

2022 VGPR Update



Key themes

Production
decline

Reducing
resilience

Delay in new
supply

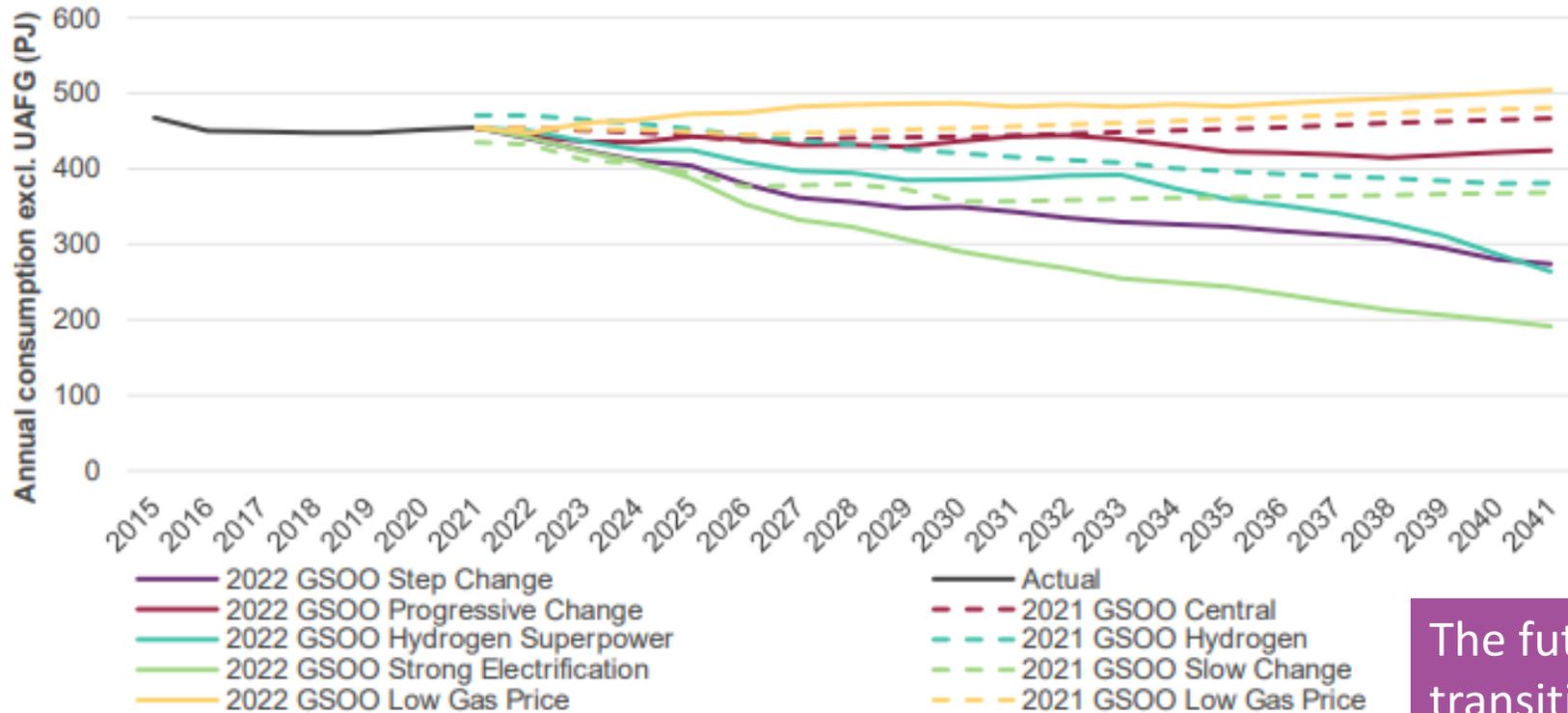
Tight supply
balance

Demand
uncertain in
long term

Demand forecasts



Domestic consumption outlook (excluding gas generation)



