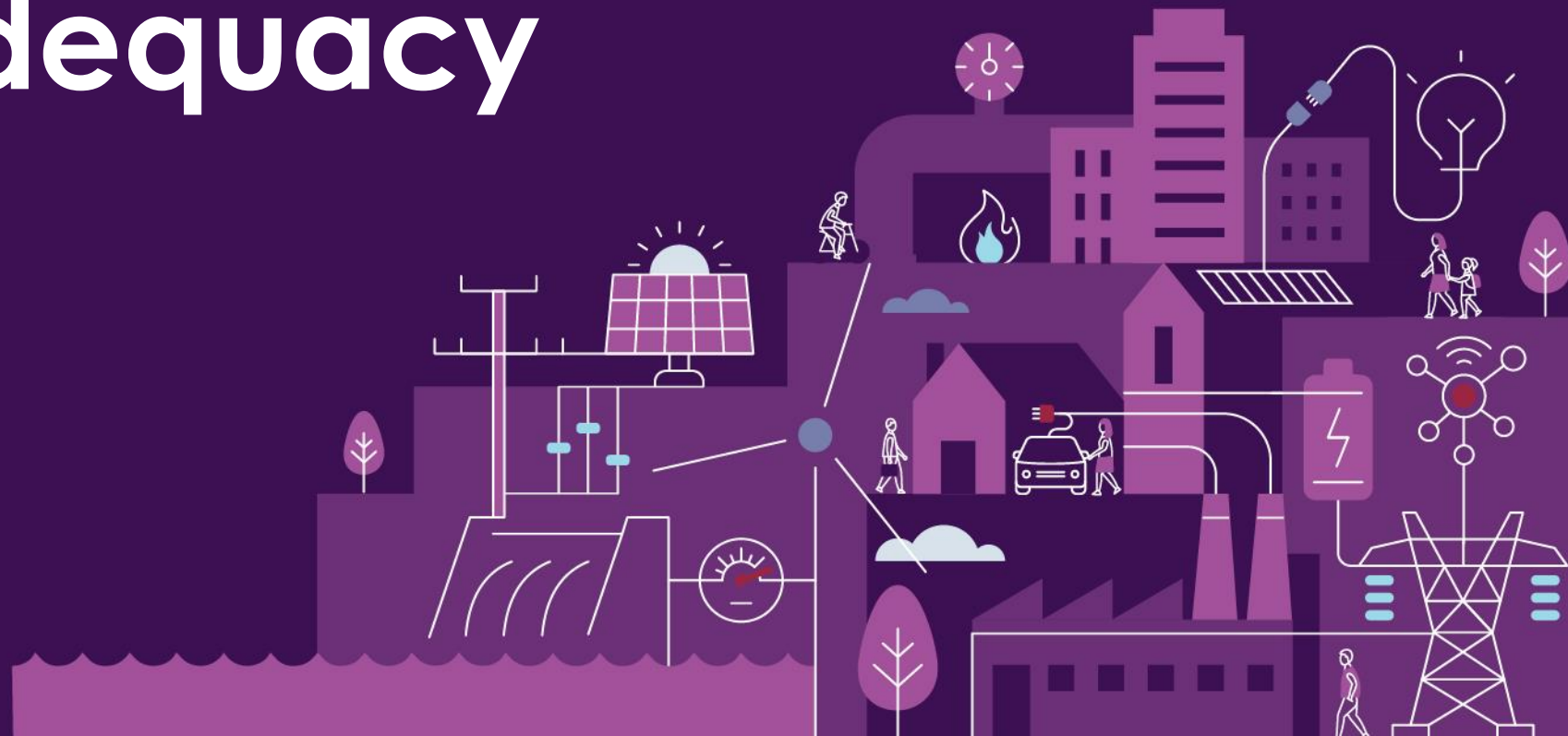


Supply adequacy



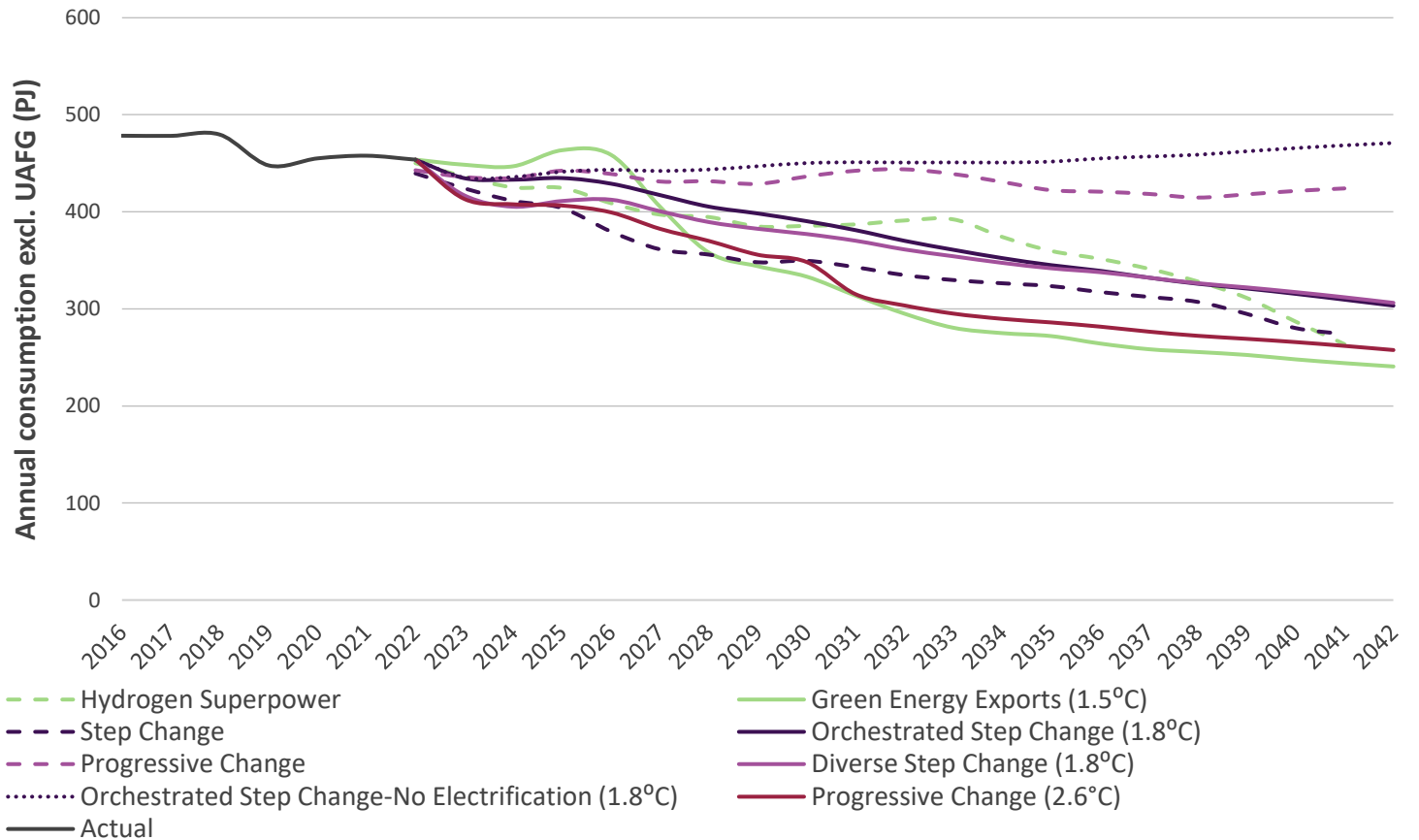
Agenda

1. Demand forecasts
2. Projects
3. Winter 2023 adequacy
4. Longer term adequacy

Demand forecasts

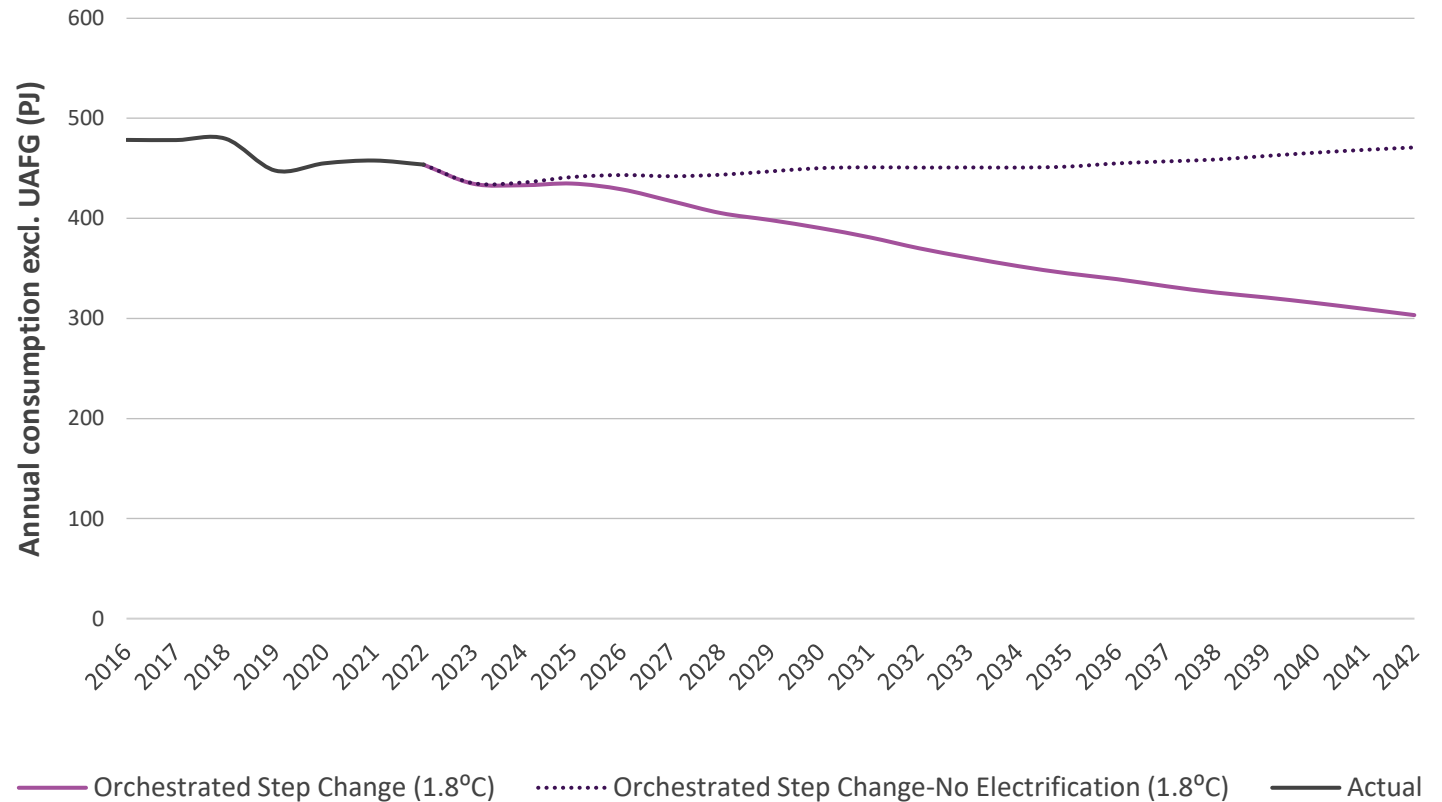
Domestic gas consumption forecast

- AEMO considers a number of future scenarios with varying economic, policy, consumer-driven and technology settings.
- The 2023 GSOO and VGPR focus on the **1.8°C Orchestrated Step Change**.



Domestic gas consumption forecast

