AEMO
AUSTRALIAN ENERGY MARKET OPERATOR

The role of Gas in maintaining Australia's energy security through demand volatility

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2 April 2025

We acknowledge the Traditional Custodians of the land, seas and waters across Australia. We honour the wisdom of Aboriginal and Torres Strait Islander Elders past and present and embrace future generations.

We acknowledge that, wherever we work, we do so on Aboriginal and Torres Strait Islander lands. We pay respect to the world's oldest continuing culture and First Nations peoples' deep and continuing connection to Country; and hope that our work can benefit both people and Country.

'Journey of unity: AEMO's Reconciliation Path' by Lani Balzan

AEMO Group is proud to have delivered its first Reconciliation Action Plan in May 2024. 'Journey of unity: AEMO's Reconciliation Path' was created by Wiradjuri artist Lani Balzan to visually narrate our ongoing journey towards reconciliation - a collaborative endeavour that honours First Nations cultures, fosters mutual understanding, and paves the way for a brighter, more inclusive future.

Read our RAP

AEMO Gas Roles

Gas

Declared Wholesale Gas Market (DWGM)

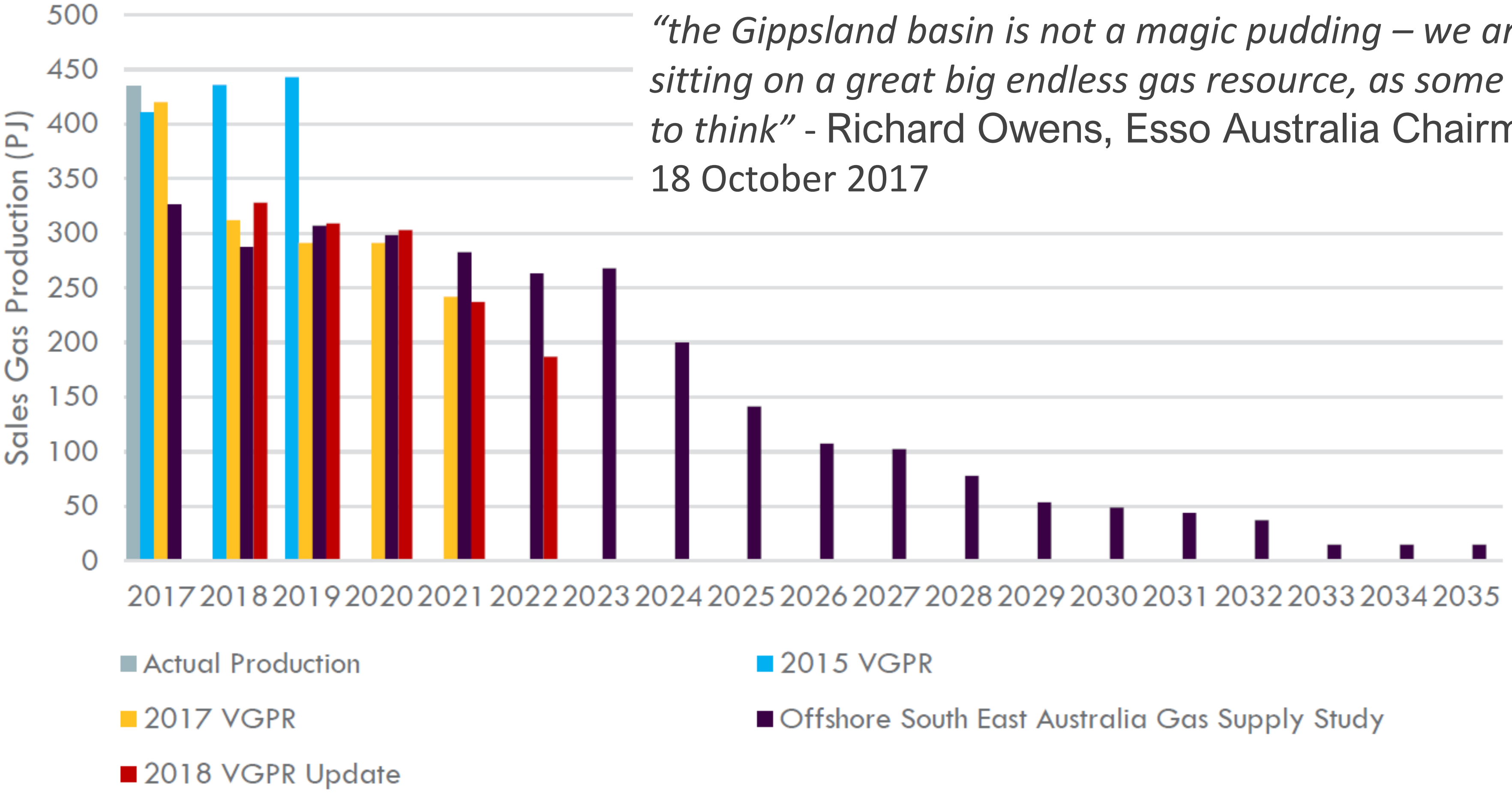
Short Term Trading Market (STTM)

Gas Supply Hub (GSH) and **East Coast Gas System (ECGS)**

- Victoria:
  - Operator of the Declared Wholesale Gas Market – covers most of Victoria.
  - Operator of the Victorian Gas Declared Transmission System – with Direction powers.
  - Victorian Gas Planning Report.
- Short Term Trading Markets:
  - Separate daily balancing hub markets covering Sydney, Adelaide, and Brisbane (excludes most GPG).
  - Contingency Gas – market mechanism for responding to shortfalls.
- Gas Supply Hub:
  - Voluntary trading hub – initially Wallumbilla in Queensland, now multiple East Coast locations including pending implementation at Port Campbell and Longford.
  - Includes Day Ahead Auctions of pipeline capacity and Pipeline Capacity Trading.
- East Coast Gas System
  - Gas Statement of Opportunities.
  - Responsible for security of gas supply in eastern Australia including the Northern Territory including Direction powers (functions based on AEMO's Victorian role without physical pipeline operation).

