

Please note that this webinar will be recorded and published online



2023 Gas Statement of Opportunities

Publication webinar

30 March 2023

Ask your questions in the chat

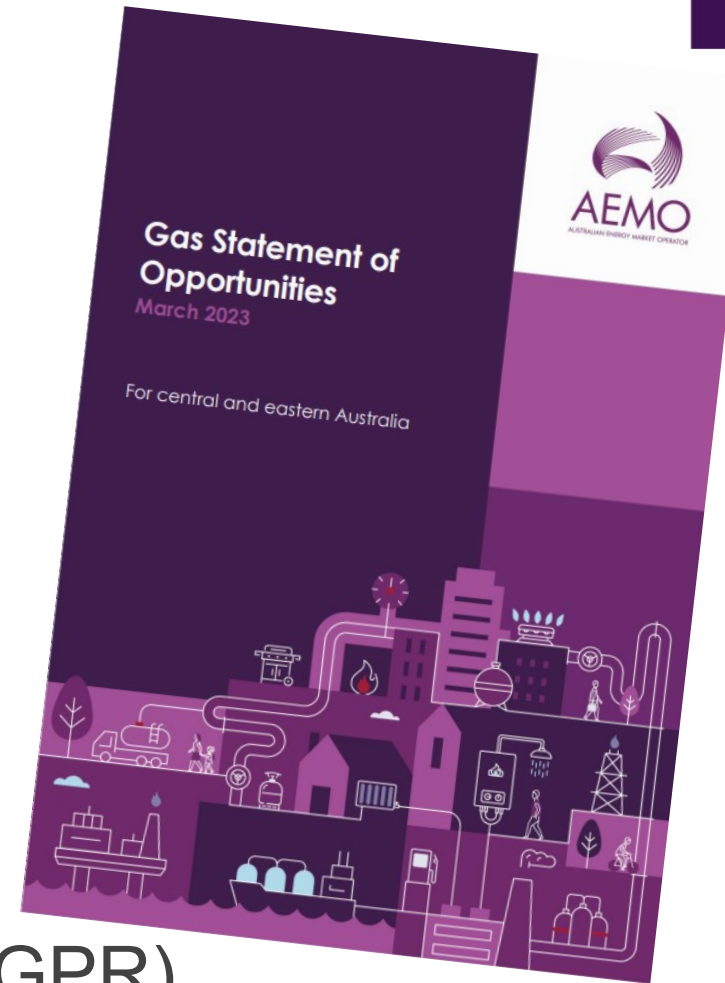


We acknowledge the Traditional Owners of country throughout Australia and recognise their continuing connection to land, waters and culture.

**We pay respect to their Elders
past and present.**

Agenda

1. 2023 GSOO introduction
2. Summary of key messages
3. Gas consumption forecasts
4. Gas powered generation
5. Gas supply outlook
6. Adequacy assessment
7. Short and long term options
8. The Victorian Gas Planning Report (VGPR)

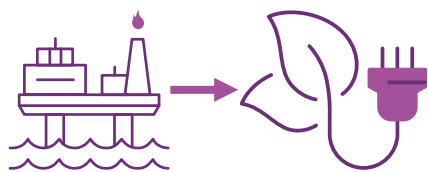


Read the 2023 GSOO at: <https://aemo.com.au/en/energy-systems/gas/gas-forecasting-and-planning/gas-statement-of-opportunities-gsoo>

What is the GSOO?

- The Gas Statement of Opportunities (GSOO) report is published annually in March, prior to expected winter peak.
- Assesses physical supply adequacy of the gas network over a 20 year horizon (2023-2043), for all Australian states and territories except Western Australia.
- Identifies short-term gas shortfalls, and long-term supply gaps, and opportunities to respond to them.

2023 GSOO Key insights



Gas will continue to complement zero emissions and renewable energy forms, and provide a reliable and dispatchable form of electricity generation.

The energy transition to net zero is anticipated to involve significant fuel-switching from gas to electricity; the pace, scale and breadth of change is uncertain.



Risk of peak day shortfalls continues to be forecast under very high demand conditions in the southern states from this winter (2023) even with surplus gas production capacity from LNG exporters.

As more gas heating loads shifts to electric alternatives, greater coincidence of gas and electricity winter peaks is forecast.



In the longer term, annual gas supply production is forecast to be inadequate from 2027.

The net-zero transition will reduce gas consumption, but the pace and breadth of change is uncertain

- This GSOO focuses on *1.8°C Orchestrated Step Change*. In this scenario, consumers are forecast to embrace opportunities to reduce emissions through electrification where technically and commercially practical, as well as investing in energy efficiency applications.
- *Additional scenarios examine a number of plausible futures that* vary increasingly over time as more uncertainty affecting policy, technology and social change impacts gas consumption.
- Strong policy incentives and industry investment will be required to realise the level of electrification assumed under this scenario. While electrification investments are certain to impact gas consumption in future years, uncertainty remains over how quickly consumers shift their energy preferences away from natural gas.