- Consumer-driven electrification is the key component in this scenario (for gas).
- Strong policy incentives and industry investment will be required to realise this level of electrification.
- While electrification investments are certain, uncertainty remains over how quickly.

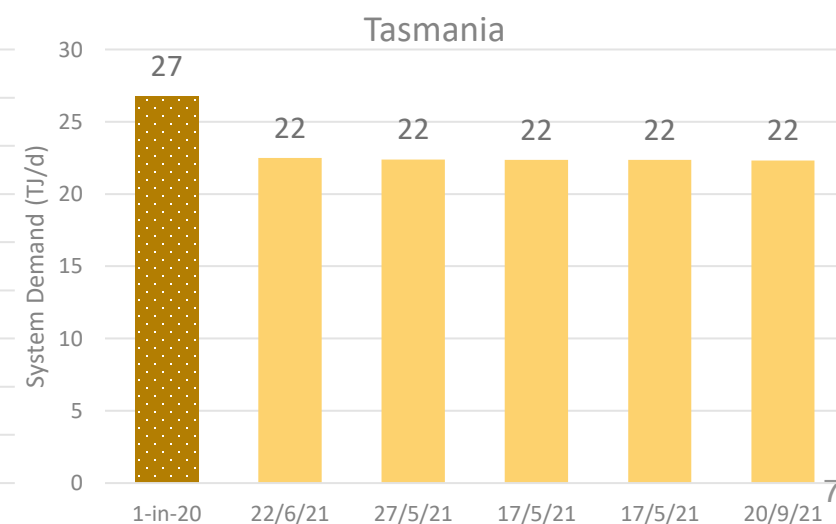
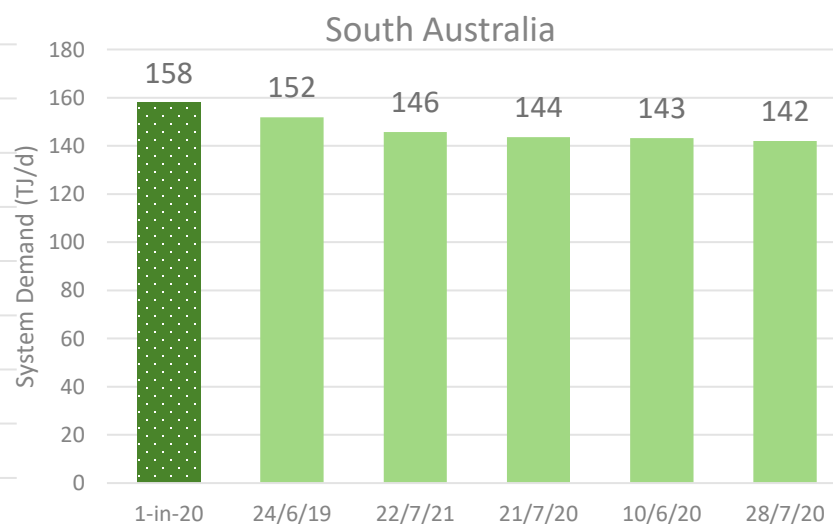
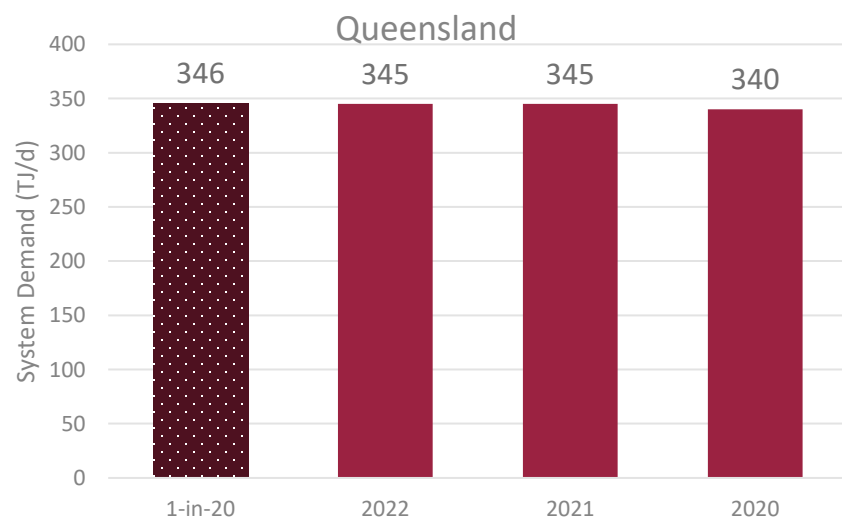
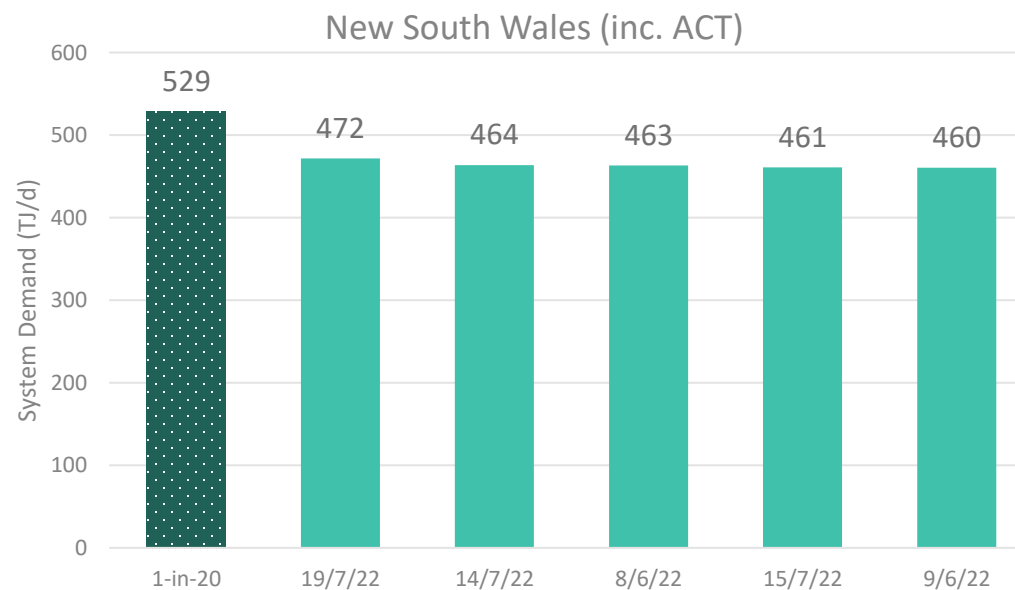
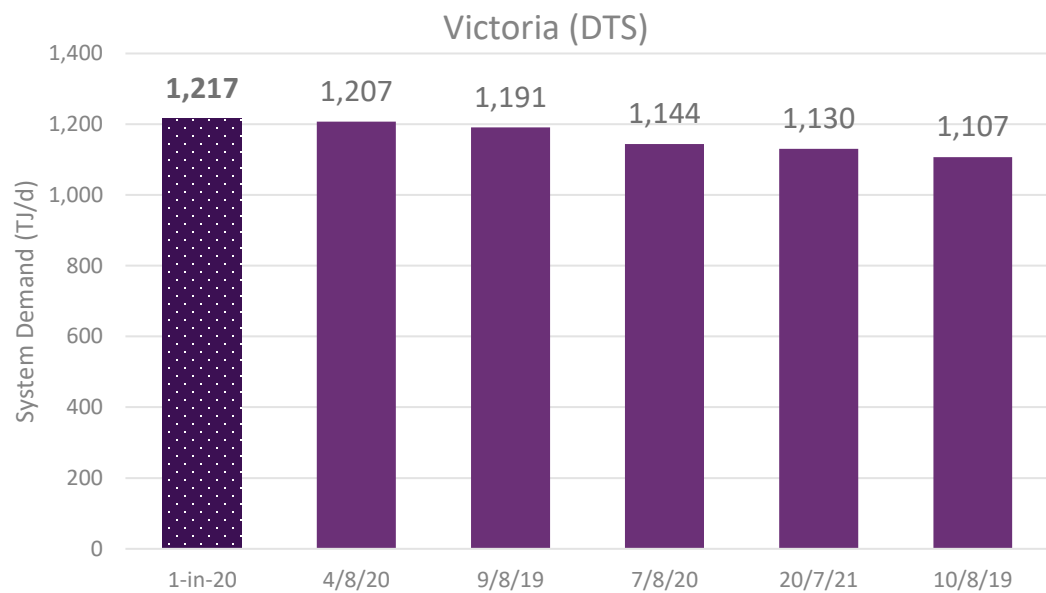