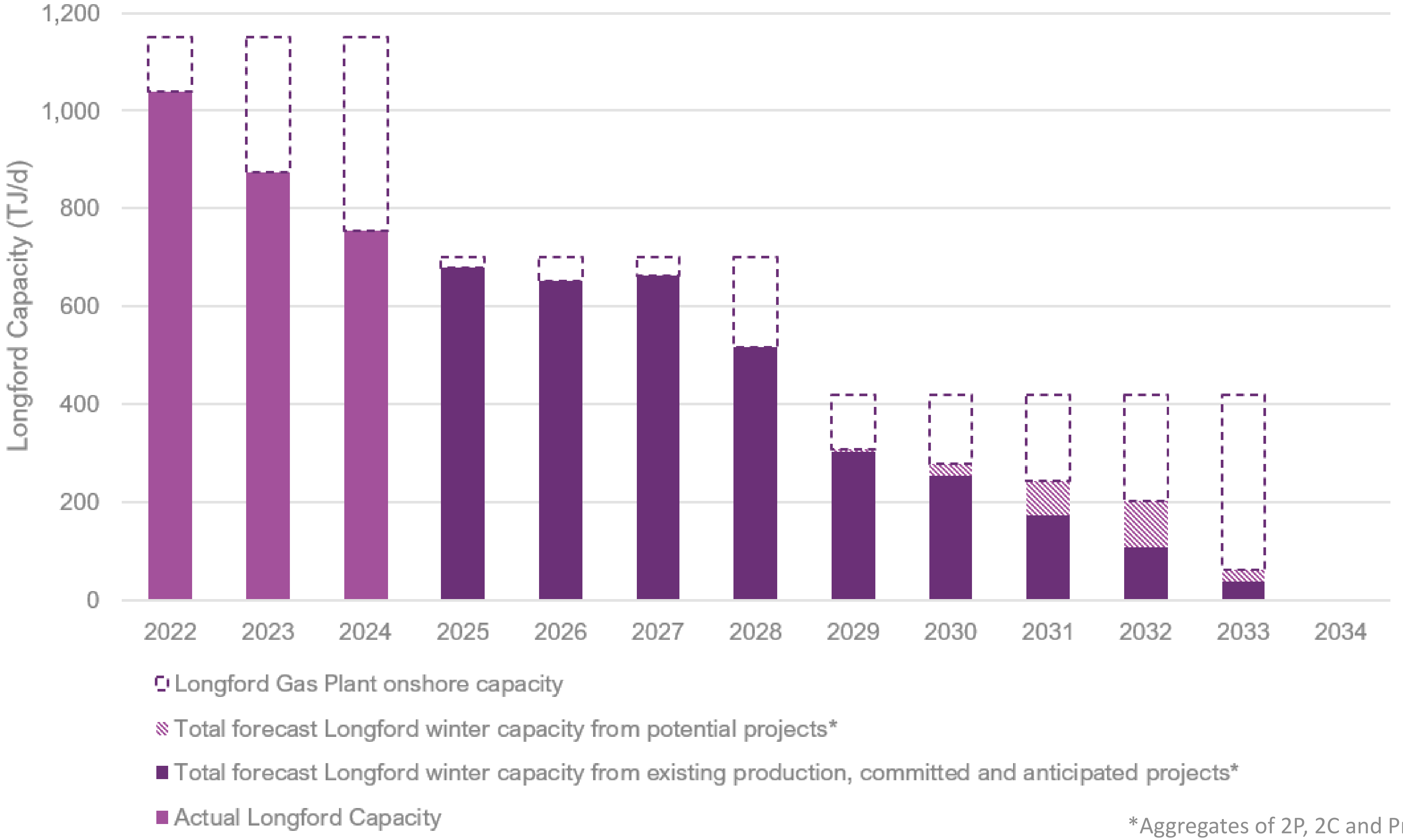
Victorian Production decline highlighted in the 2018 VGPR Update

Figure 2 Victorian production forecasts by year (PJ/a)



"the Gippsland basin is not a magic pudding – we are not sitting on a great big endless gas resource, as some seem to think" - Richard Owens, Esso Australia Chairman, 18 October 2017

Longford capacity forecast



*Aggregates of 2P, 2C and Prospective resources

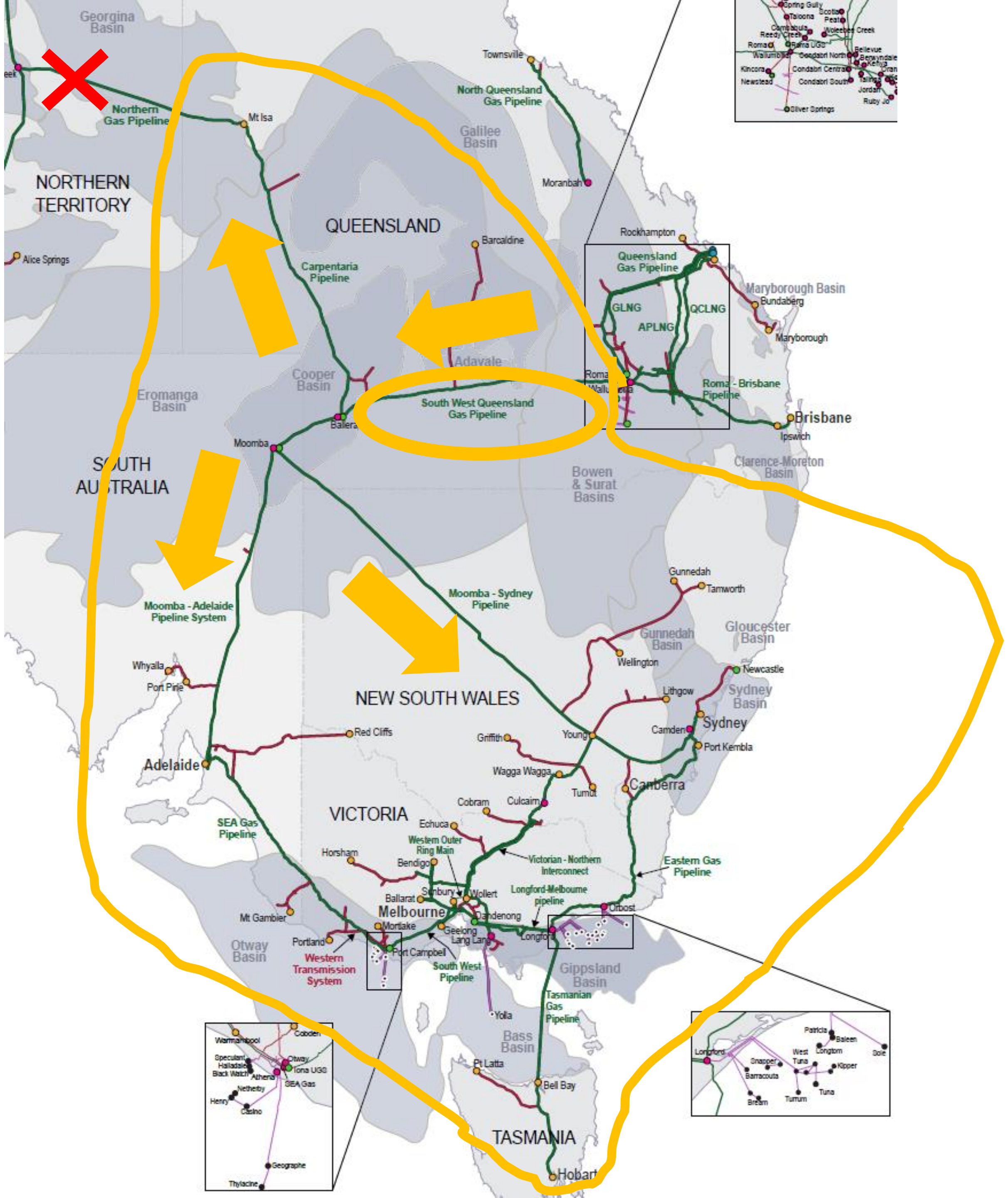
Queensland to southern states supply constraint

