

# WA Gas Consultative Forum

Presented by

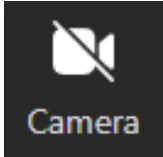
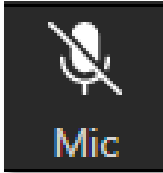
Kate Ryan, Executive General Manager – Western  
Australia and Strategy



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

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

# Online housekeeping



- Please mute your microphone during the presentation.
- Please leave your camera off as well, but we'd love to see you during Q&A.
- We will pause regularly to give you time to comment in the chat or raise your hand to ask a question.
- We have a Q&A session at the end of today's session. Some questions may be saved for this session.
- A copy of the presentation will be published on our forum webpage: [WA Gas Consultative Forum](#)
- We welcome feedback via [WAgasforum@aemo.com.au](mailto:WAgasforum@aemo.com.au)

# Agenda

## WA Gas Statement of Opportunities findings and review of 2023

- Background
- Forecasting approach
- Key findings
- Summary of findings
  - Gas demand
  - Gas power generation
  - Potential gas supply
  - Supply-demand balance
  - Options to mitigate shortfalls
- Stakeholder engagement
- Gas Bulletin Board (WA) – Year in review 2023

# WA 2023 Gas Statement of Opportunities



Kate Ryan, Executive General Manager WA & Strategy

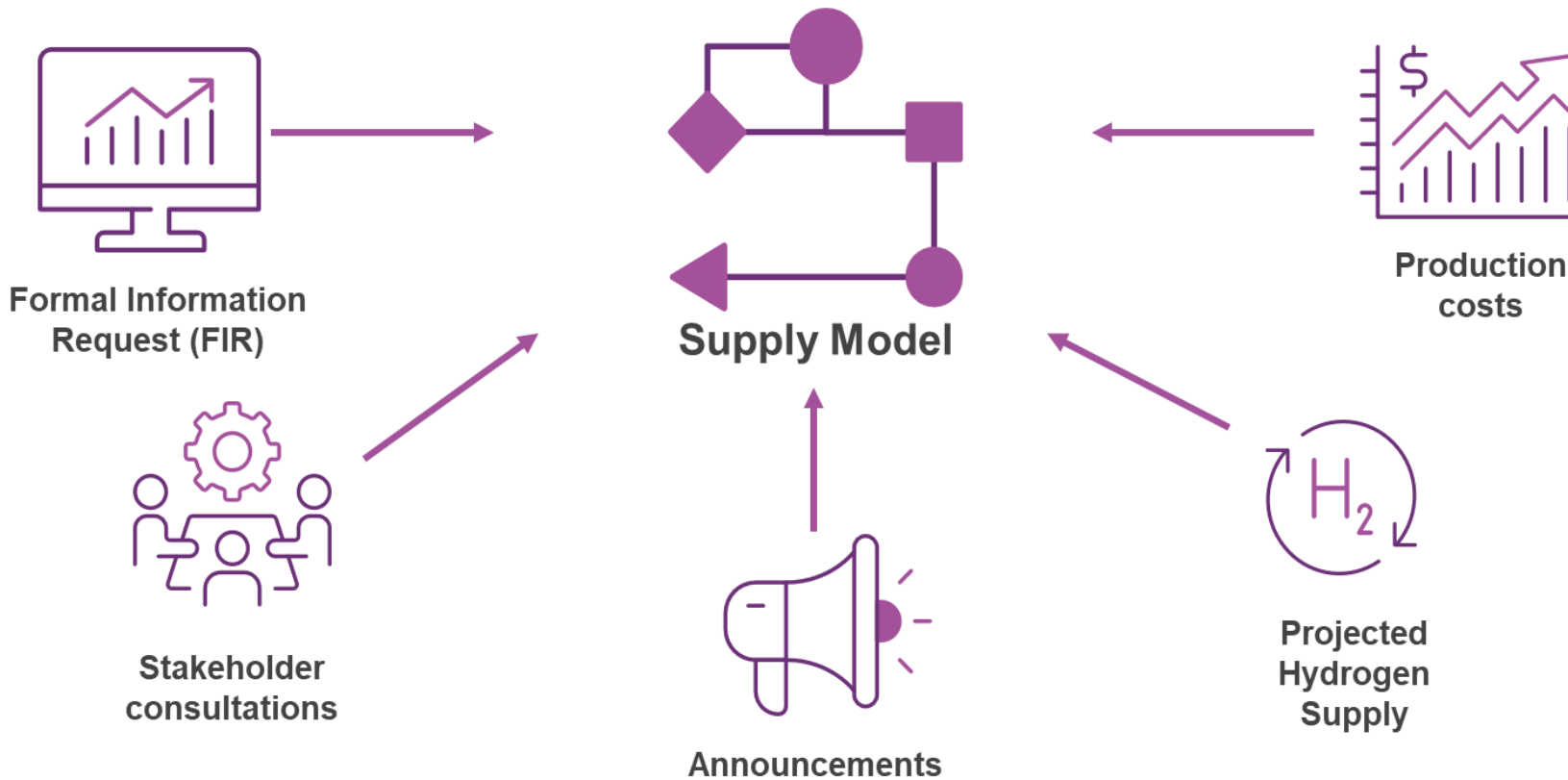


# Background

- The 2023 WA GSOO presents AEMO's assessment of the WA domestic gas market for the 10-year outlook period 2024 to 2033.
- It presents forecasts of WA's domestic gas demand and potential gas supply for Low, Expected and High scenarios, and an overview of gas infrastructure and emerging issues that affect Gas Market Participants and other stakeholders.
- It is released during a critical phase of WA's energy transition.
  - Gas-powered generation will play a critical 'firming' role, supporting the transition to a majority-renewables power system.
  - The 2023 WEM ESOO\* forecasts strong growth in electricity demand, driven by electrification, electric vehicle uptake, and new energy-intensive industries including green hydrogen production.

\* Wholesale Electricity Market (WEM) Electricity Statement of Opportunities (ESOO). Report is available on [AEMO's website](#).

# Forecasting approach | Potential supply forecast



Potential WA domestic gas supply is:

- Gas that could be made available to the WA domestic market given forecast prices and production costs, capped by the availability of processing capacity and gas reserves.