Gas generation forecast

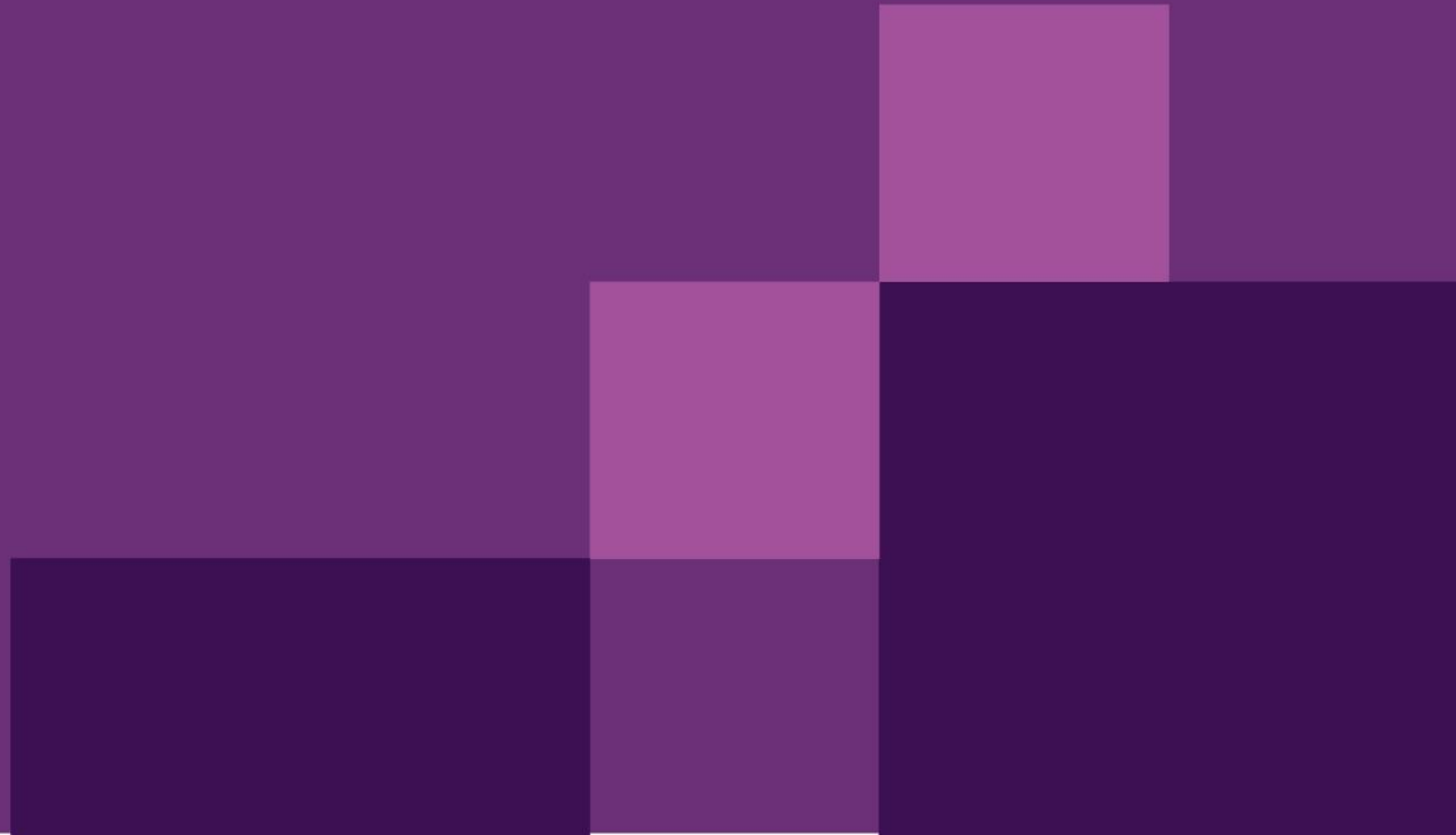
- Despite falling annual consumption, the value of gas generation in firming the NEM remains critical.
- As consumers electrify heating loads, winter gas generation peak demand with increase in magnitude and peakiness.



2023 peak day forecasts



Projects



Winter 2023 projects

Iona Underground Gas Storage (UGS) expansion

Connection of Seamer field increased storage capacity from 23.5 PJ to 24 PJ and injection capacity from 545 TJ/d to 558 TJ/d. Second step from 2024.

Late 2022

Western Outer Ring Main

Western Outer Ring Main (WORM)

51km new pipeline from Wollert to Plumpton, additional compression at Wollert and new path from SWP to LMP.

July 2023

Longford-Melbourne pipeline

Winchelsea Compressor 2

Additional unit at the existing Winchelsea Compressor Station.

June 2023

Thylacine

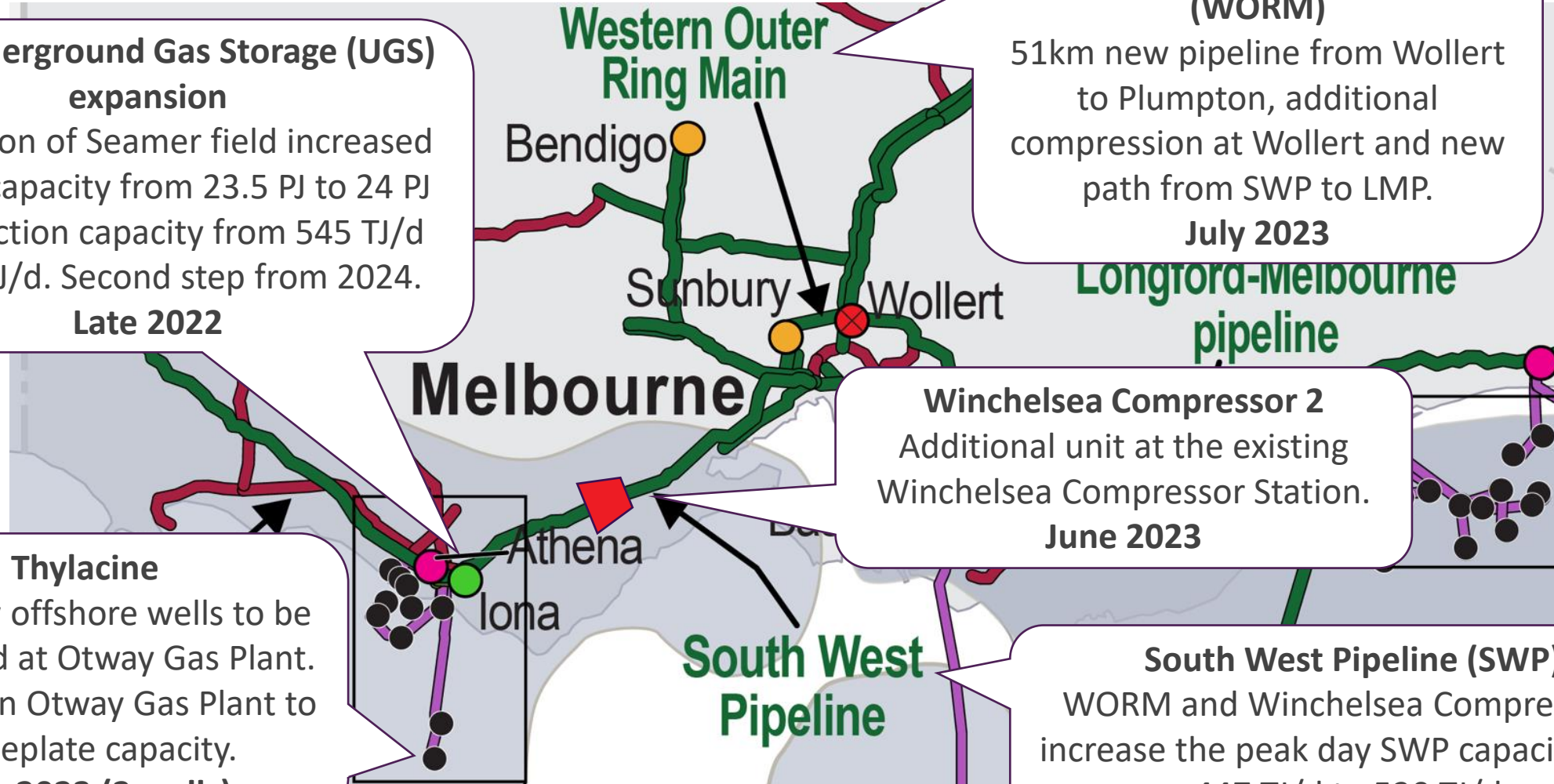
Four new offshore wells to be processed at Otway Gas Plant. Will return Otway Gas Plant to nameplate capacity.