↑ Slower rate of transition

↓ Faster transformation towards net zero emissions

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

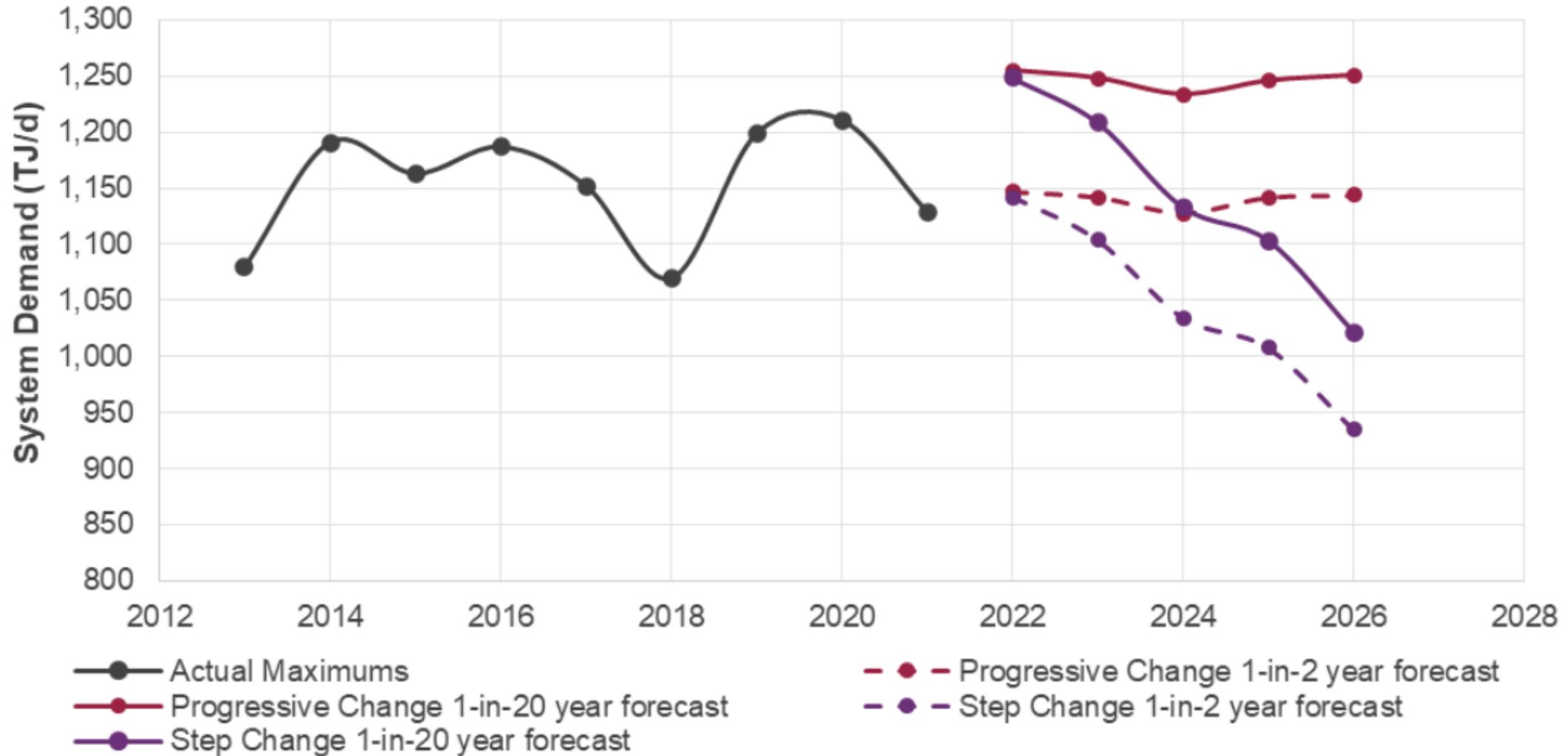
Step Change