- It does not project how much gas will be produced, but how much could be produced.

# Forecasting approach | Demand scenarios

The forecasting scenarios underpinning the 2023 WA GSOO are aligned to AEMO's 2023 Inputs Assumptions and Scenarios Report (IASR). Electricity Demand and Consumption forecasts from the 2023 WEM ESOO have been used for each scenario in modelling Gas Powered Generation for the SWIS:



## **Low scenario** (*Progressive Change*):

- Reduced economic growth and reduced demand for Commodities.
- Additional use of gas prior reflecting slower transition to renewables.



## **Expected scenario** (*Step Change*):

- Rapid energy transformation that supports Australia's contribution to limiting global temperature rise to below 2°C compared to pre-industrial levels.
- A high level of active consumer participation and significant investments in distributed energy resources to drive the decarbonisation of Australia's economy.
- Growth in electrification across both the business and residential sectors.



## **High scenario** (*Green Energy Exports*):

- Very strong decarbonisation efforts both domestically and globally to limit temperature increase to 1.5°C.
- Rapid transformation of Australia's energy sectors and a strong emphasis on electrification.



# 2023 WA GSOO | Key findings

AEMO has identified increasing need for investment to bring additional gas supply into the WA domestic market.

## **Over the outlook period of 2024 – 2033:**

- A deficit is forecast between 2024 and 2029, with potential supply from committed and expected projects up to 11% below forecast demand.
- From 2030 onwards, further gas supplies are forecast to be required to meet increasing demand.
- This outlook broadly aligns with the 2022 WA GSOO outlook, which identified tight supply/demand conditions.
- The timing and scale of new supply sources introduces significant uncertainty into AEMO's projection of supply adequacy.
- The WA 2023 GSOO reaffirms the critical role of gas in supplying WA's energy needs, including supporting the transition to net zero.

# 2023 WA GSOO | Key findings

The outlook has three distinct phases

## 2024-2026

Potential gas supply is forecast to be 105 PJ short of domestic demand. Additionally, flexibility is minimal – gas supply facilities are running close to, or at, capacity.