May 2023 (2 wells)

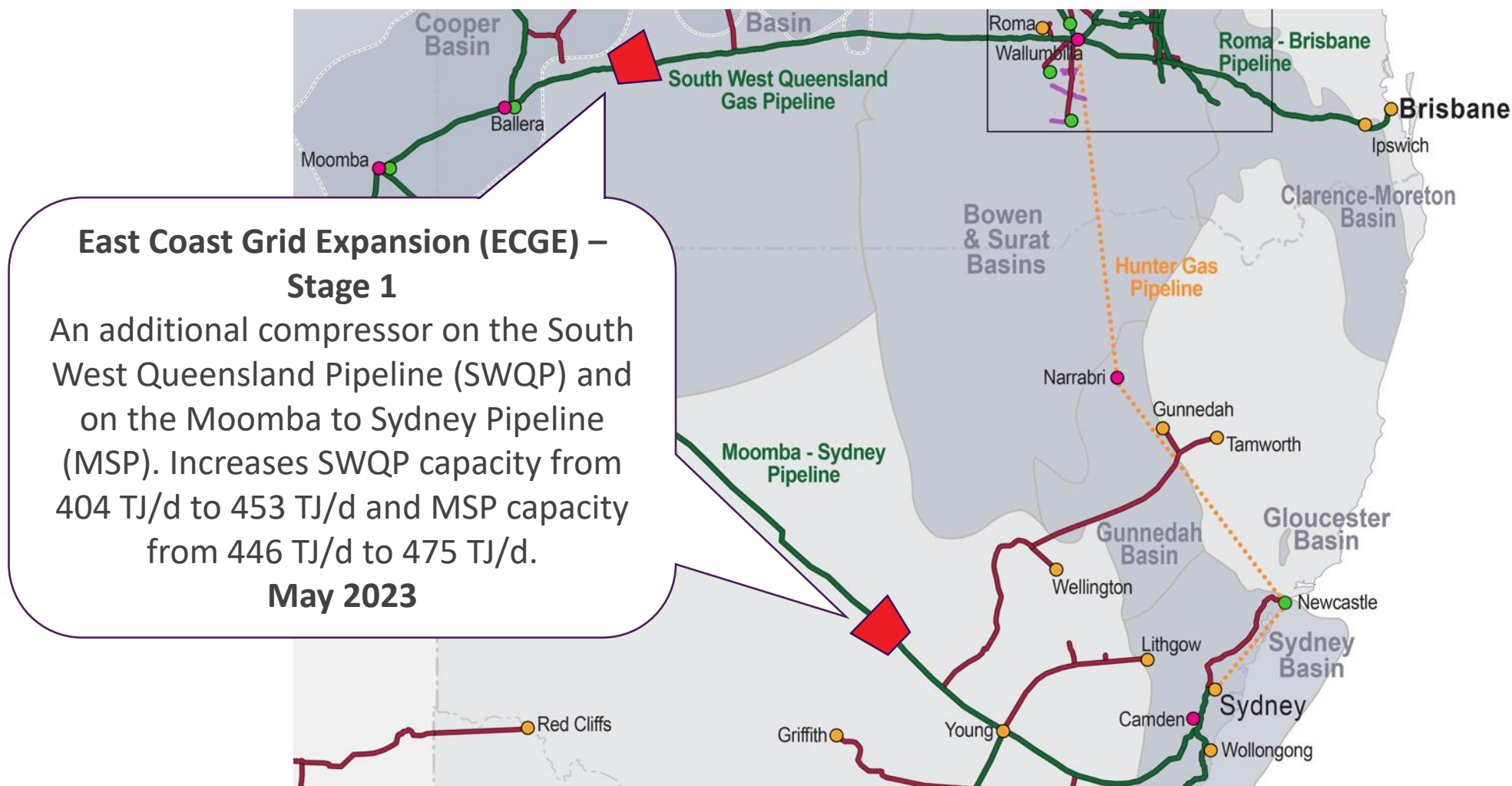
South West Pipeline

South West Pipeline (SWP)

WORM and Winchelsea Compressor 2 increase the peak day SWP capacity from 447 TJ/d to 530 TJ/d.



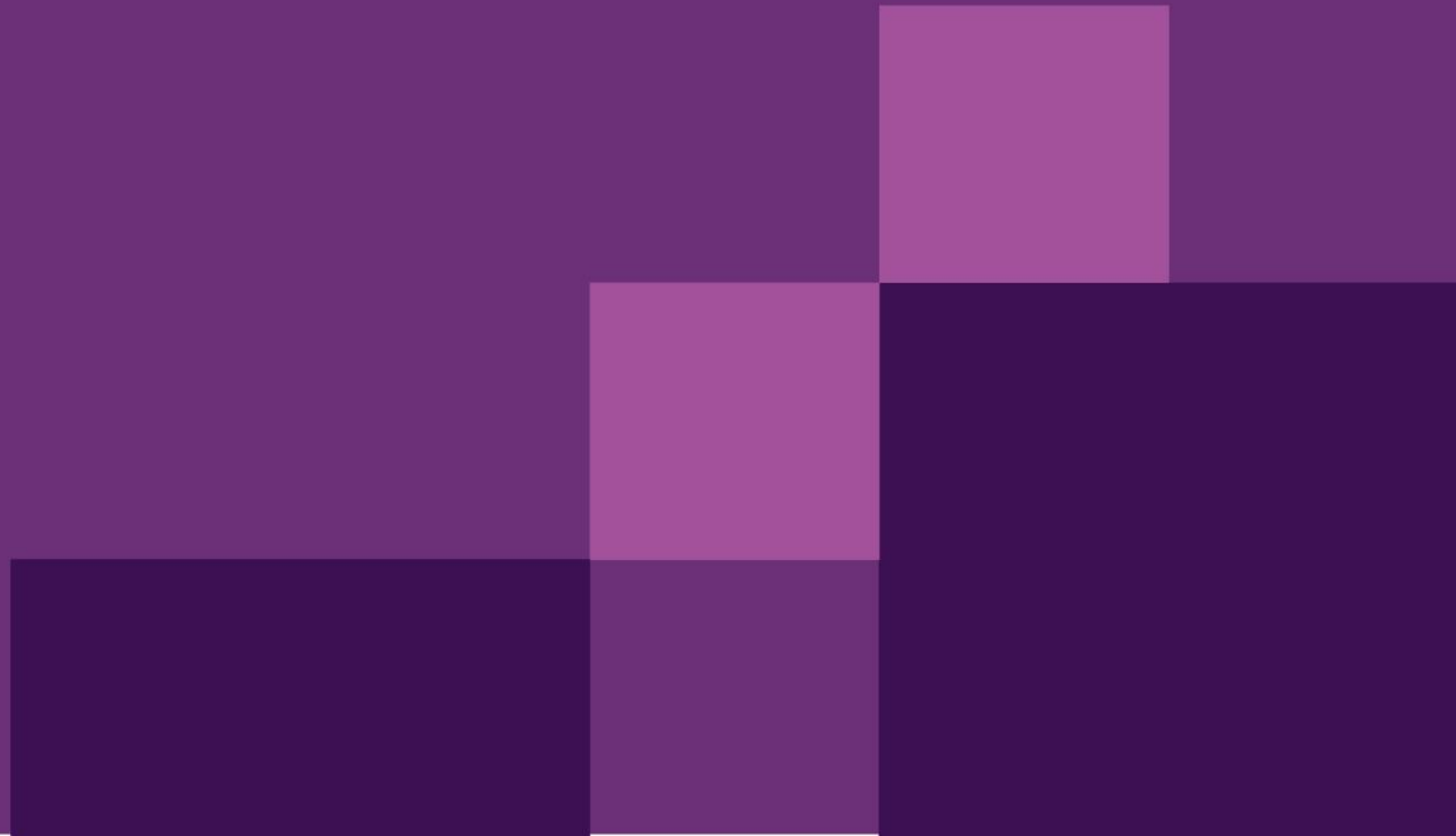
Winter 2023 projects



Longer term project updates

Enterprise	<ul style="list-style-type: none"> • Connection of the nearshore Enterprise-1 well to Otway Gas Plant. • Targeted to come online early 2024, subject to approvals. 	
Kipper projects	<ul style="list-style-type: none"> • Kipper compression expected to commence from early 2024, increasing supply to Longford. • Kipper Stage 1B (one additional well) anticipated to increase supply from 2026. 	
ECGE Stage 2	<ul style="list-style-type: none"> • Additional compressor on each of the SWQP and MSP. • Targeted to come online prior to winter 2024. 	Committed/ Anticipated
Golden Beach	<ul style="list-style-type: none"> • Supply from Golden Beach field for two years then transitioning to storage. • Soon to drill an appraisal well, targeting first gas from 2025. 	Potential/ Uncertain
Port Kembla Energy Terminal	<ul style="list-style-type: none"> • Squadron progressing with wharf, expected 2024, and Jemena with the Eastern Gas Pipeline (EGP) connection, expected by the end of 2023. Supply may not commence until 2026. 	
Victorian LNG import terminals	<ul style="list-style-type: none"> • Viva Energy Gas Terminal Project requested supplementary information ahead of an EES decision. • Vopak Victoria LNG submitted a referral to the Minister for Planning to determine if an EES is required. 	

Winter 2023 adequacy



Production outlook

Gippsland and Bass Basin (Longford, Orbost, Lang Lang)

- Winter 2023 supply: 915 TJ/d.
- Increased from the 2022 GSOO/VGPR production forecast by 191 TJ/d from 724 TJ/d.
- Reduced supply in 2023 due to Gippsland basin legacy field decline. Peak production in 2022 was 1,126 TJ/d.

