasing linepack and ability to transfer linepack between major pipelines
- Capacity for future growth in Melbourne's outer suburbs or facilitate new gas generation connection opportunities

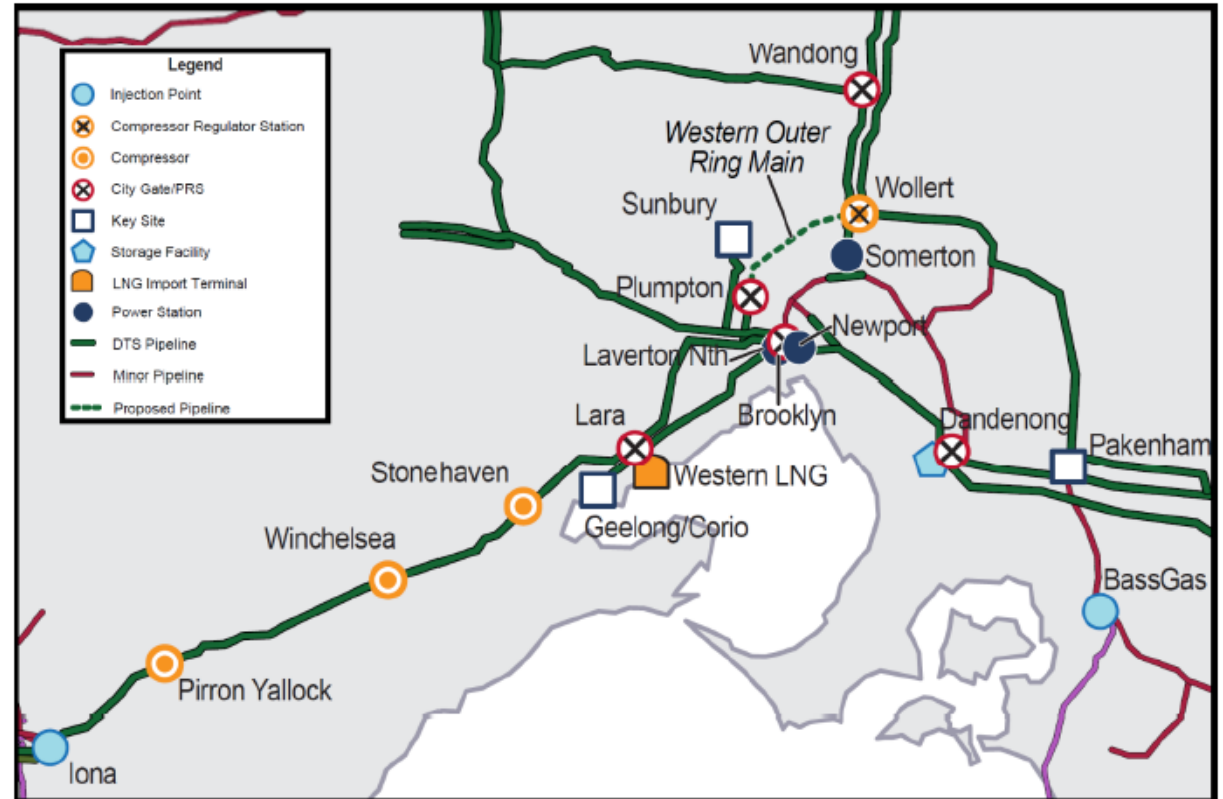
Additional SWP expansion

- Single compressor option
 - Additional unit at Winchelsea CS
 - Increases SWP injection capacity by 52 TJ/d to 528 TJ/d
 - APA announced FID for this
- Multiple compressor option
 - APA requested funding to add compressors at Pirron Yallock and Stonehaven
 - Increases SWP injection capacity by 94 TJ/d to 570 TJ/d
- Further expansion
 - Hydrogen-ready looping of SWP
 - Upgrades of BCP CG and BLP CG



Western LNG import terminal

- Viva at Geelong or Vopak offshore at Avalon has same impact to DTS adequacy
- Increases SWP injection capacity significantly (with the WORM completed)
- If LNG injections are maximised, Iona CPP injections are backed off due to high supply pressure and proximity to Melbourne
- Options to reduce Iona CPP capacity back-off:
 - Upgrades of BCP CG and BLP CG
 - Looping of BLP
 - Compression between Lara and Wollert





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