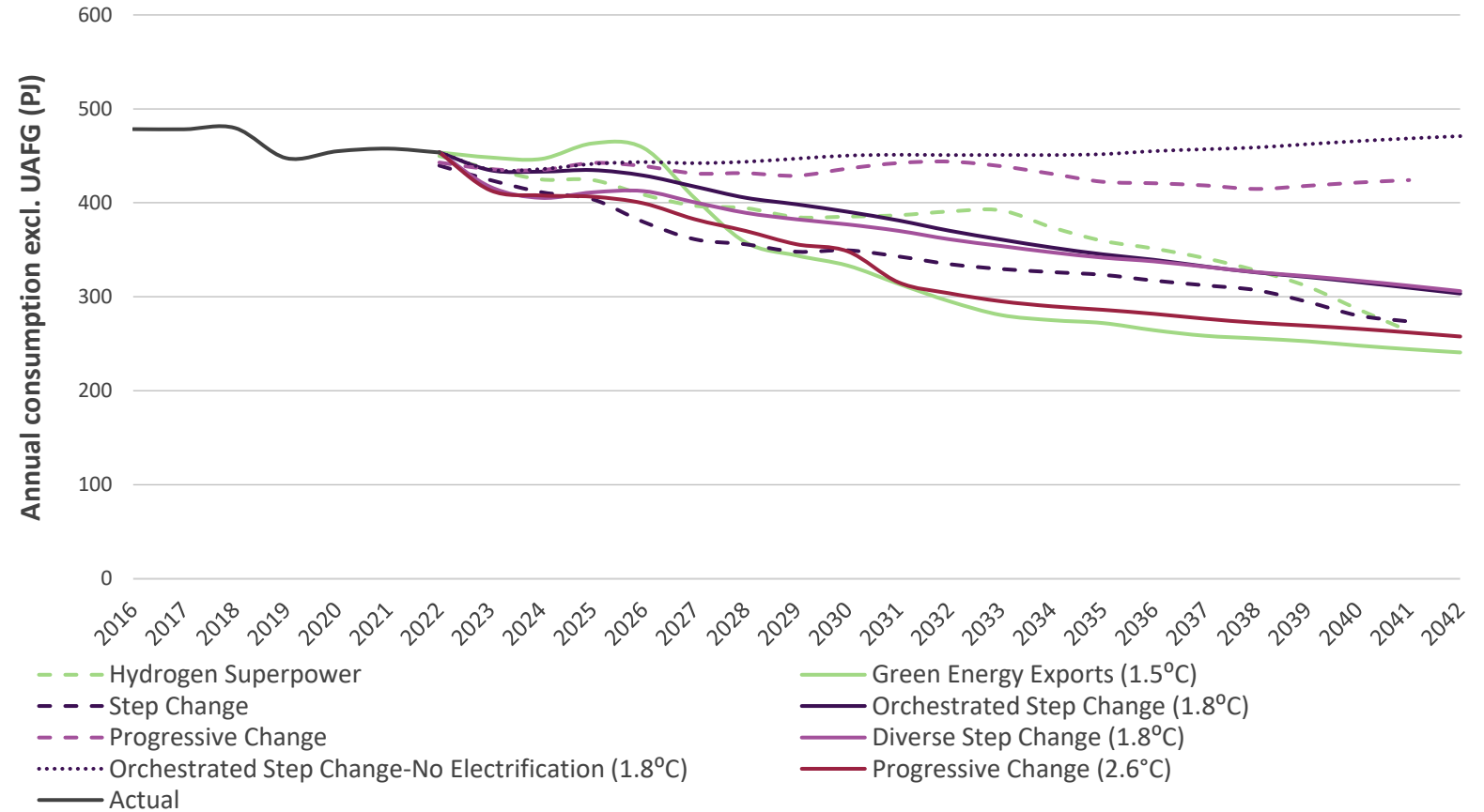


Figure 1: Forecast domestic natural gas consumption, excluding gas generation, all scenarios and compared to 2022 GSOO forecasts (PJ), 2016-42

Gas generation helps maintain NEM reliability and security.