<u>Current capacity limitations</u>:
SWQP max = 512 TJ/d
less Mt Isa = 82 TJ/d
plus Moomba = 270 TJ/d

Total supply to southern states including Moomba production is therefore limited to approx. 700 TJ/d

<u>Current capacity limitations</u>:
Moomba to Sydney = 565 TJ/d
Moomba to Adelaide = 249 TJ/d

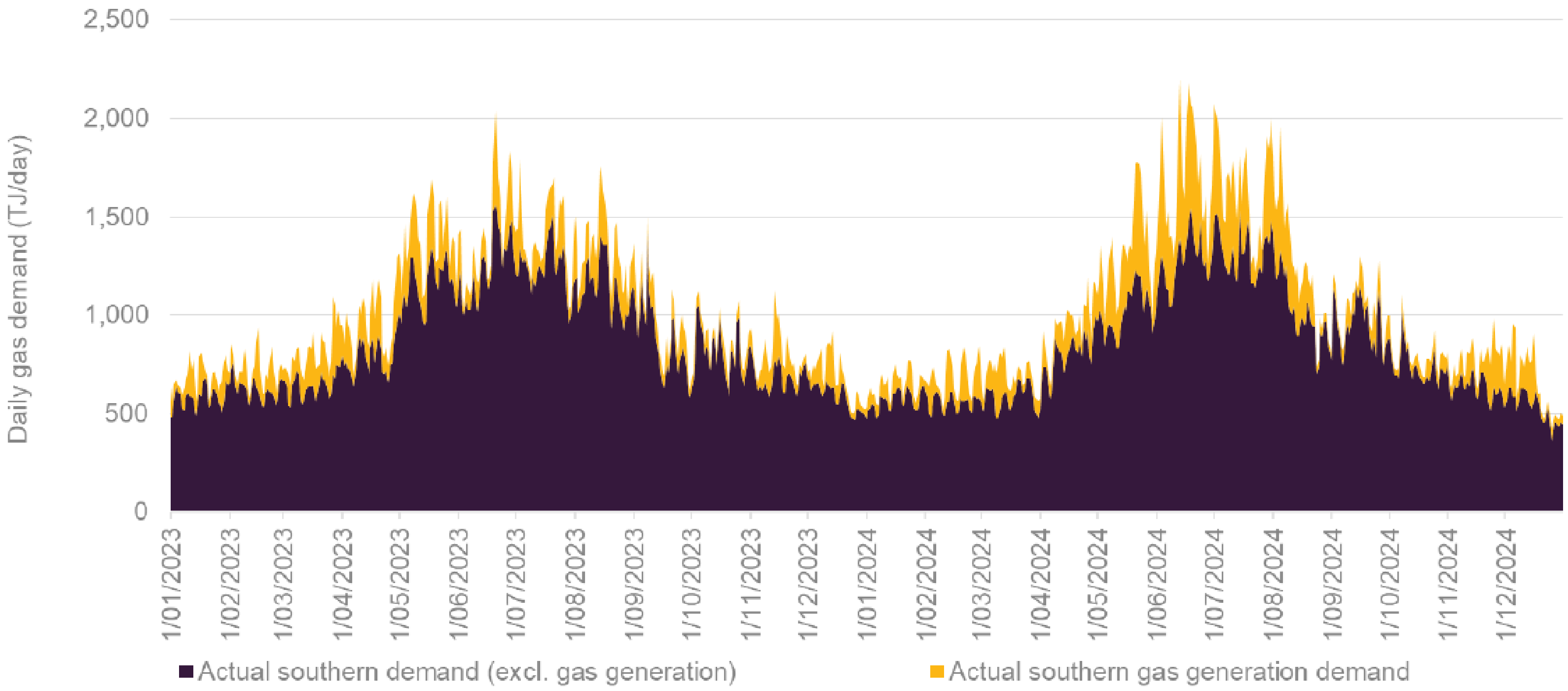
Total pipeline capacity south from Moomba is 814 TJ/d



Southern states variable gas use

- Residential, commercial and industrial demand ranges from 500 to 1,500 TJ/d
- Gas generation exceeds 500 TJ/d
- Victorian winter record of 354 TJ in 2024