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**

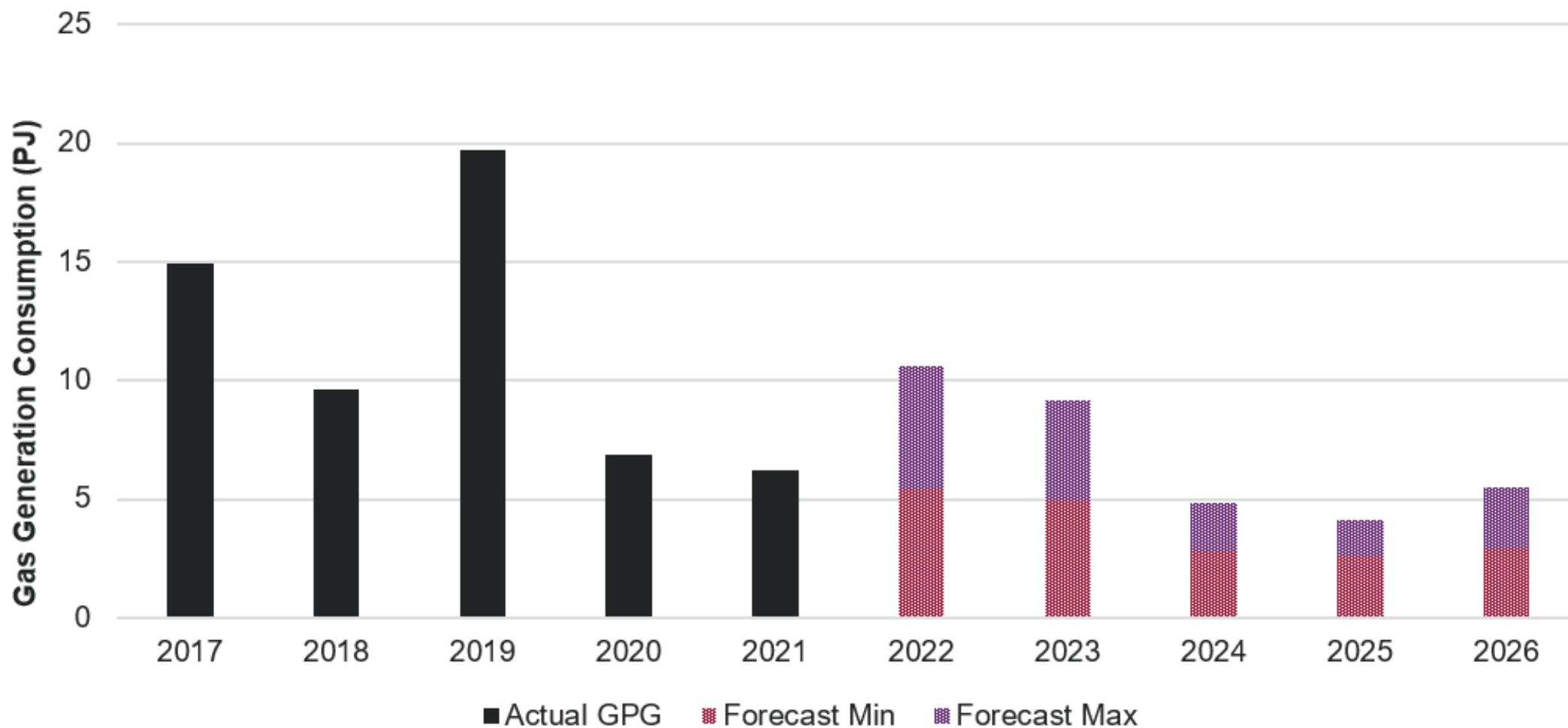
Progressive Change

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**

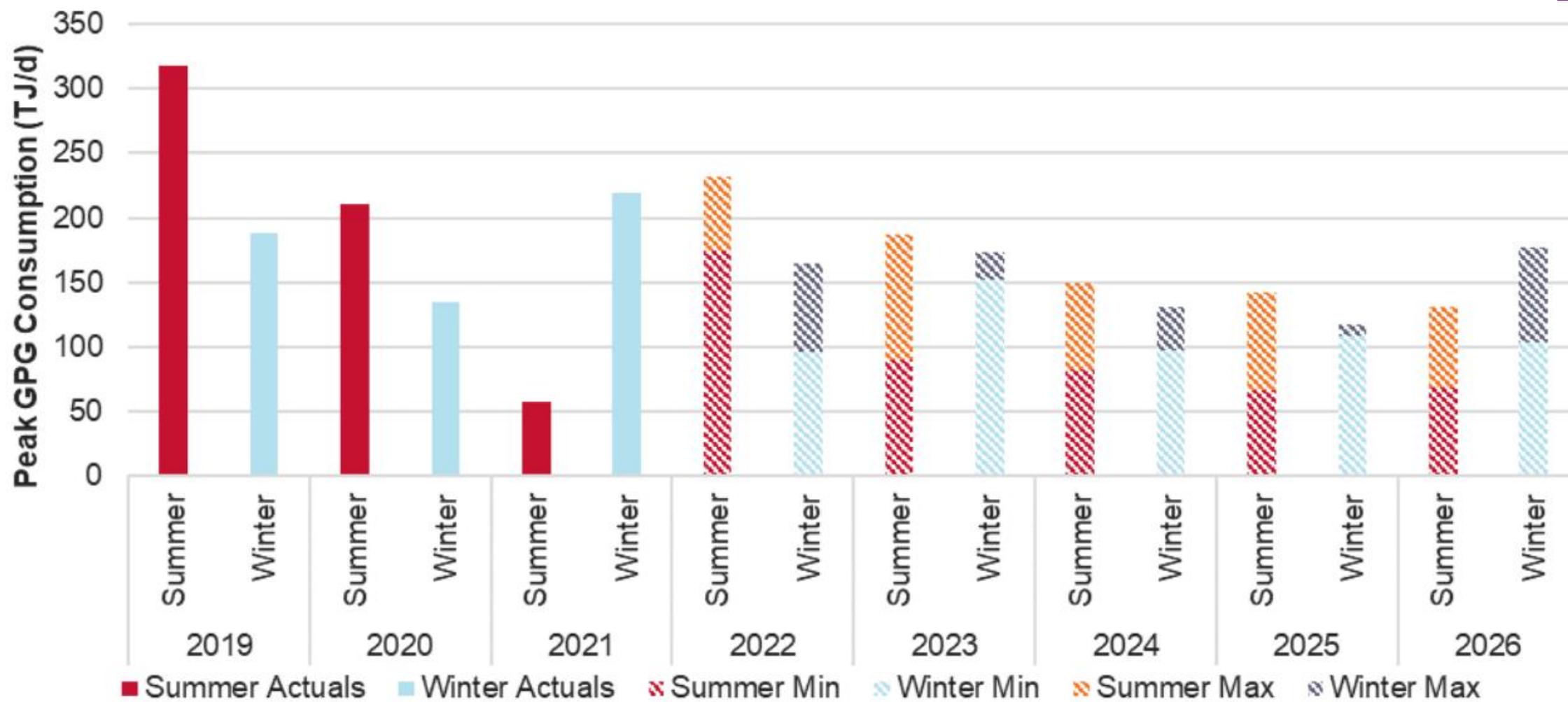