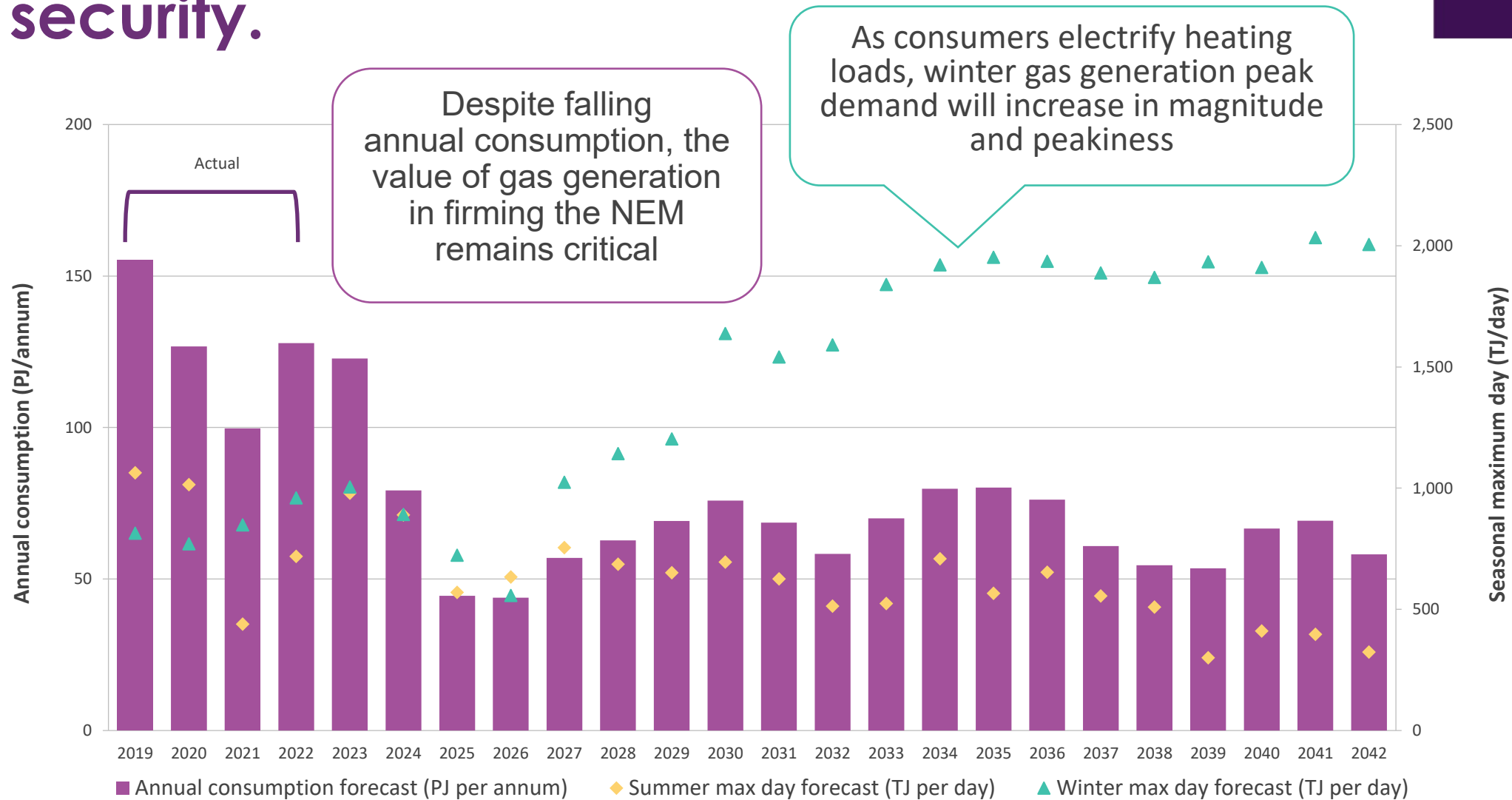


Figure 2: Actual and forecast NEM gas generation annual consumption (PJ/y) and seasonal maximum daily demand (TJ/d), 1.8°C Orchestrated Step Change, 2019-42

Gas adequacy is increasingly challenged, despite falling consumption, due to declining supply.



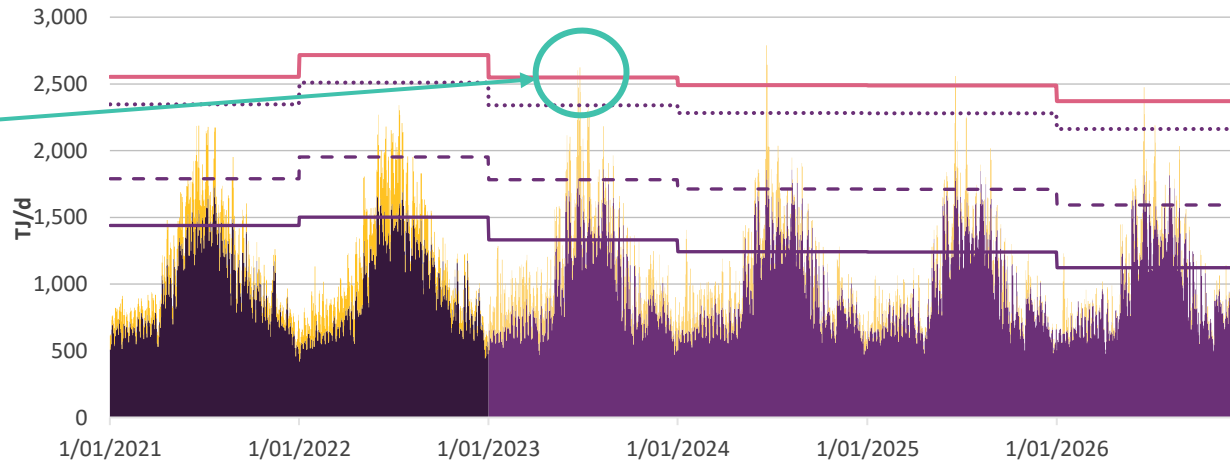
Figure 3 Actual and forecast maximum daily production capacity from southern gas fields, 2021-27 (TJ/d)

Southern shortfall risks begin from 2023, under extreme demand conditions

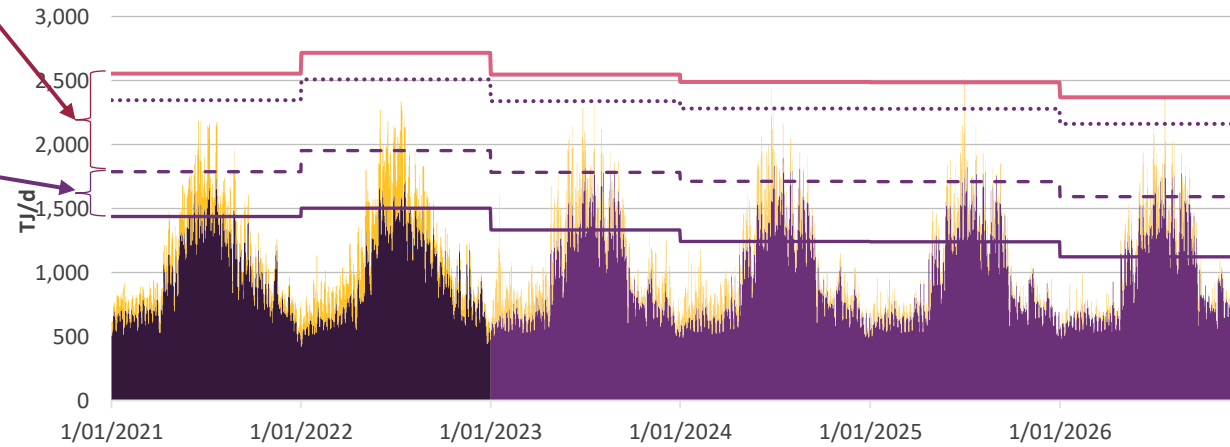
Peak day shortfalls are forecast from 2023 under extreme peak days with high regional coincidence (including gas generation needs)

- Deep and shallow storages are critical to meet peak day demand
- Northern gas must be made available to southern consumers at pipeline capacity to mitigate shortfall risks.