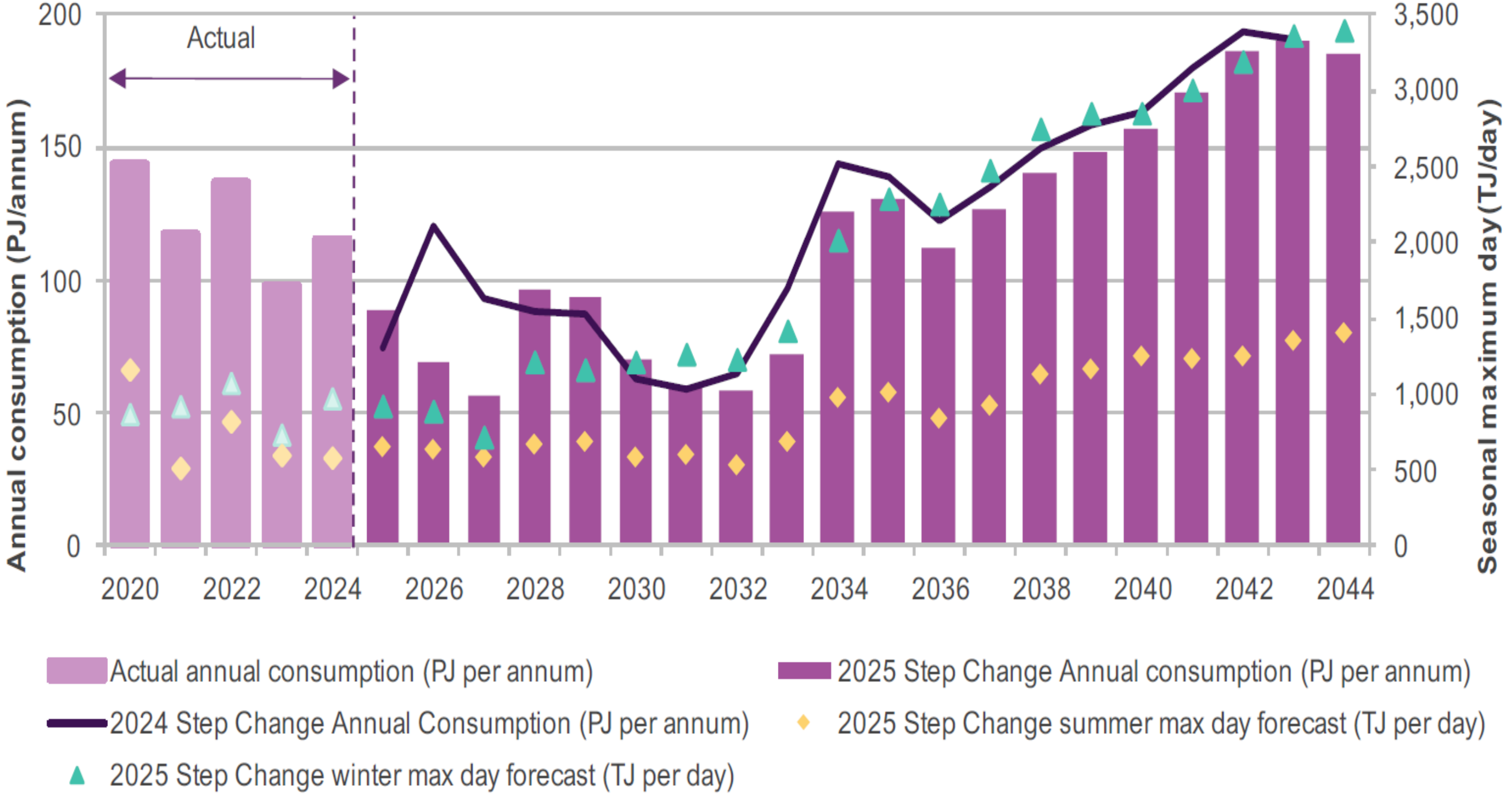
Figure 20 Actual domestic daily gas demand in southern regions from January 2023 to December 2024, showing seasonality and peakiness (TJ)



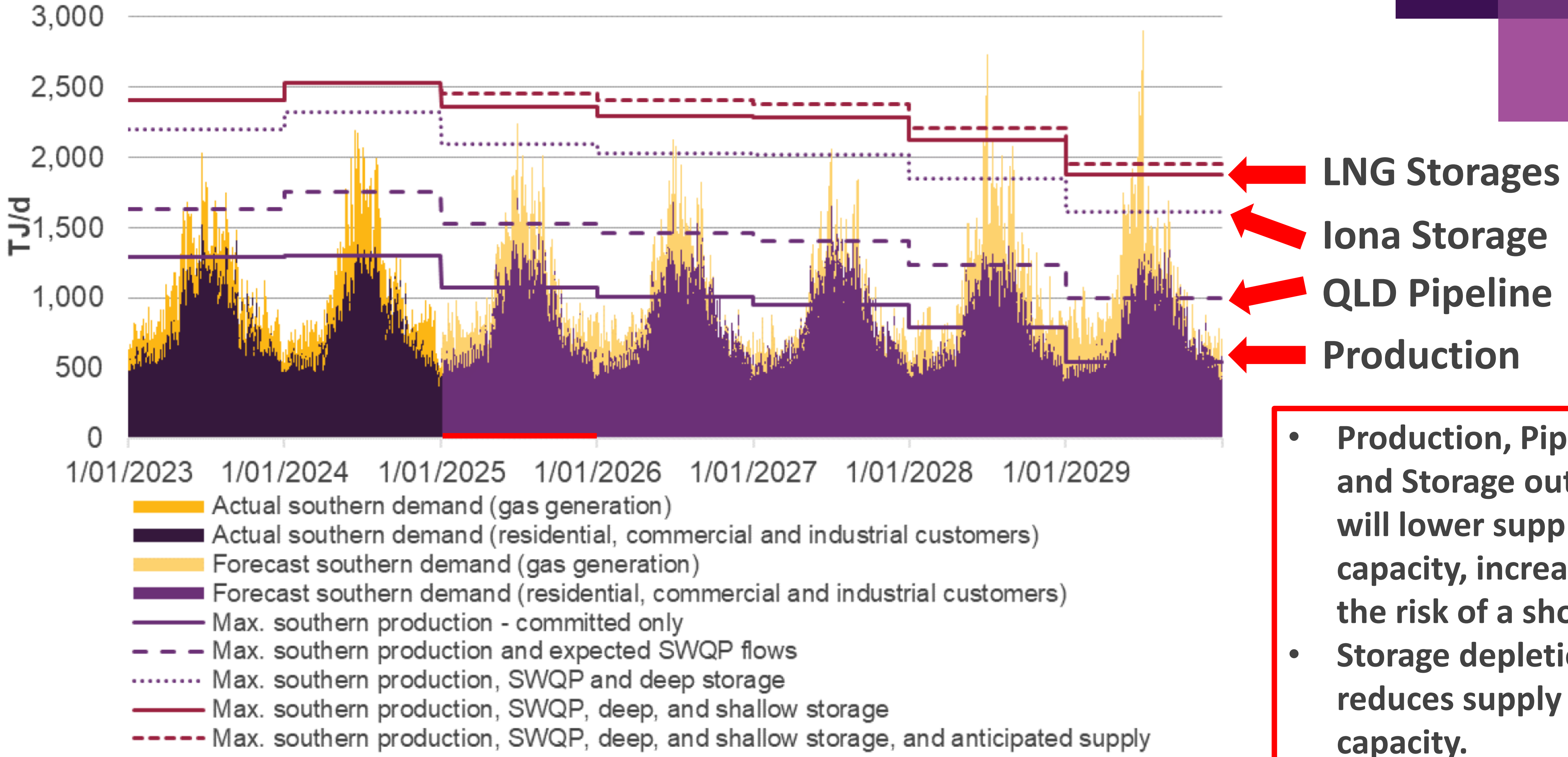
Impact of GPG demand growth

- GPG consumption is trending down
- Winter GPG demand is flat, while summer demand is decreasing
- A large increase in winter GPG demand is forecast for the days when back-up generation is required