## 2027-2029

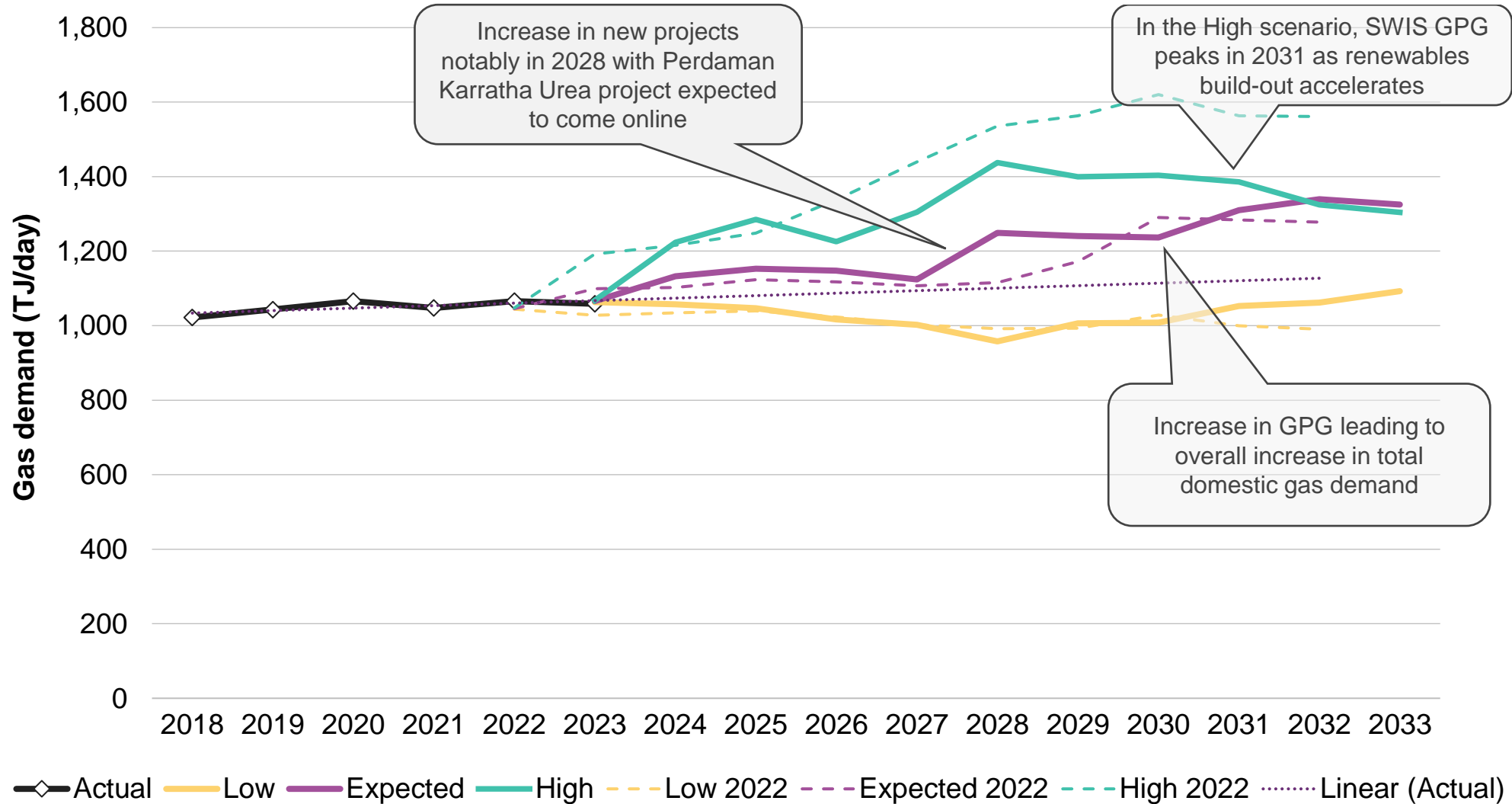
Supply is forecast to grow as Scarborough, South Erregulla, Lockyer Deep, and Waitsia are expected to enter the domestic market. Demand continues to decline (due to decarbonisation) until 2027, but then steps up in 2028 as the Perdaman Karratha Urea project begins production. The market is short of 31 PJ in this period.