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



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



Solutions to manage shortfall risks include:

- Delivering committed infrastructure developments on schedule
- Maintaining availability of shallow storages
- Reducing gas generation during peak gas demand times (or using secondary fuels)
- Voluntary demand side participation in the NEM to reduce gas generation
- Requests through media for voluntary reductions in gas use on peak demand days
- Beyond 2024, development of anticipated and uncertain supply

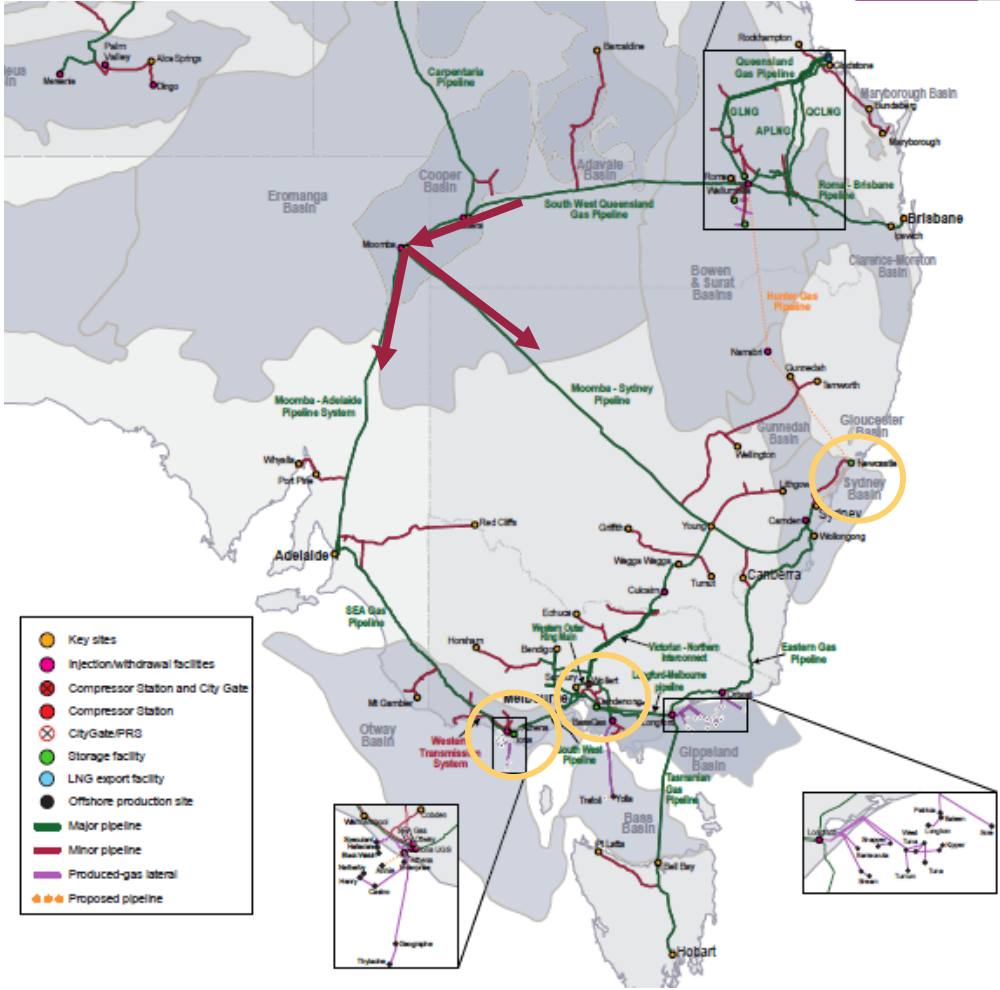
Figure 4 - Actual and forecast daily southern gas demand showing seasonality, peakiness, southern production, and total system capacity available to meet southern demand using existing and committed projects for the Orchestrated Step Change (1.8°C) scenario, under favourable and extreme weather conditions (TJ)

Storage and flows from Queensland are critical to meet seasonal supply

Utilisation of stored gas is increasingly important as southern production declines. Therefore, filling storages ahead of winter is critical to gas availability.

Flows from Queensland are critical to meet southern winter demand.

		Southern committed production (PJ)	Net storage withdrawal (PJ)	SWQP flow (PJ)	Demand (PJ)	Shortage (PJ)
2023	Q1	81.3	-0.3	-0.8	80.2	0.0
	Q2	107.0	2.6	10.1	120.2	0.5
	Q3	107.2	6.2	24.7	138.1	0.0
	Q4	89.8	-8.5	1.7	83.0	0.0
2024	Q1	77.6	1.1	-1.6	77.1	0.0
	Q2	100.9	5.4	6.8	113.6	0.5
	Q3	111.0	5.9	14.7	131.6	0.0
	Q4	94.2	-12.4	-5.1	76.6	0.0



Storages are critical to meet demand, provide operational flexibility, and mitigate shortfall risks

Storages are important risk mitigation assets. They provide insurance to mitigate the risk of unplanned and potentially frequent shortage events when filled appropriately

Forecast utilisation of Iona in 2023 is similar to 2022

But increased utilisation of shallow storages is required.