Actual and forecast NEM and Northern Territory gas generation annual consumption (PJ/y) and seasonal maximum daily demand (TJ/d), Step Change scenario, 2020-44



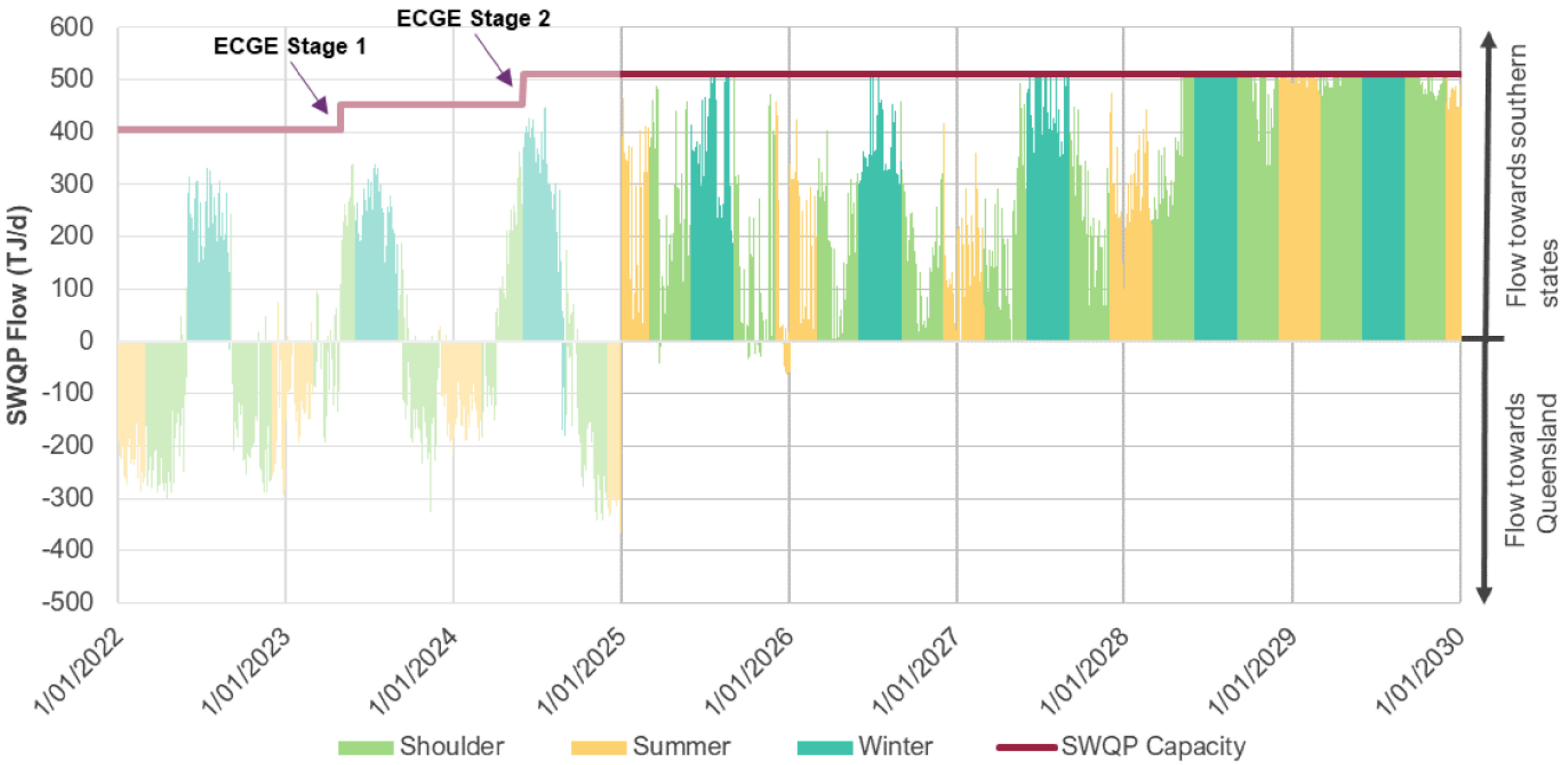
GPG Supply Adequacy – East Coast



- **Production, Pipeline and Storage outages will lower supply capacity, increasing the risk of a shortfall.**
- **Storage depletion reduces supply capacity.**