Otway Basin (Otway, Athena, Iona UGS)

- Winter 2023 supply: 730 TJ/d.
- Increased supply for 2023 from the new Thylacine wells and Iona UGS expansion.
- Not all accessible to DTS due to SWP capacity of 530 TJ/d.

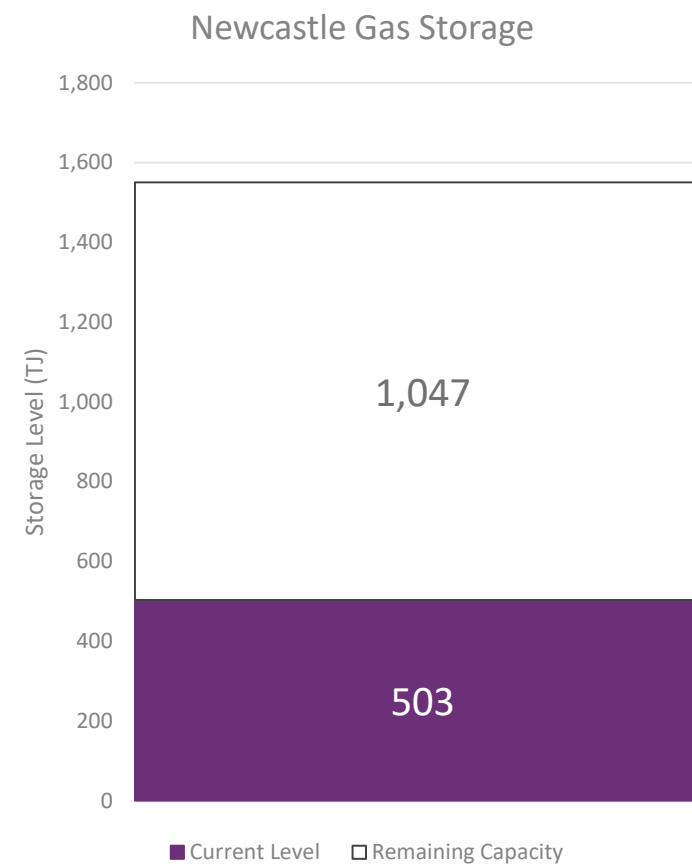
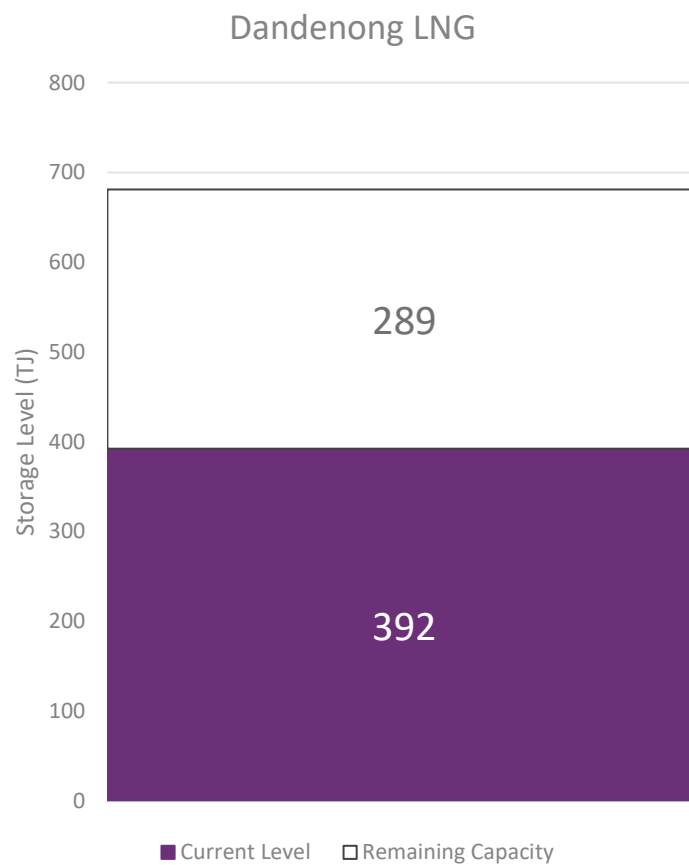
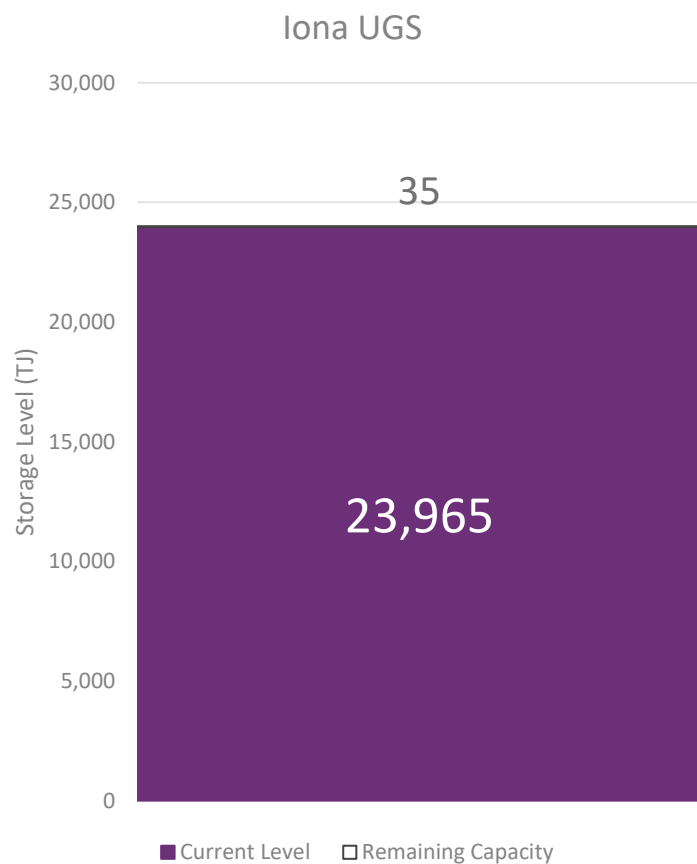
Cooper Eromanga Basin (Moomba)

- Based on Gas Bulletin Board rates and outlook, winter 2023 supply: 210-250 TJ/d.

Northern (Queensland, Northern Territory)

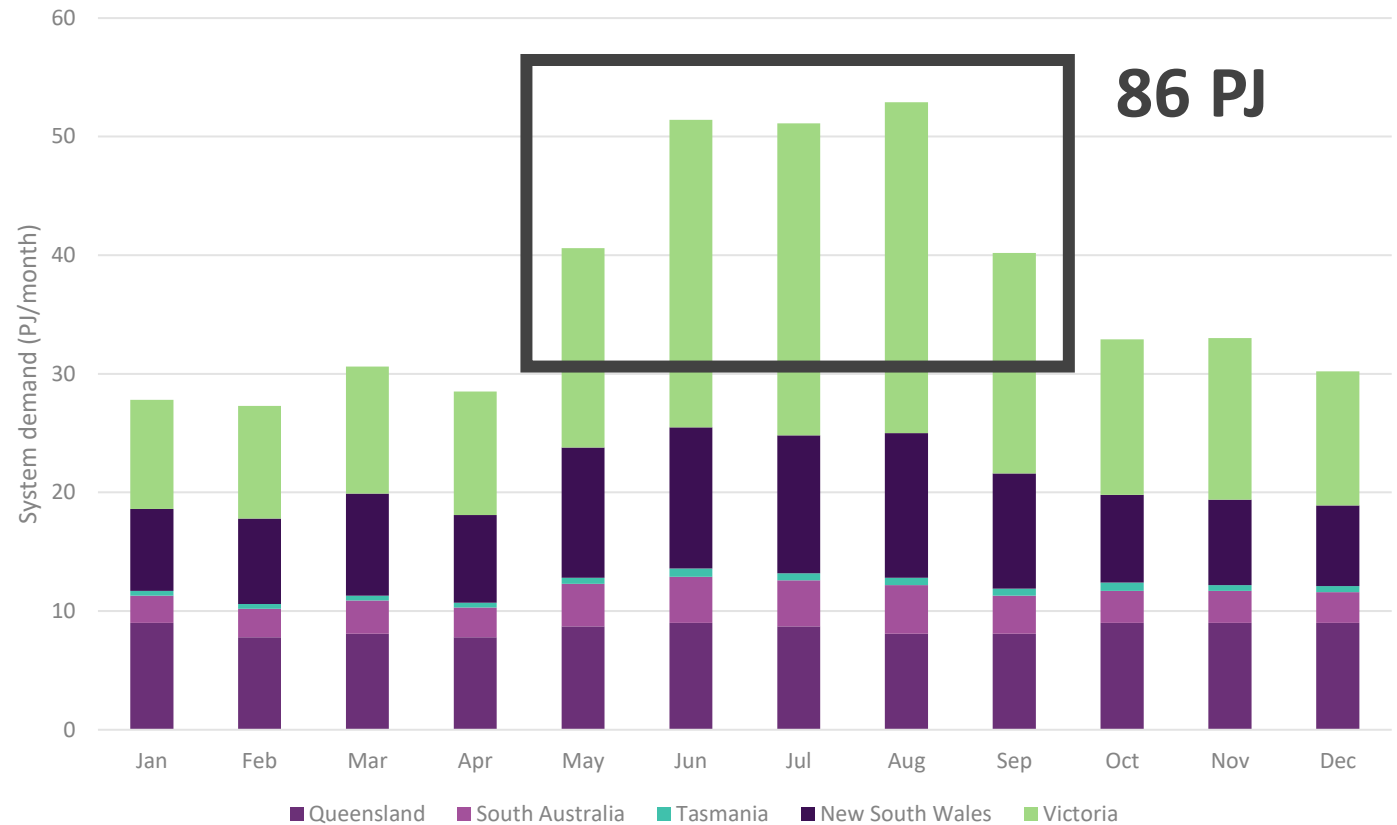
- LNG exporters forecasting, relative to contracted exports, an excess supply of around 10 PJ/month for the winter months of 2023.
- Ongoing supply issues for Blacktip. Supplying Mt Isa from Queensland impacts SWQP capacity.