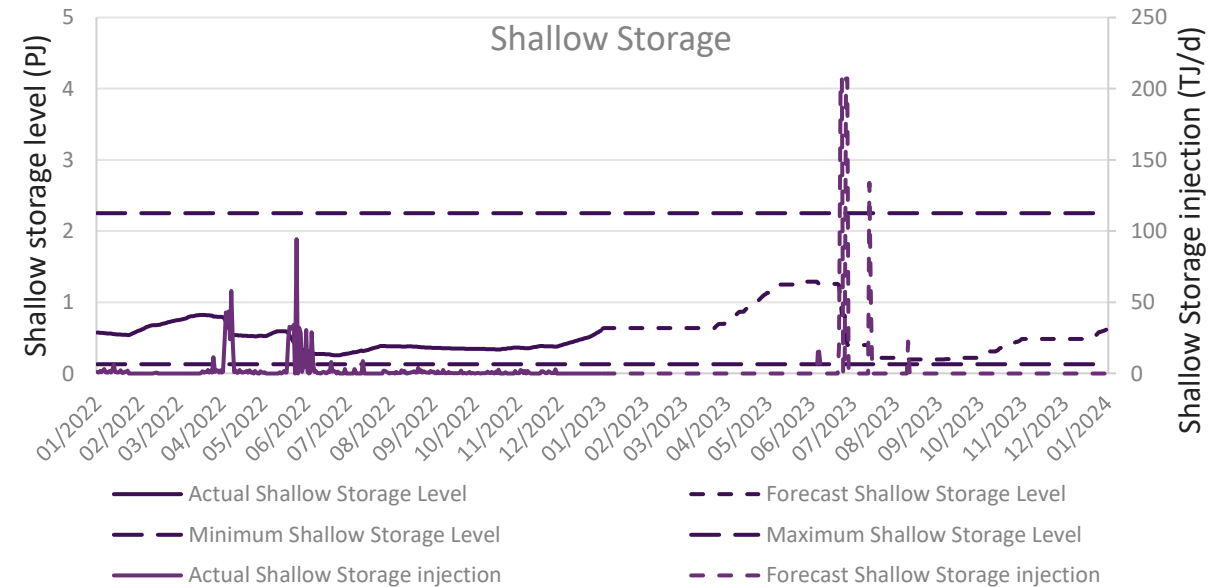
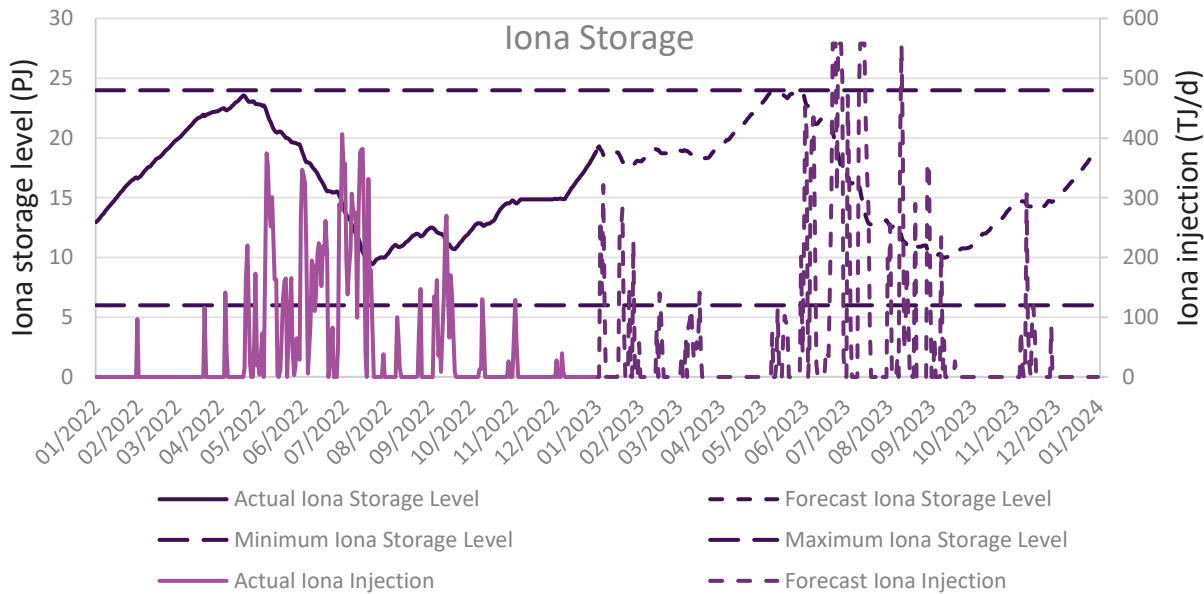


Figure 38 - Actual and forecast storage levels, 2022-24, reference year 2019 (TJ)

Expanded southern supply or increased transportation capacity is needed to avoid domestic supply gaps