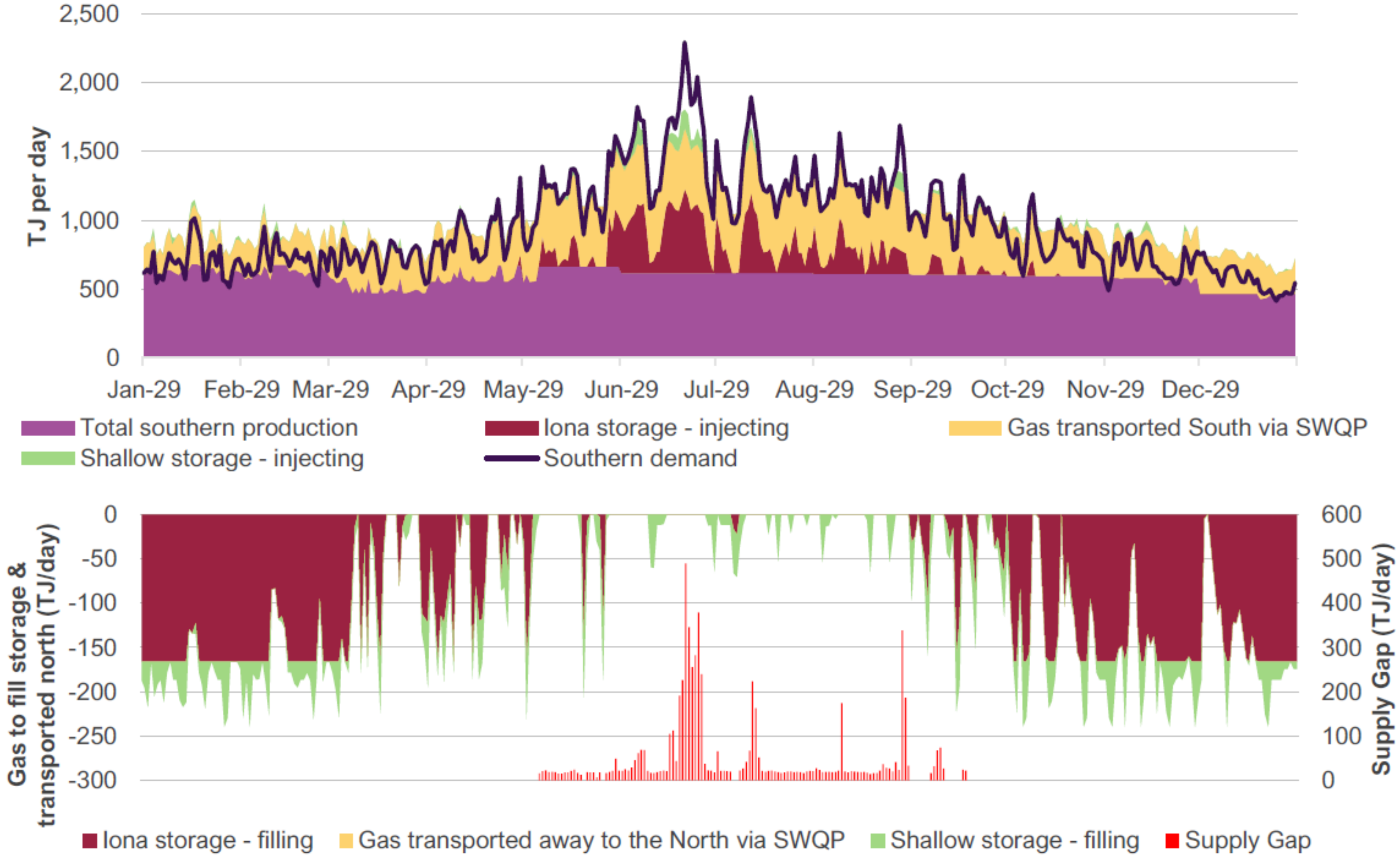
Increasing SWQP utilisation

Actual (2022 to 2024) and projected (2025 to 2030, reference year 2018, Step Change) gas flows along the SWQP (TJ/d) – positive flows are southbound

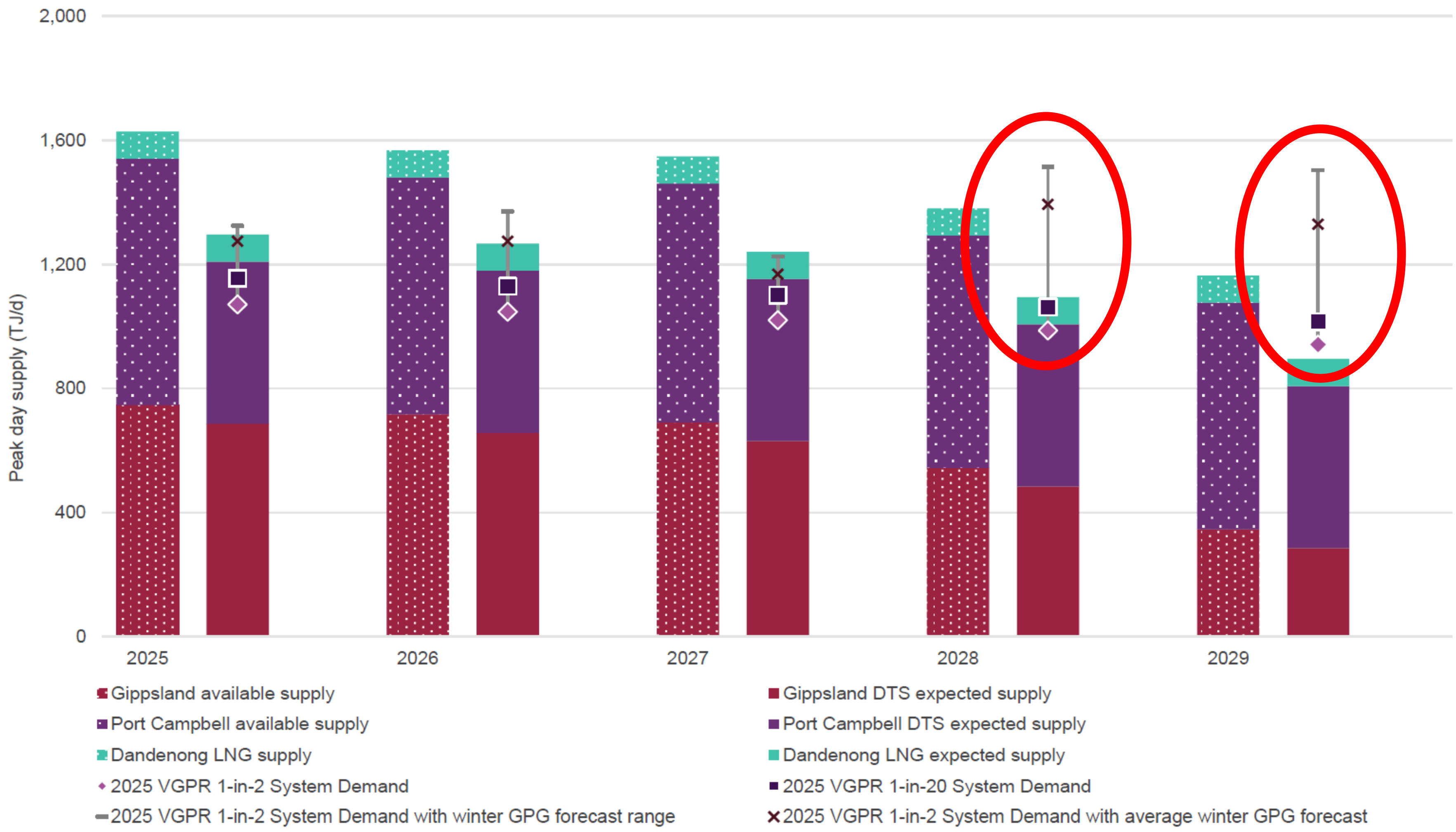


Forecast 2029 southern states shortfall

Figure 40 Forecast gas supply sources to meet southern daily demand, *Step Change* scenario, 2029 (TJ/d), (2019 reference year)



Victorian forecast peak day supply adequacy, 2025 to 2029 (TJ/d)