Gas system demand forecasts



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

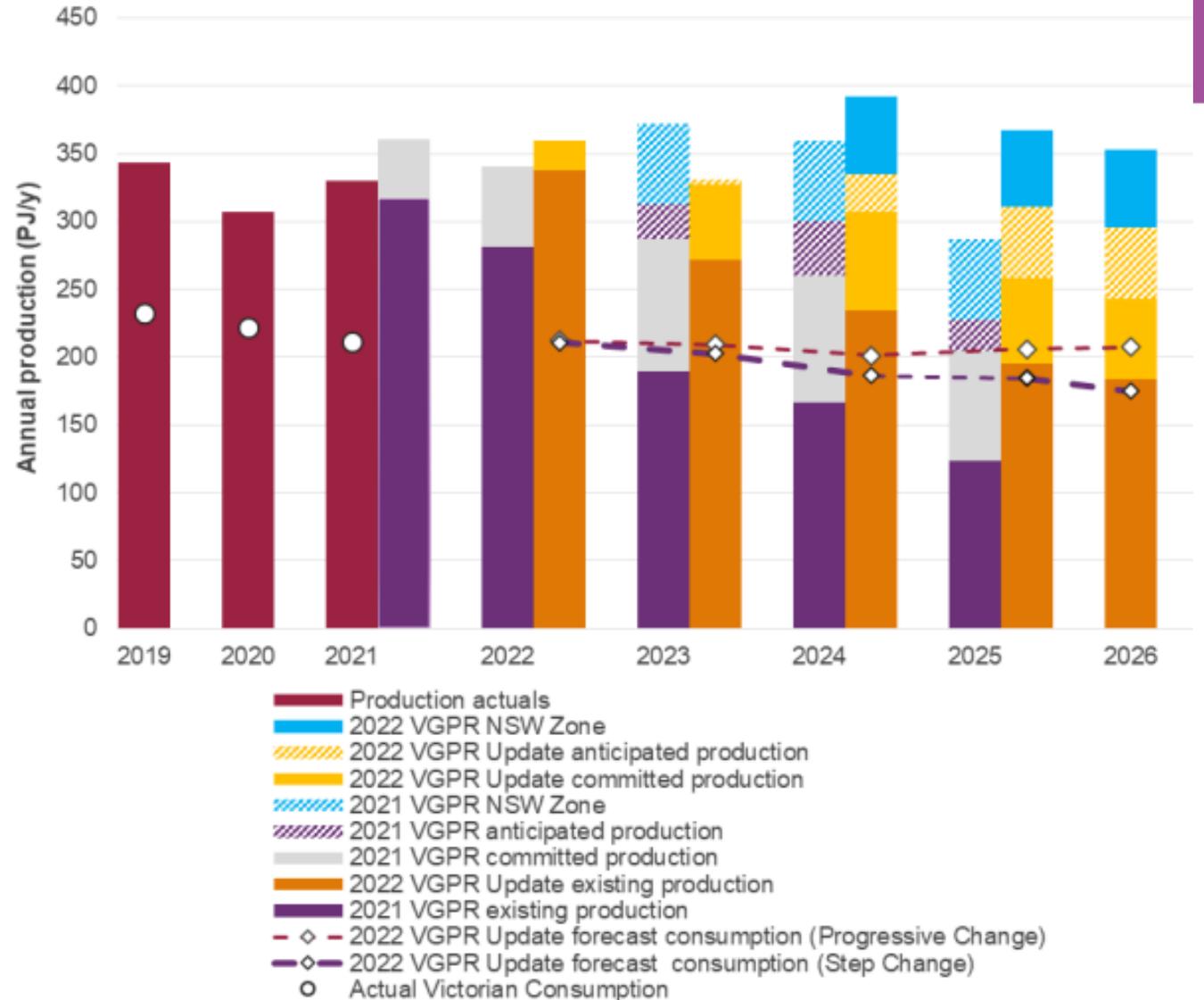
- In 2021 GSOO and VGPR, was considered anticipated from 2023