Storage status



Seasonal adequacy

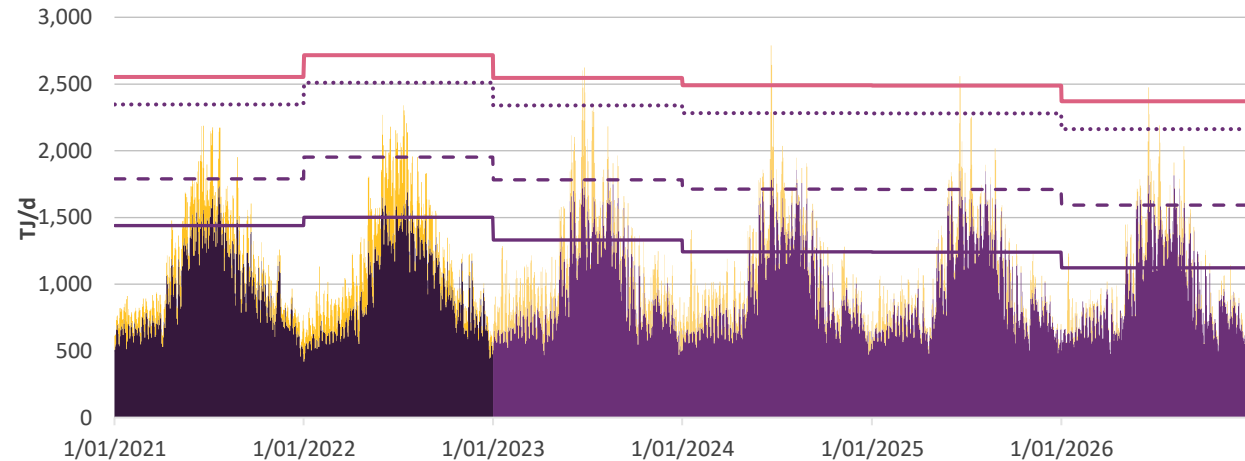
- Heating load in colder states (Victoria, New South Wales, South Australia) drive a large increase in demand during winter months, around 86 PJ of seasonal demand.
- Combined with gas generation, meeting seasonal demand in the southern states can be challenging.



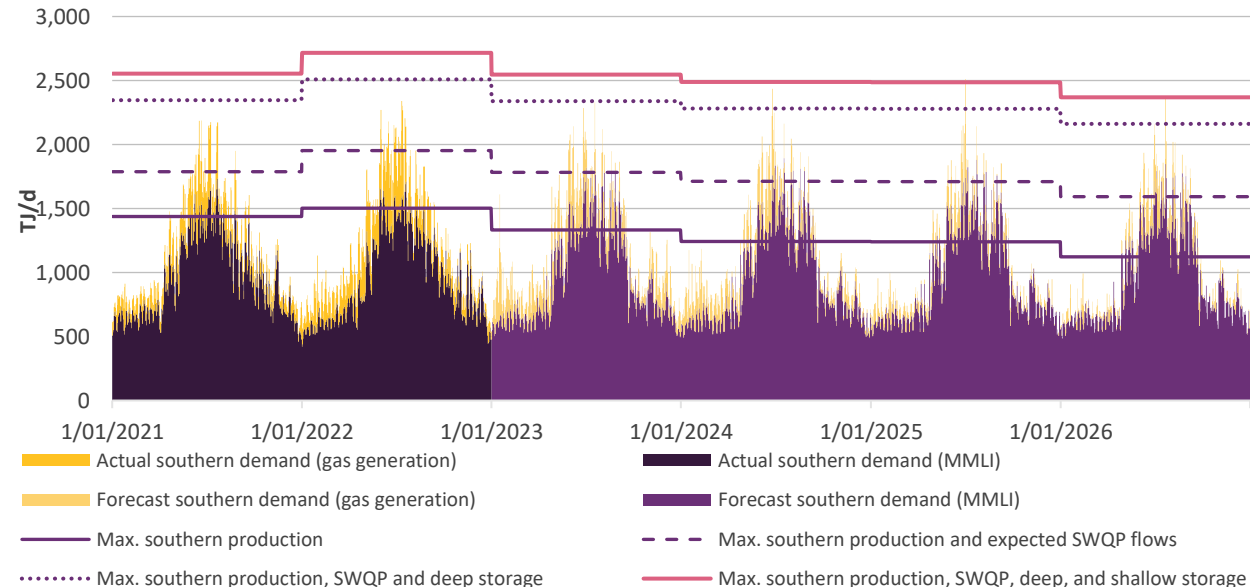
Peak day adequacy

- The 2023 GSOO forecasts peak day shortfalls in all years. These are on extreme days of high coincident demand across the southern states and high GPG.
- For a more average year, supply adequacy is very tight. On peak days only shallow storage remains as contingency.

Reference year 2019 - high coincidence of southern demand and NEM gas consumption

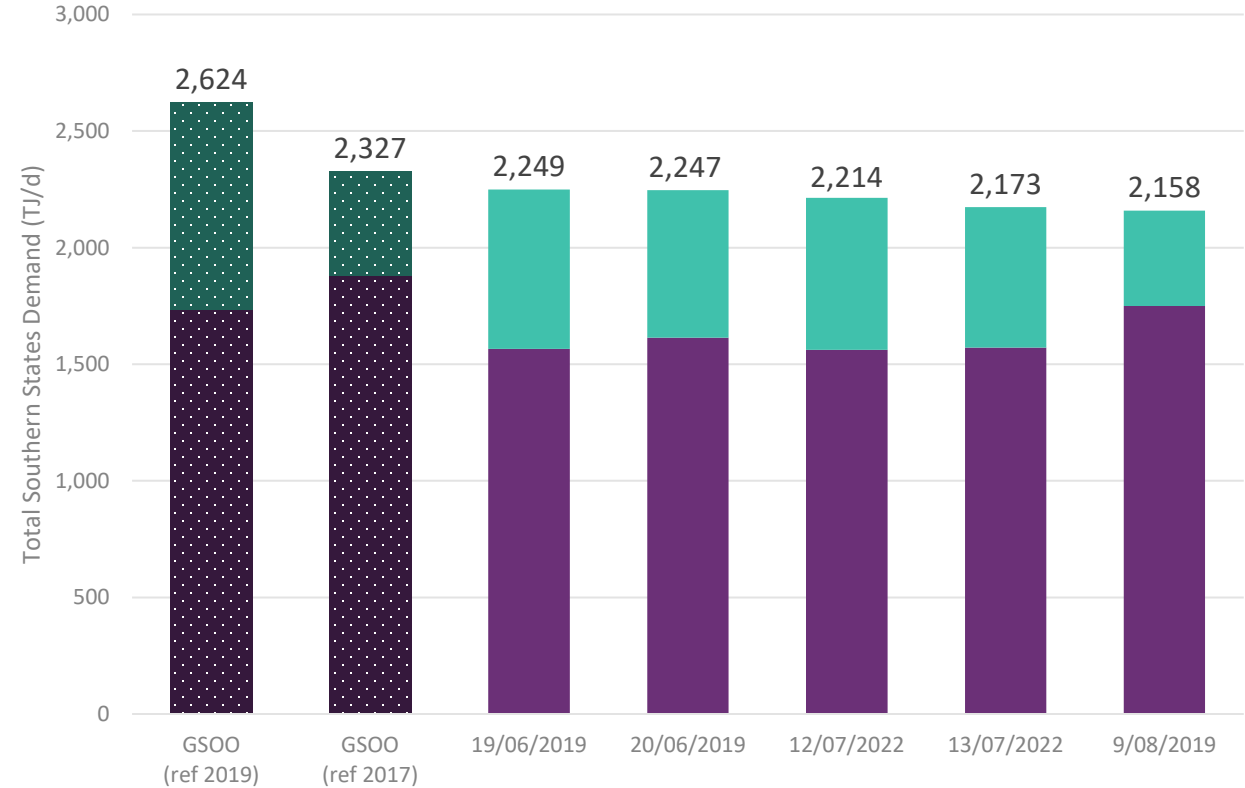


Reference year 2017 - average coincidence of southern demand and NEM gas consumption