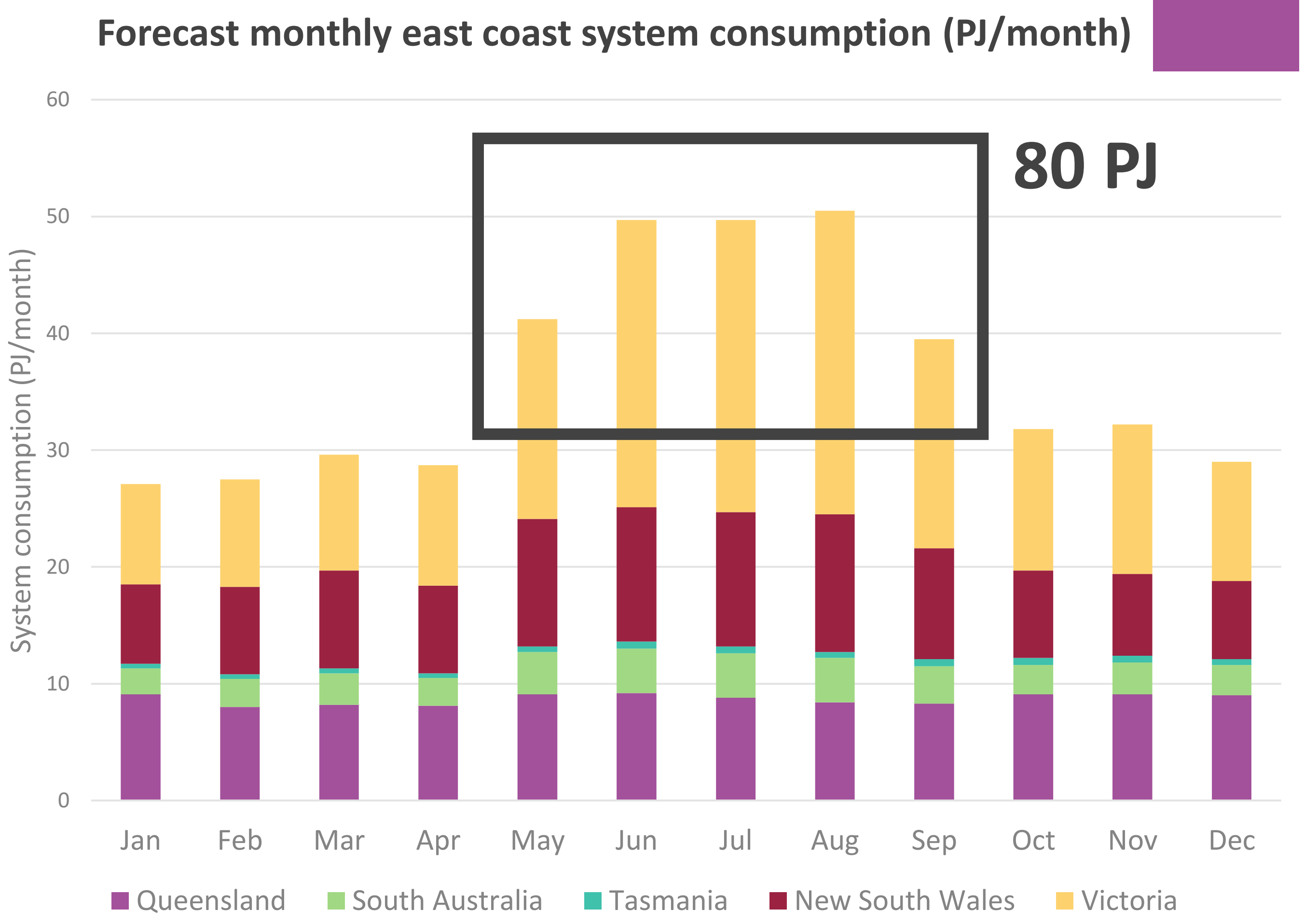


New gas supply projects

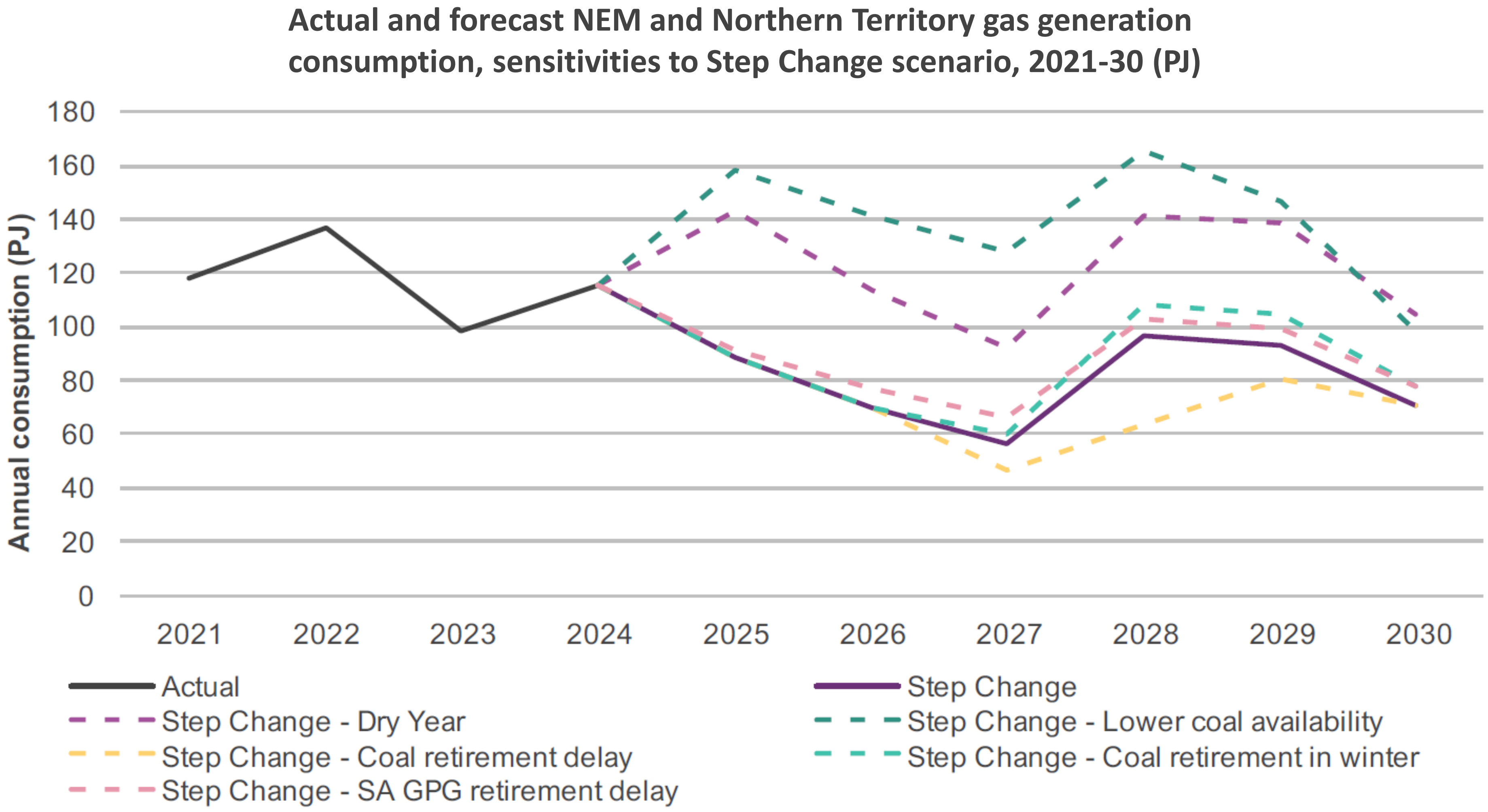
- Production
  - Longford Kipper and Turrum, Golden Beach (mainly storage)
  - Proposed Otway Basin – Annie connection, exploration prospects
- Storage
  - Iona HUGS expansion(s), Golden Beach
  - Pipeline storages – Kurri Kurri, Riverina Storage Pipeline
- Pipeline expansions
  - East Coast Gas Grid expansions including Bulloo Interlink
  - SWP expansion from Port Campbell
- LNG receiving terminals
  - Many proposed, pipeline expansions deliver supply capacity increases