APA East Coast Grid Expansion

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

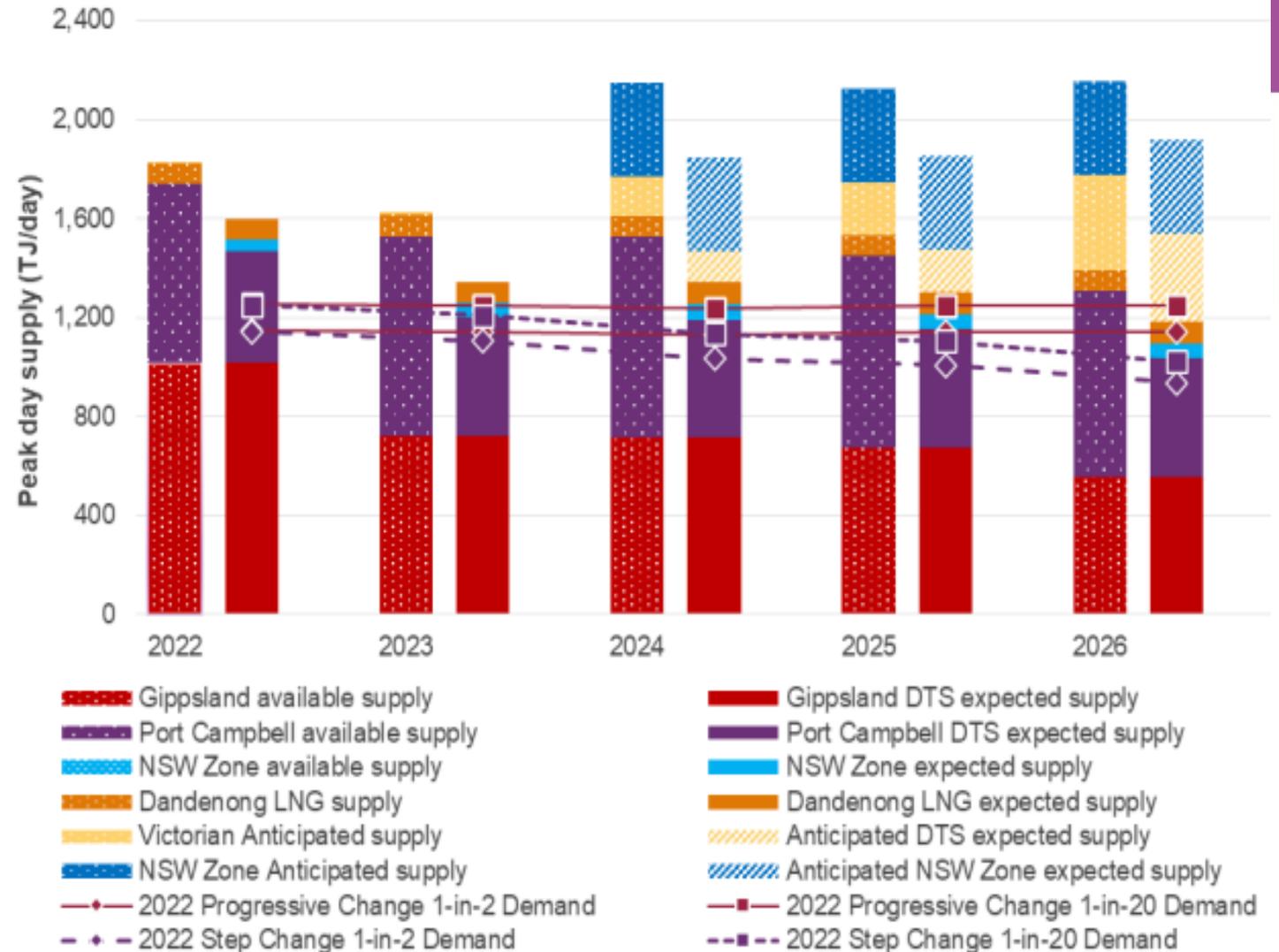
Victorian gas production forecasts

- 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

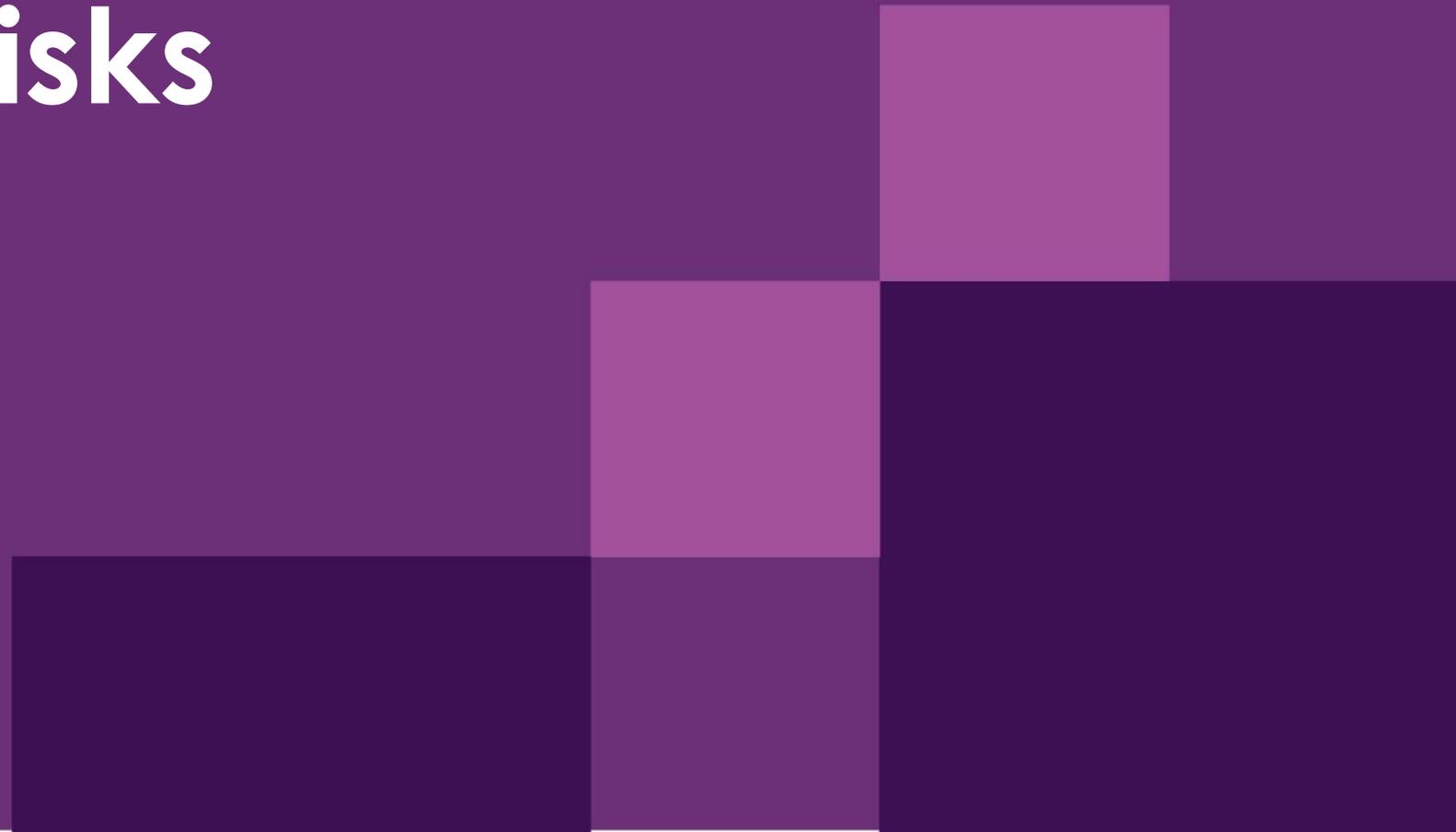