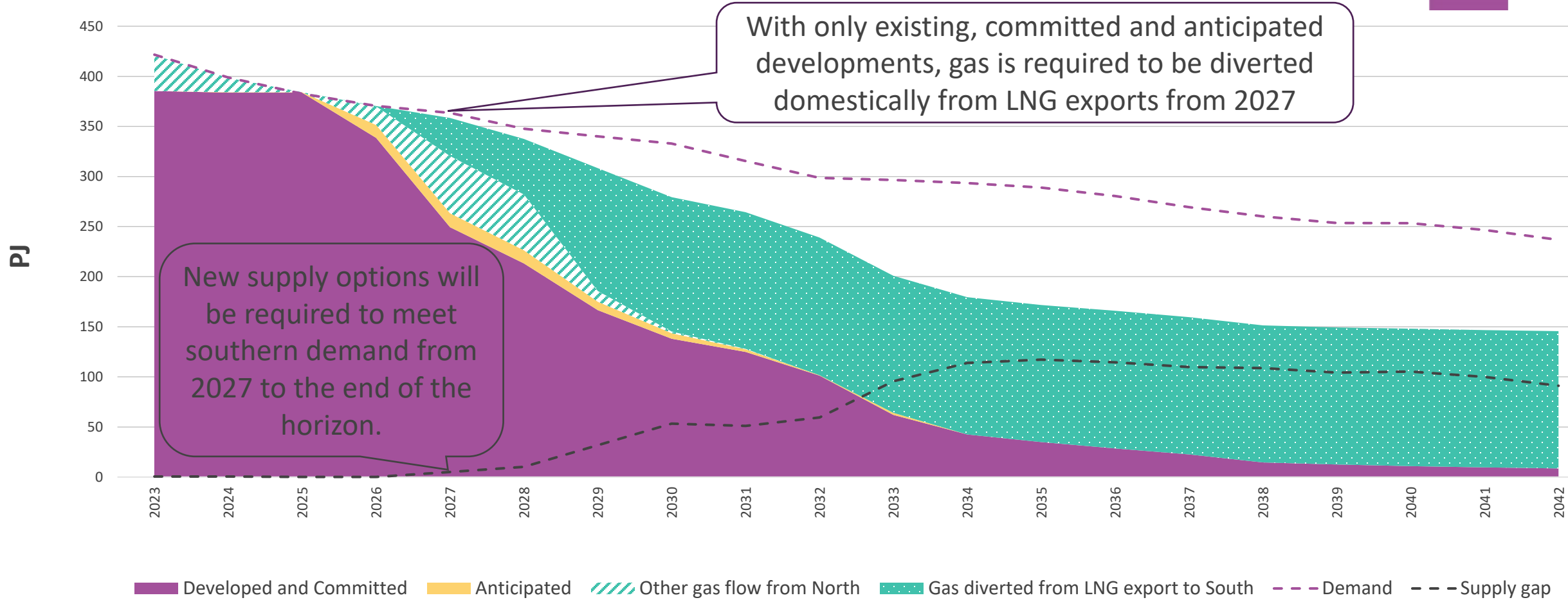


Figure 46 - Projected annual adequacy in southern regions Orchestrated Step Change (1.8°C) scenario, with existing, committed and anticipated developments, 2023-42 (PJ)

LNG exporters supply is important for domestic consumers

- From 2026, some contracted export volumes may need to be redirected to support domestic demand.
- The Australian Competition and Consumer Commission's (ACCC's) January 2023 Gas Inquiry 2017-2030 Interim Report indicates that LNG exporters anticipate 88 PJ of additional LNG spot cargoes will be sold in 2023.
- This would increase total LNG exports to 1,384 PJ, above the advice provided to AEMO for this 2023 GSOO of the expected export contracts.
- AEMO forecasts that if this quantity was exported, rather than supplied to domestic consumers, there would be a domestic supply gap of *up to 33 PJ* in 2023.