Seasonal adequacy

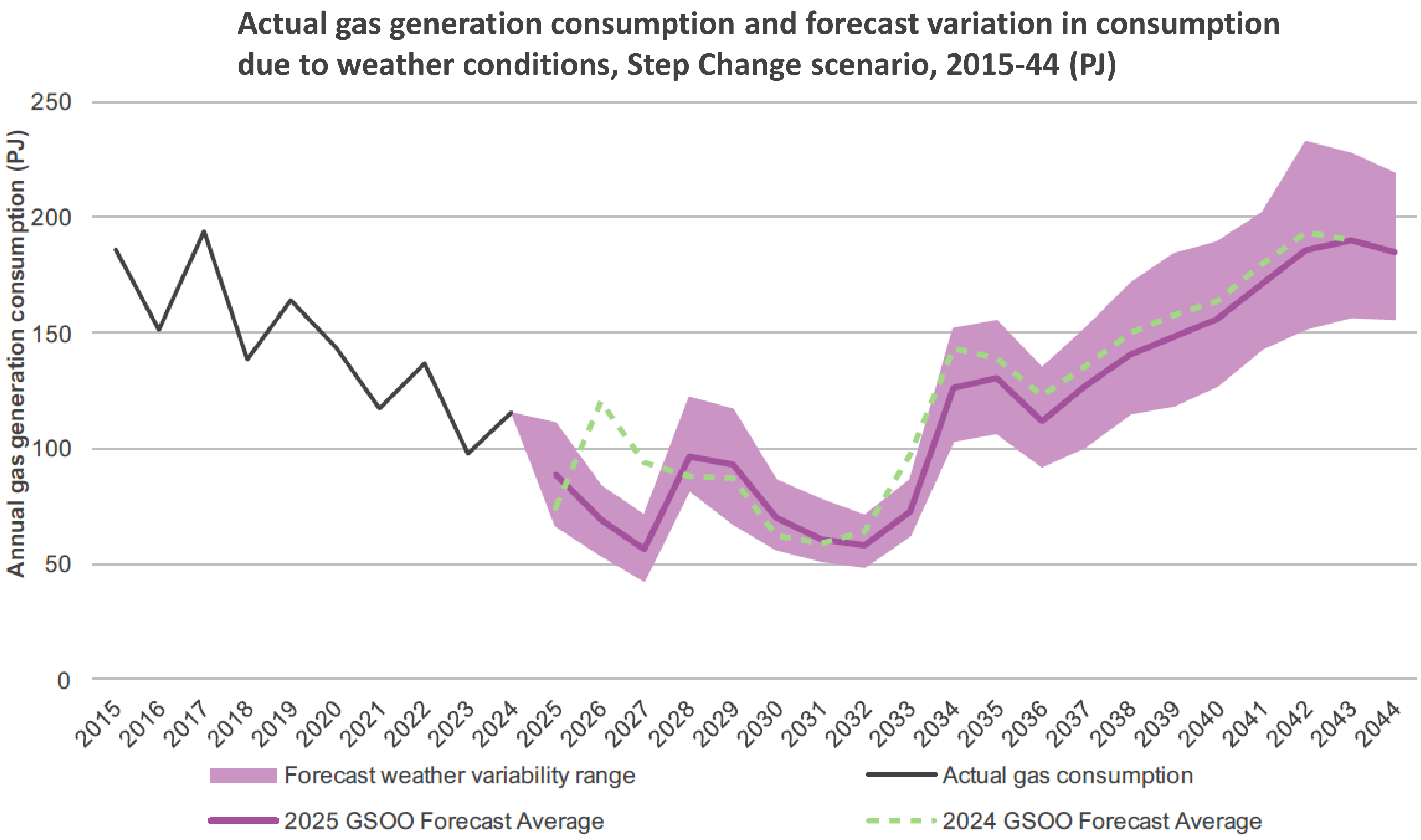
- Heating load in colder states (Victoria, NSW, SA) drive a large increase in demand during winter months, resulting in approx. 80 PJ of seasonal demand for winter
- Winter GPG typically adds another 10 PJ of winter gas consumption
- Risk is winter consumption exceeding seasonal supply



Variation of GPG demand due to coal and hydro availability



Weather induced variation of GPG demand



Proposed solutions

- The GSOO forecasts a structural gas supply gap from winter 2029.
- The GSOO has assessed three supply solutions that would address the forecast annual shortfall through to winter 2033:
  - Increased southern production
  - Increased pipeline capacity and supply from northern Australia
  - Development of an LNG receiving terminal with pipeline expansions
- All options require increased gas storage capacity including pipeline capacity increases to prevent seasonal and peak day shortfalls.

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