Victorian supply capacity forecasts

- 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

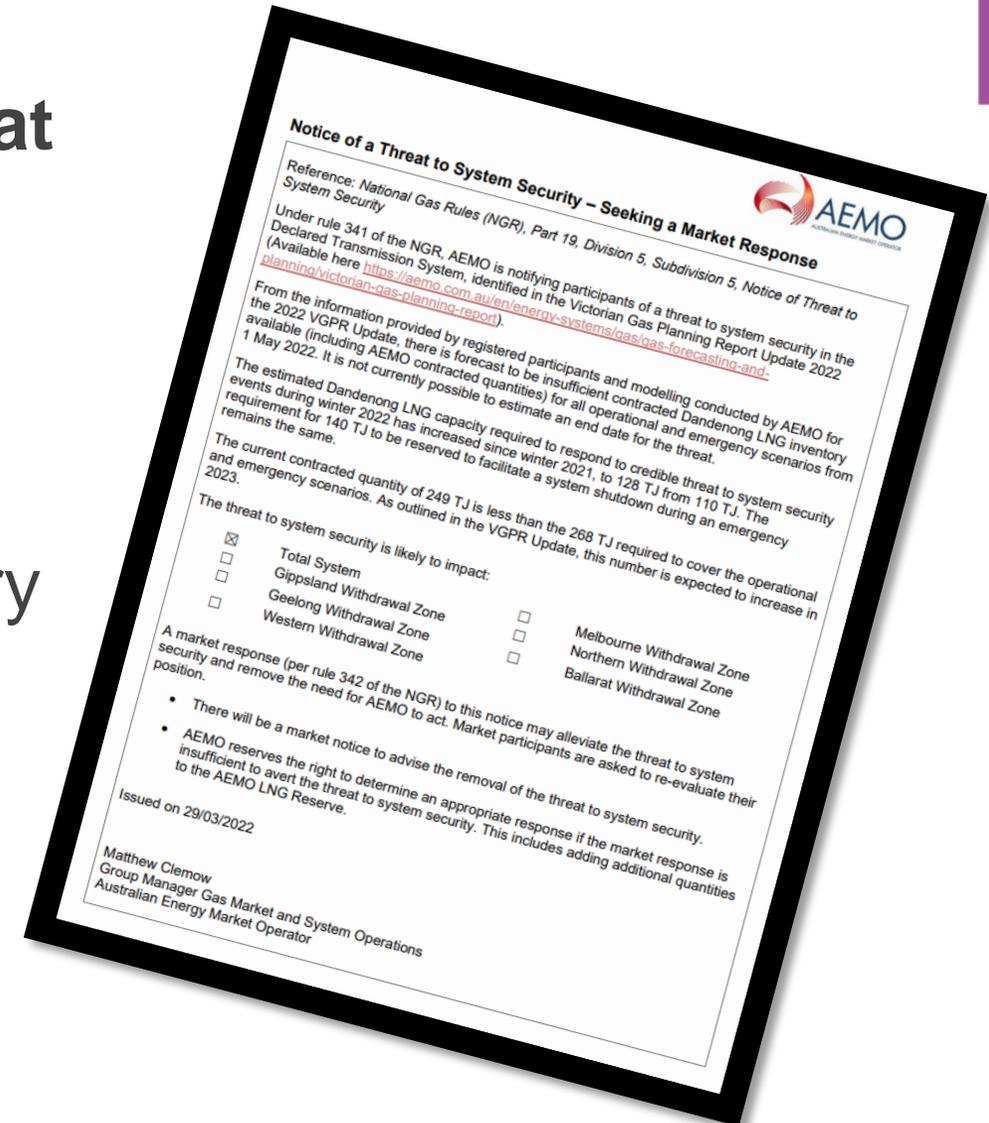
Full Longford plant outages

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