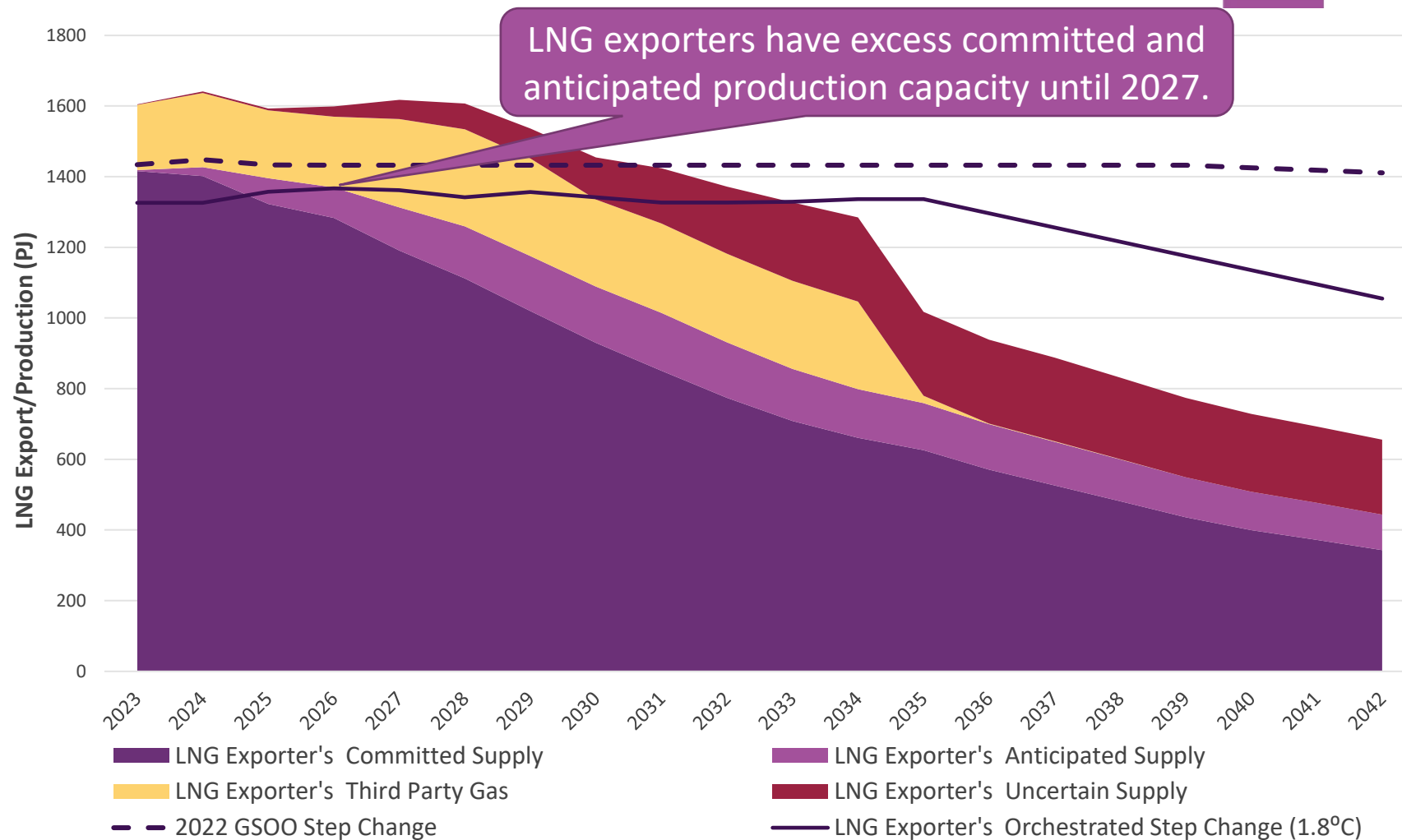
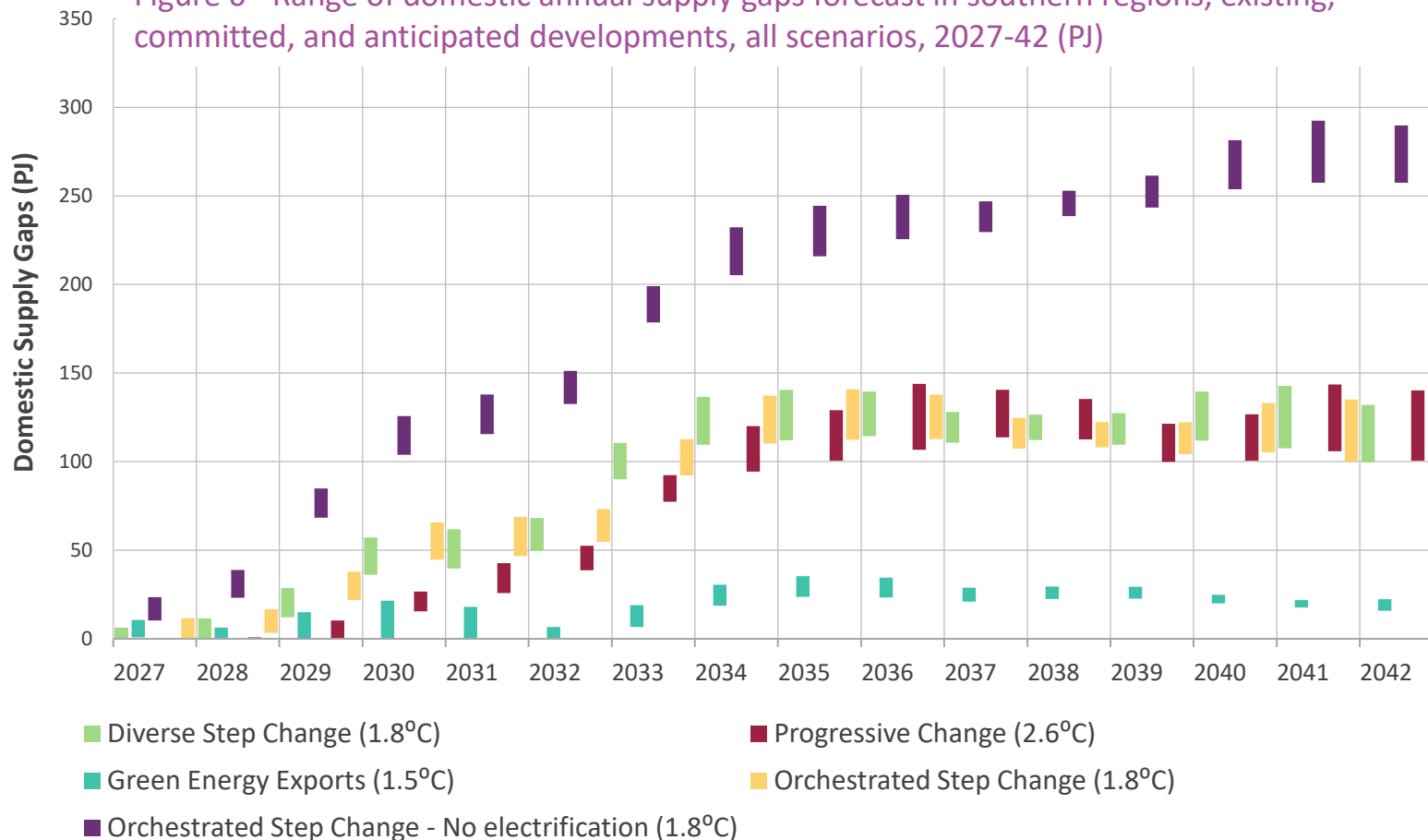


Figure 5 - LNG exporter committed, anticipated and uncertain production, and third-party gas contracts in comparison to forecast exports, Orchestrated Step Change (1.8°C) scenario, 2023-42 (PJ/y)

In the long term, new investment is needed to address supply gaps

Figure 6 - Range of domestic annual supply gaps forecast in southern regions, existing, committed, and anticipated developments, all scenarios, 2027-42 (PJ)



The 1.8°C Orchestrated Step Change, No electrification sensitivity provides a conceptual upper bound to the expected demand for natural gas.