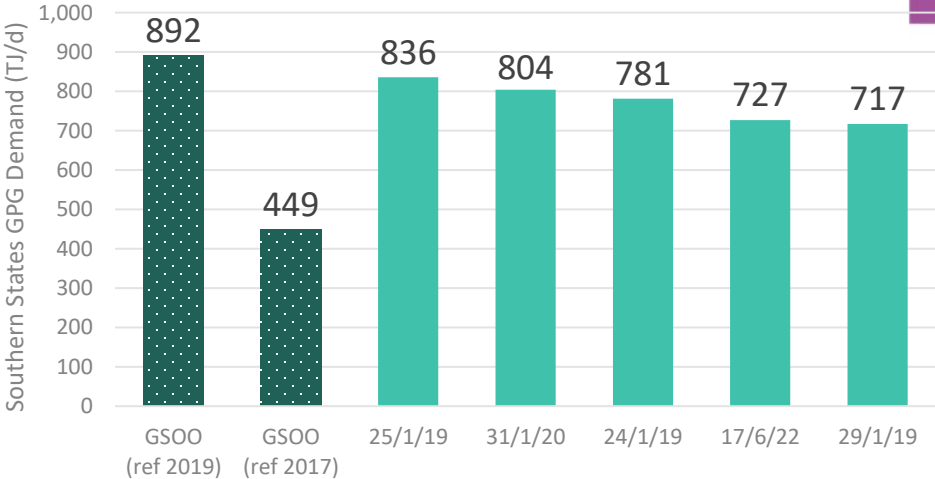


Peak day adequacy

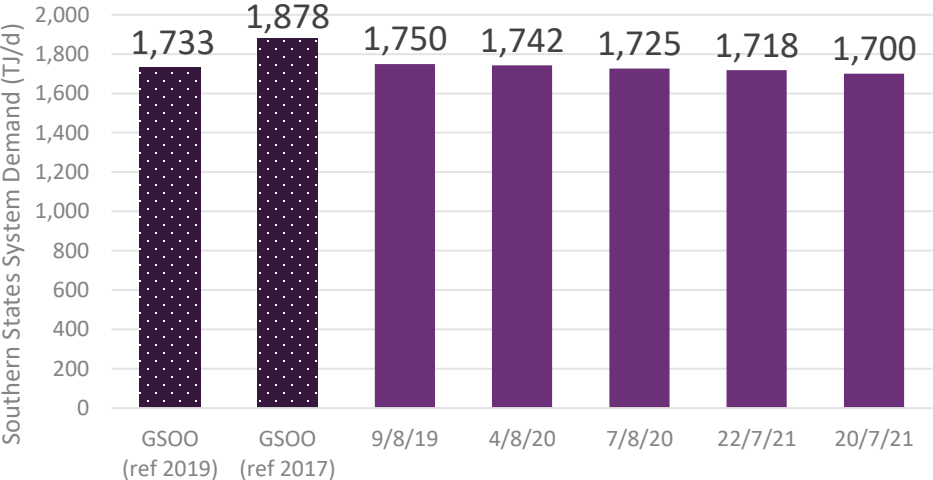
Southern states total demand



Southern states gas generation



Southern states system demand



Peak day adequacy

Delays to
projects

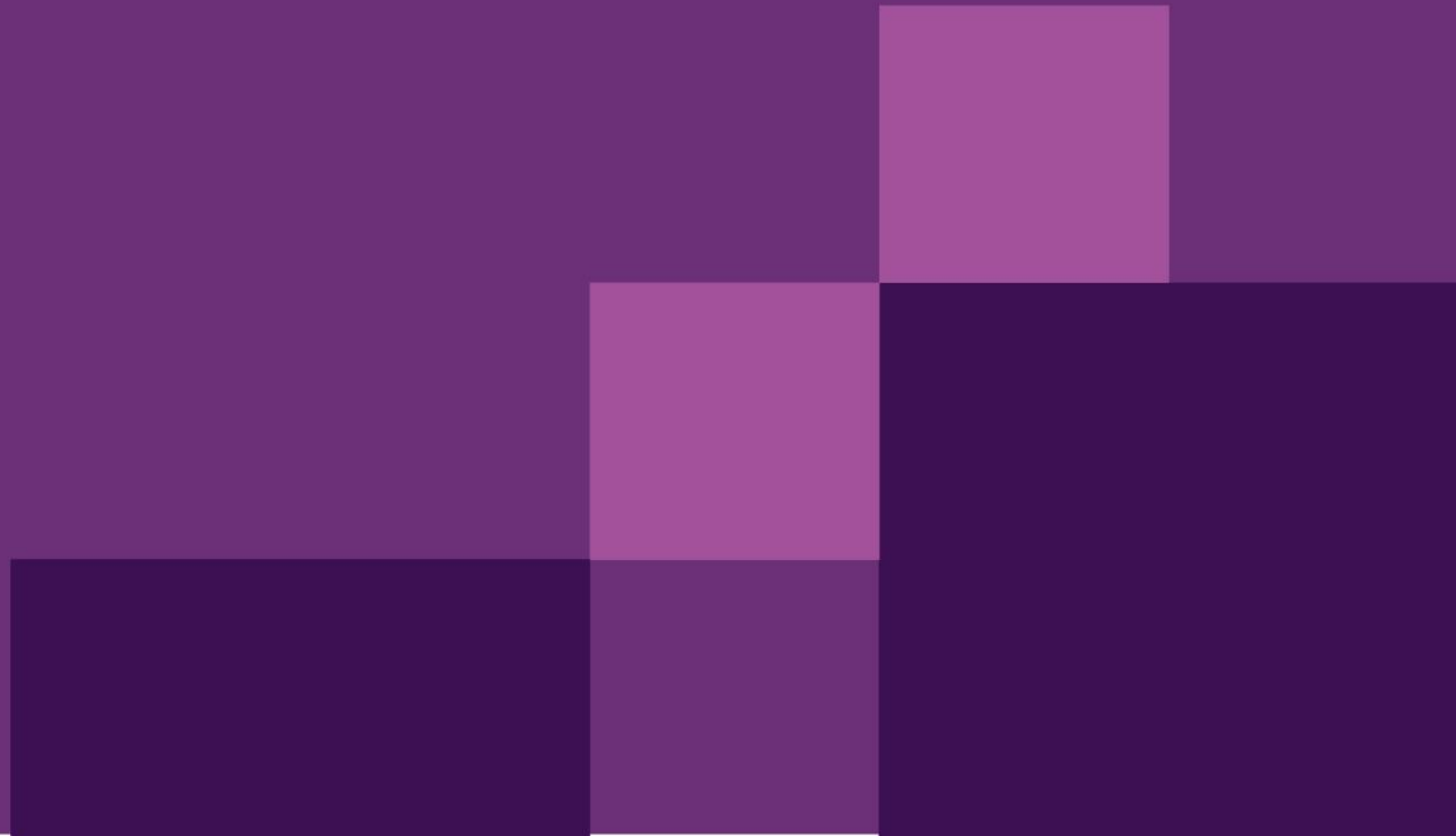
Production
facility outages

Unpredictable
decline of legacy
fields

Depletion of
storage inventory

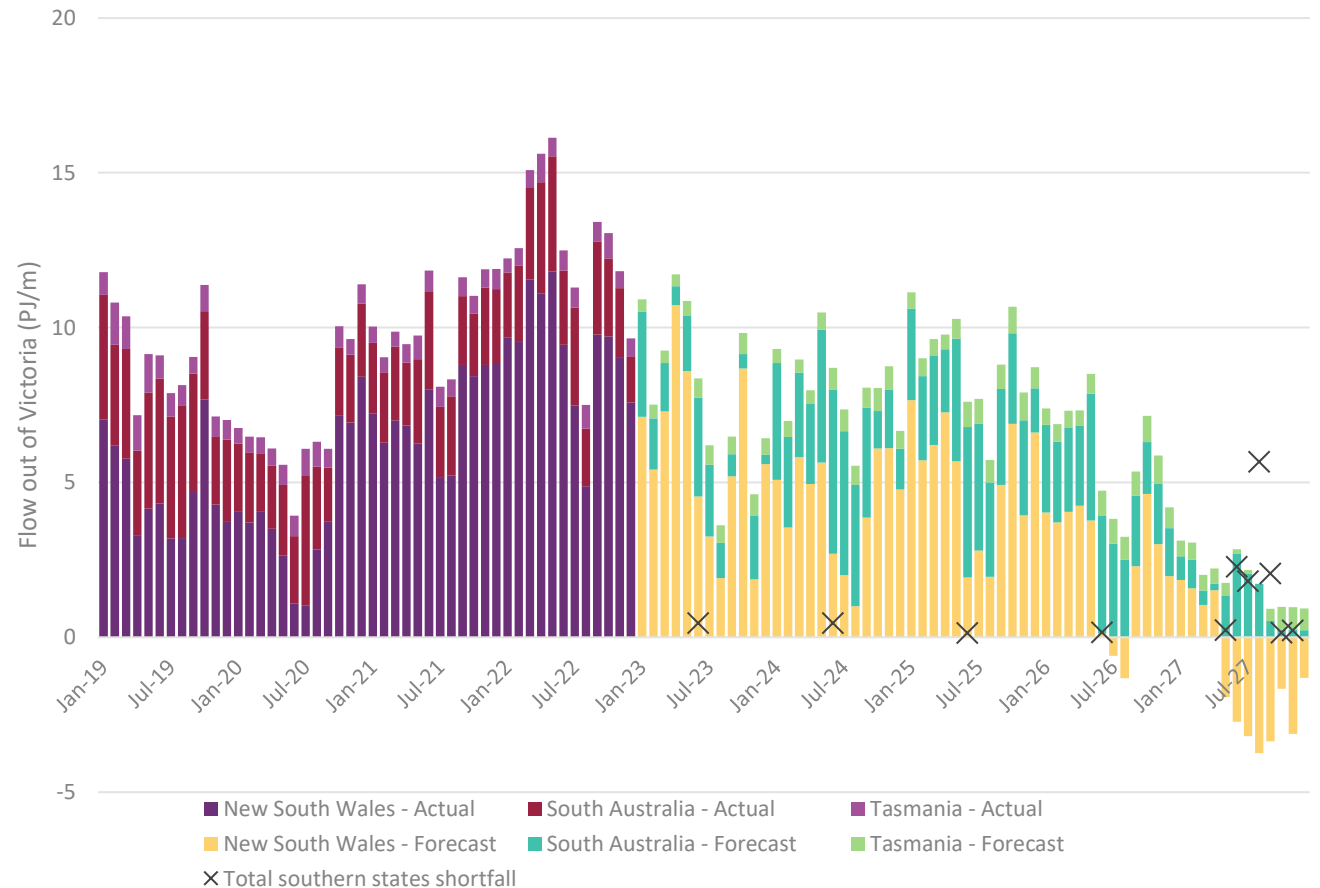
Reduction in gas
made available
from Queensland