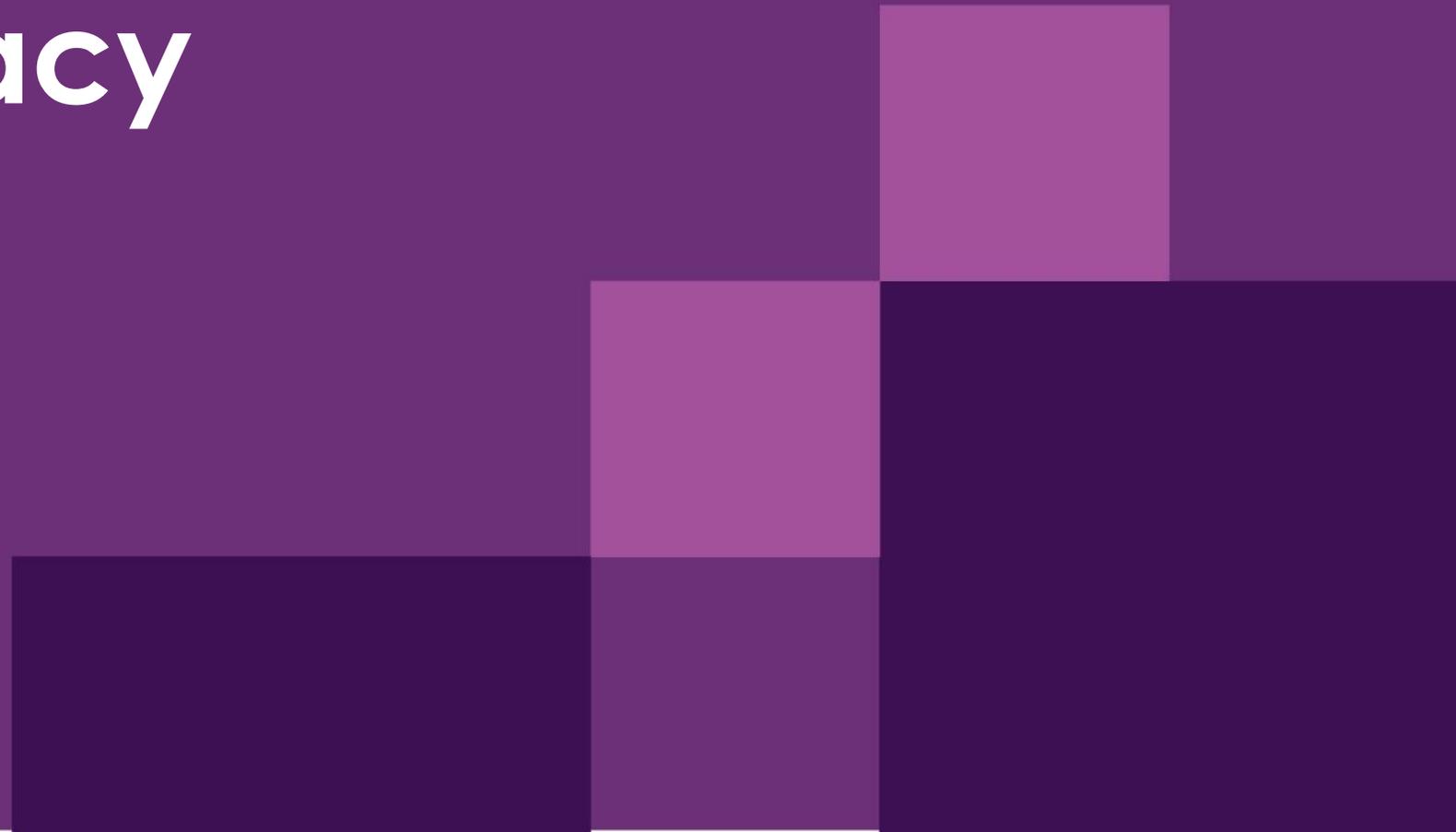
Dandenong LNG inventory

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

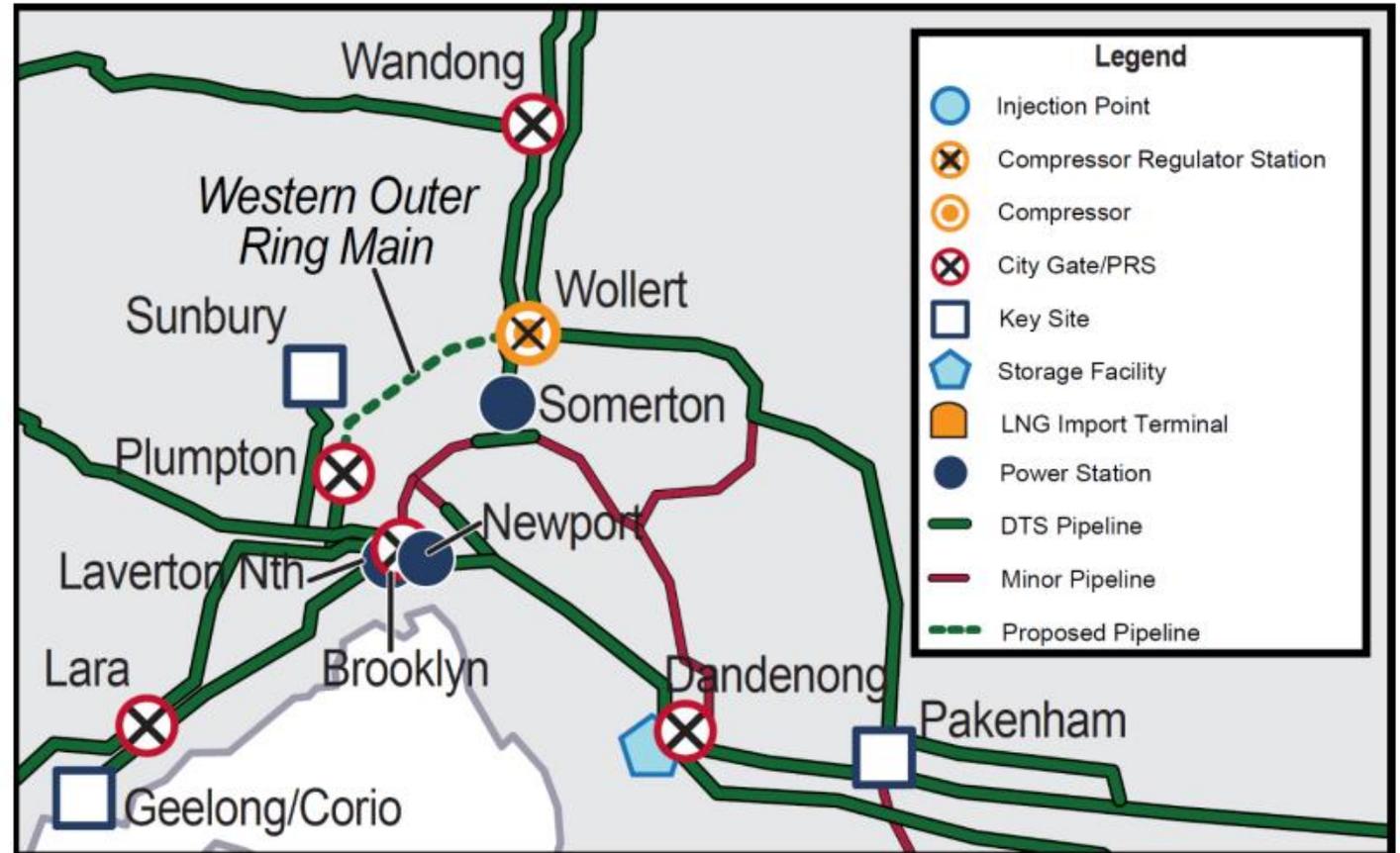


DTS adequacy



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

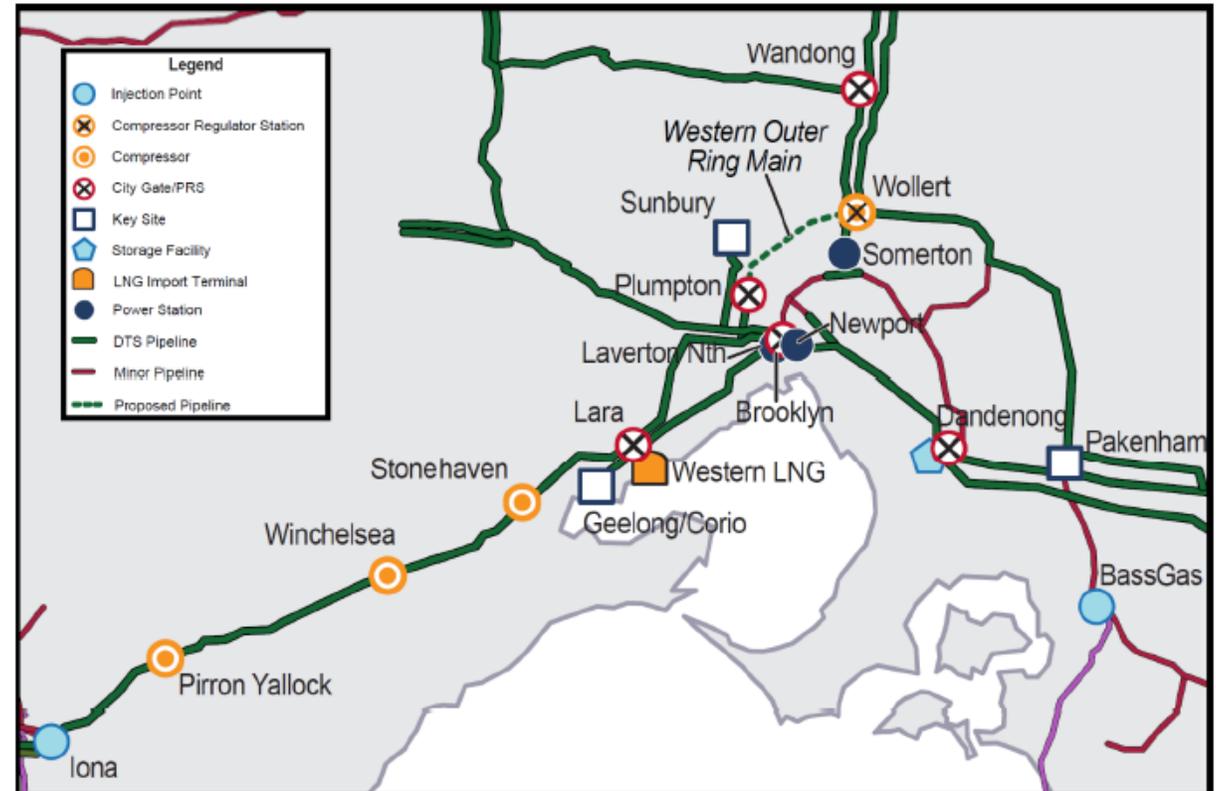