- Cross-scenario dispersion driven by levels of:
 - Electrification
 - Economic and population growth
 - Hydrogen use (offset)
 - Gas for hydrogen production (SMR)
- In-scenario dispersion driven by the impact of weather on:
 - Demand for gas for heating
 - Gas generation, reflecting the weather sensitivity of electricity demand

There is a significant opportunity for LNG imports to provide additional supply and production flexibility

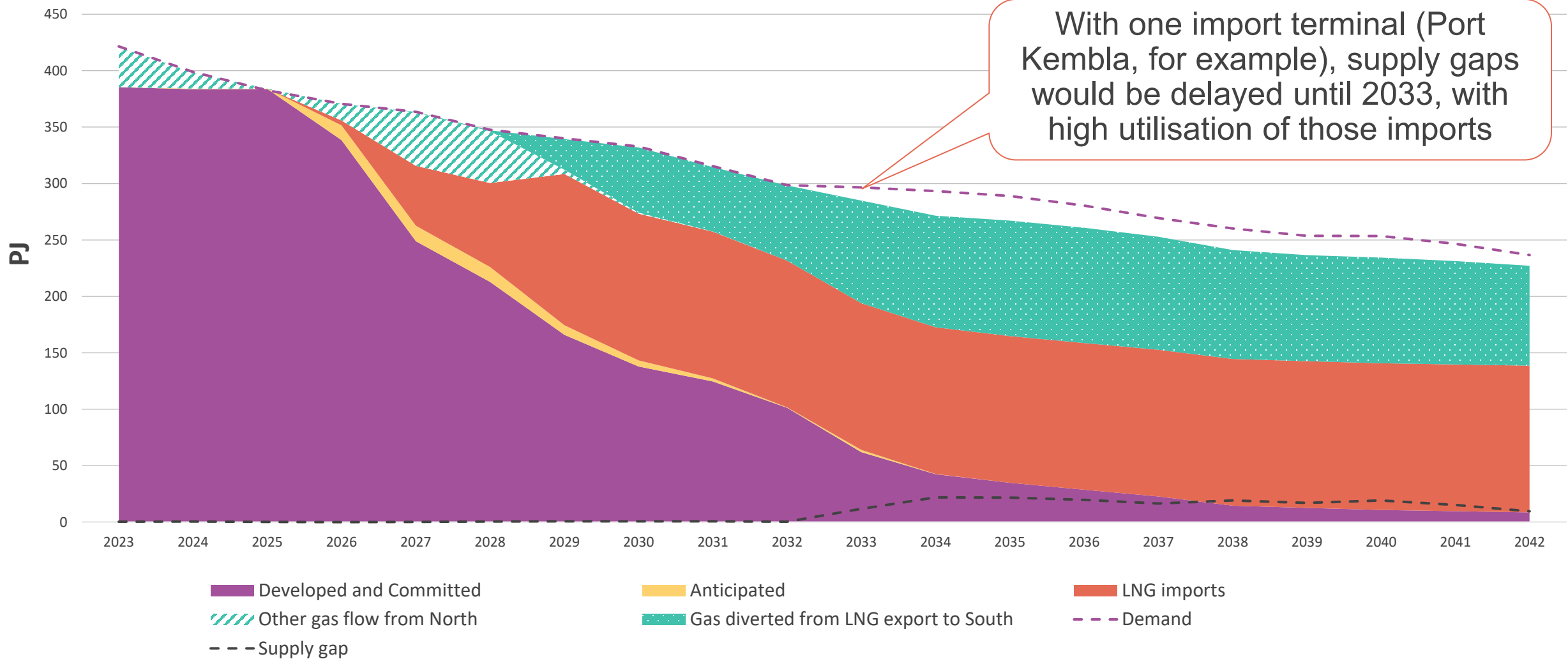


Figure 49 - Projected annual adequacy in southern regions Orchestrated Step Change (1.8°C) scenario, with existing, committed and anticipated developments, and PKET, 2023-42 (PJ)

Longer-term investment opportunities in gas supply exist but must consider uncertainty and peakiness

Uncertainty in future gas needs

- While more frequent gas supply gaps are evident in all scenarios, the timing, profile and magnitude of these gaps vary.
- Investments are needed in gas supply and potentially connecting infrastructure.
- Solutions that may work best in this uncertain environment would be projects that are scalable, can be developed in stages as required, and ideally use existing infrastructure or share infrastructure with other investments.

Increased peakiness of gas demand

- Opportunities for response are likely to come from more flexible, agile solutions that can support gas demand that is uncertain and increasingly peaky.
- The flexible solutions can be either infrastructure-based (such as local storages), or demand side options, for example interruptible gas contracts.

The Victorian Gas Planning Report (VGPR)

- The VGPR assesses supply adequacy for the Victorian Declared Transmission System (DTS) over a five-year outlook.
- Provides extra detail on supply, emerging constraints and opportunities in Victoria.



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

Q&A

Type your questions in the chat

Fill in the [post-event survey](#)