Longer term adequacy

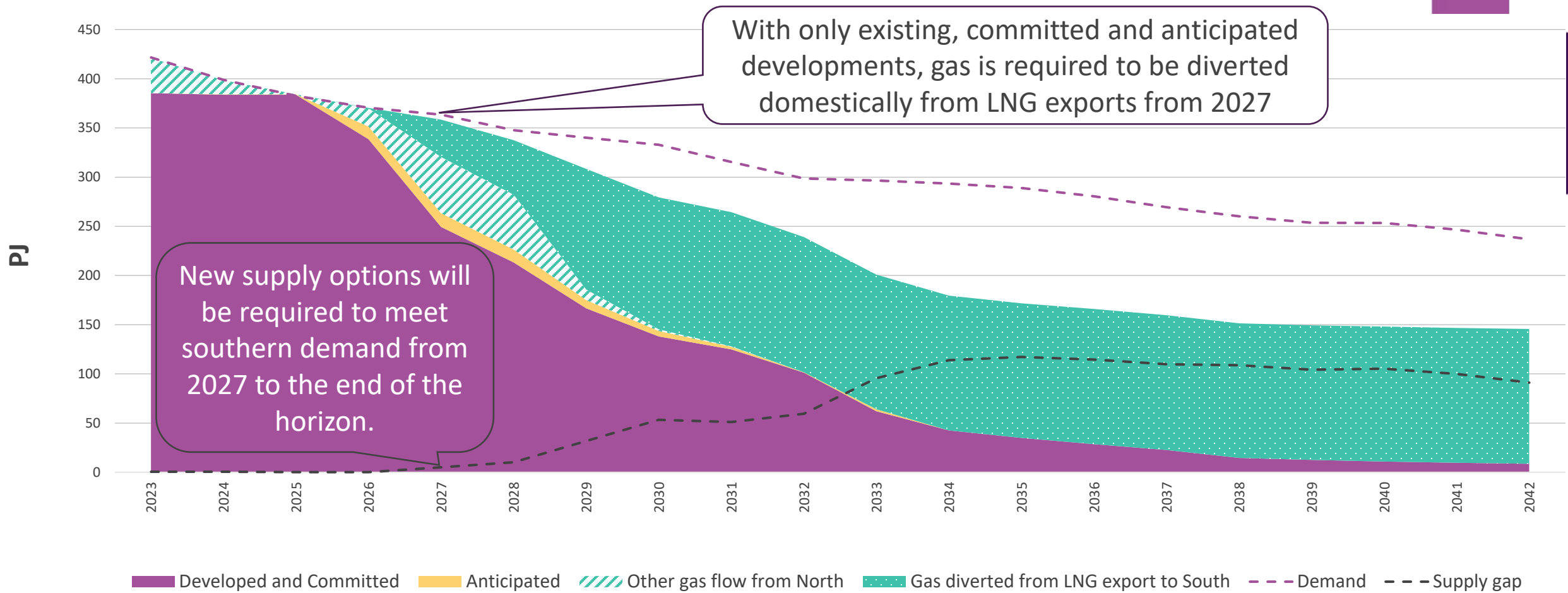


Longer term adequacy

- Victoria to become a net importer from winter 2027.
- Victorian annual shortfall cannot be supplied by other states because there are shortfalls across the east coast.
- Iona UGS and Dandenong LNG are heavily relied upon in all years.

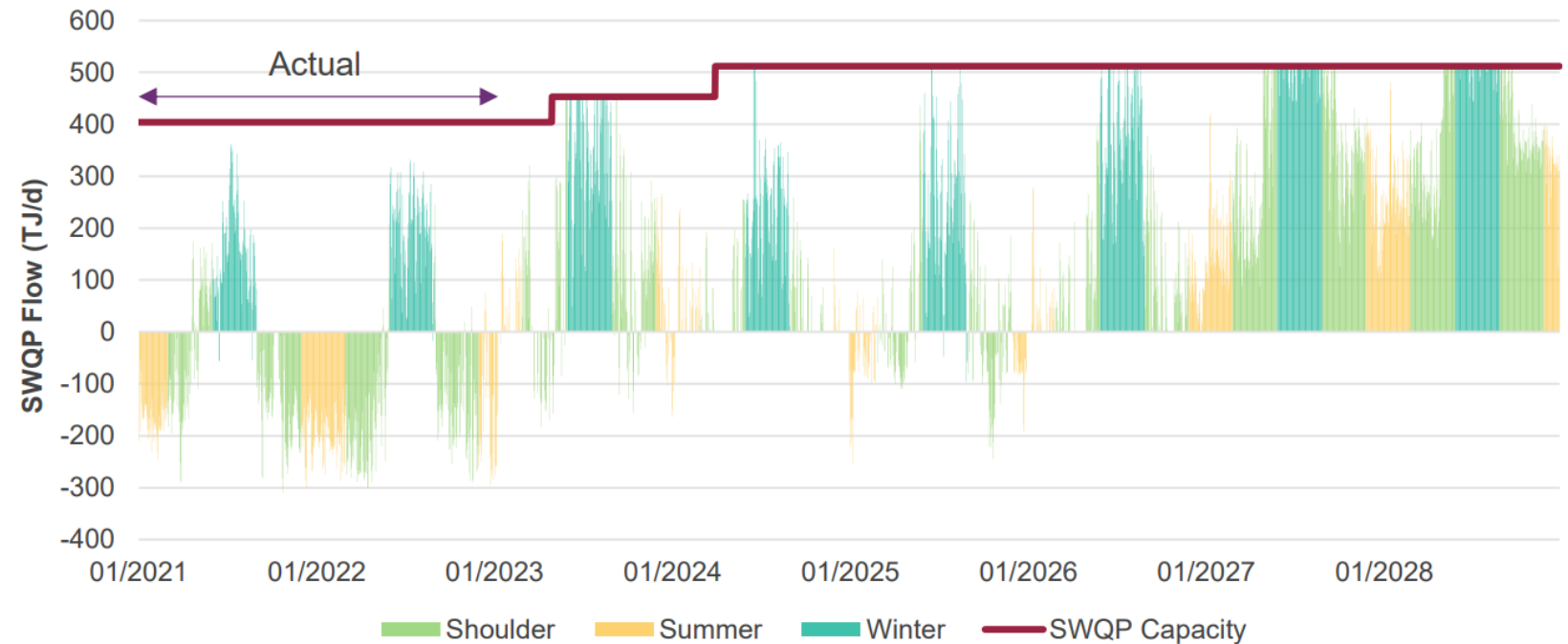


Longer term adequacy



SWQP adequacy

- Excess LNG export quantities are assumed to be sold to the domestic market.
- Modelling indicates that the SWQP will hit capacity more frequently.
- Additional Queensland flow will not resolve shortfalls if SWQP is already flowing at capacity.
- Summer flow is also abnormally high.



Summary

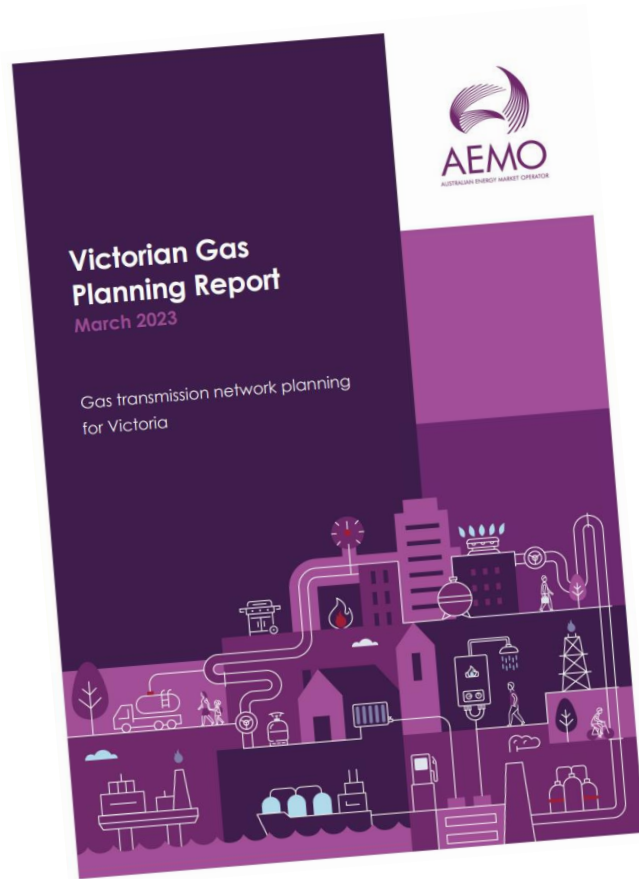
Key risks for winter 2023

High
coincident
demand

Asset
availability

Project
completion

Storage
depletion



Read the 2023 VGPR at: <https://aemo.com.au/en/energy-systems/gas/gas-forecasting-and-planning/victorian-gas-planning-report>



Read the 2023 GSOO at: <https://aemo.com.au/en/energy-systems/gas/gas-forecasting-and-planning/gas-statement-of-opportunities-gsoo>

View the GSOO webinar at: <https://www.youtube.com/watch?v=KV8-8VAt078>

Questions? Contact GasPlanning@aemo.com.au



For more information visit

aemo.com.au