WORM

- 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

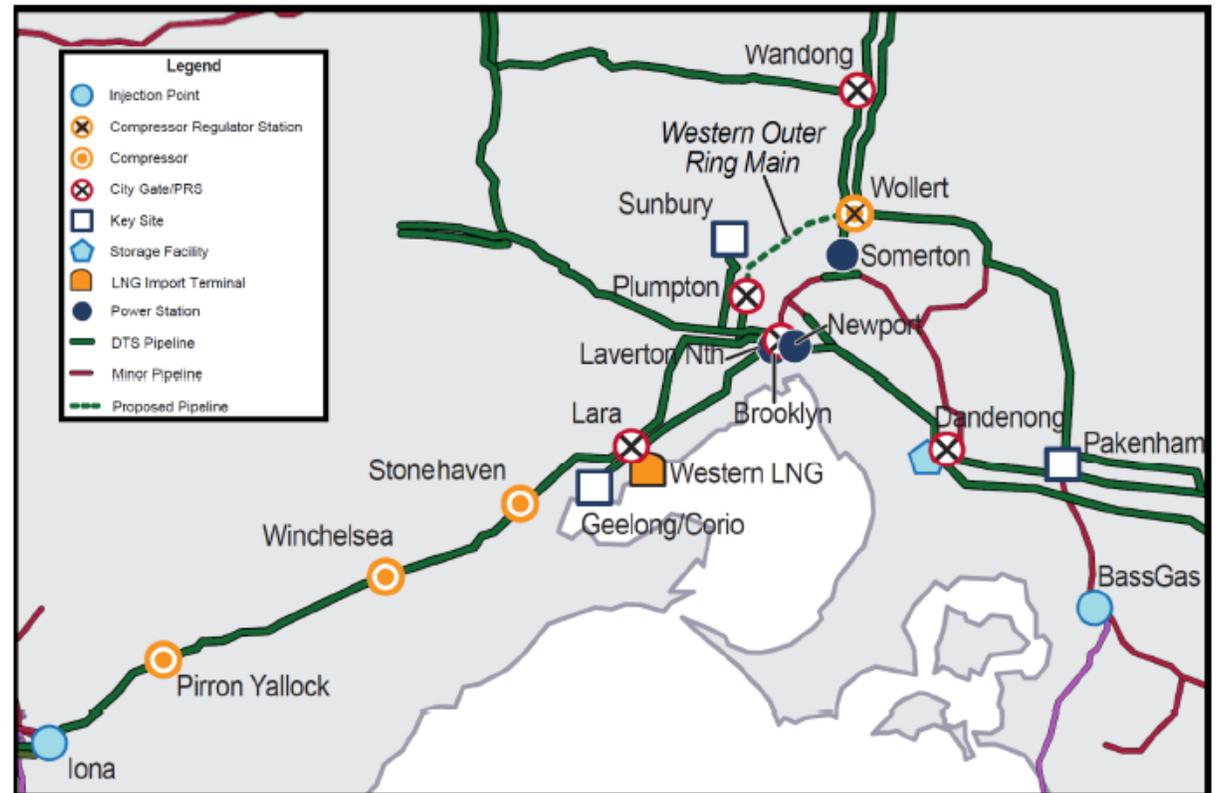
Additional SWP expansion

- 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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