## 2030 onwards

The gas market is forecast to move into an increasing deficit, with deficits of over 100 TJ/day from 2031 (over 10% of demand each year). This is driven by coal retirements increasing the need for gas generation and a decline in production from existing gas fields, partially offset by increased renewable power generation and decarbonisation across the economy.

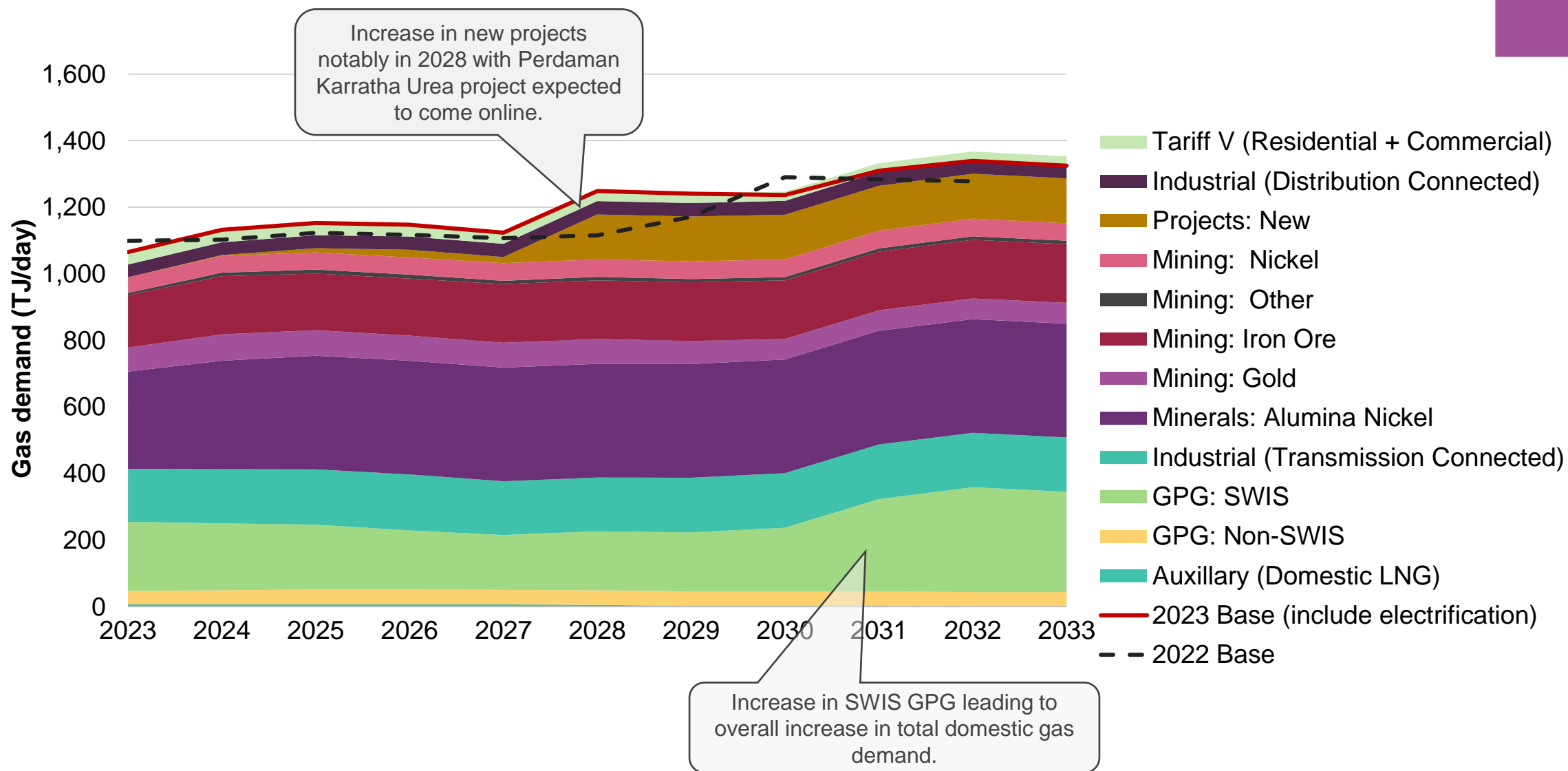
# Summary of findings

# Gas demand – all scenarios

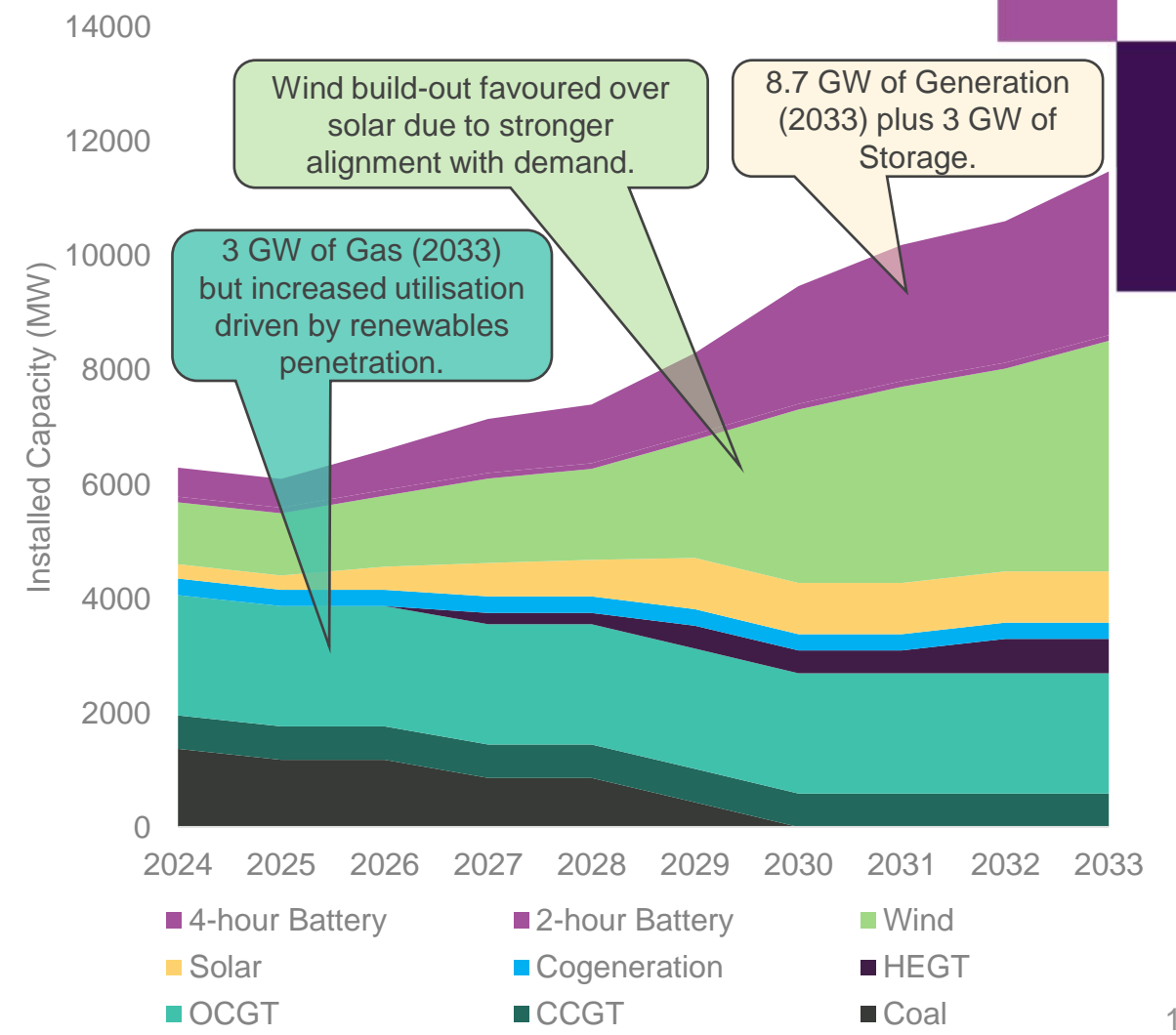
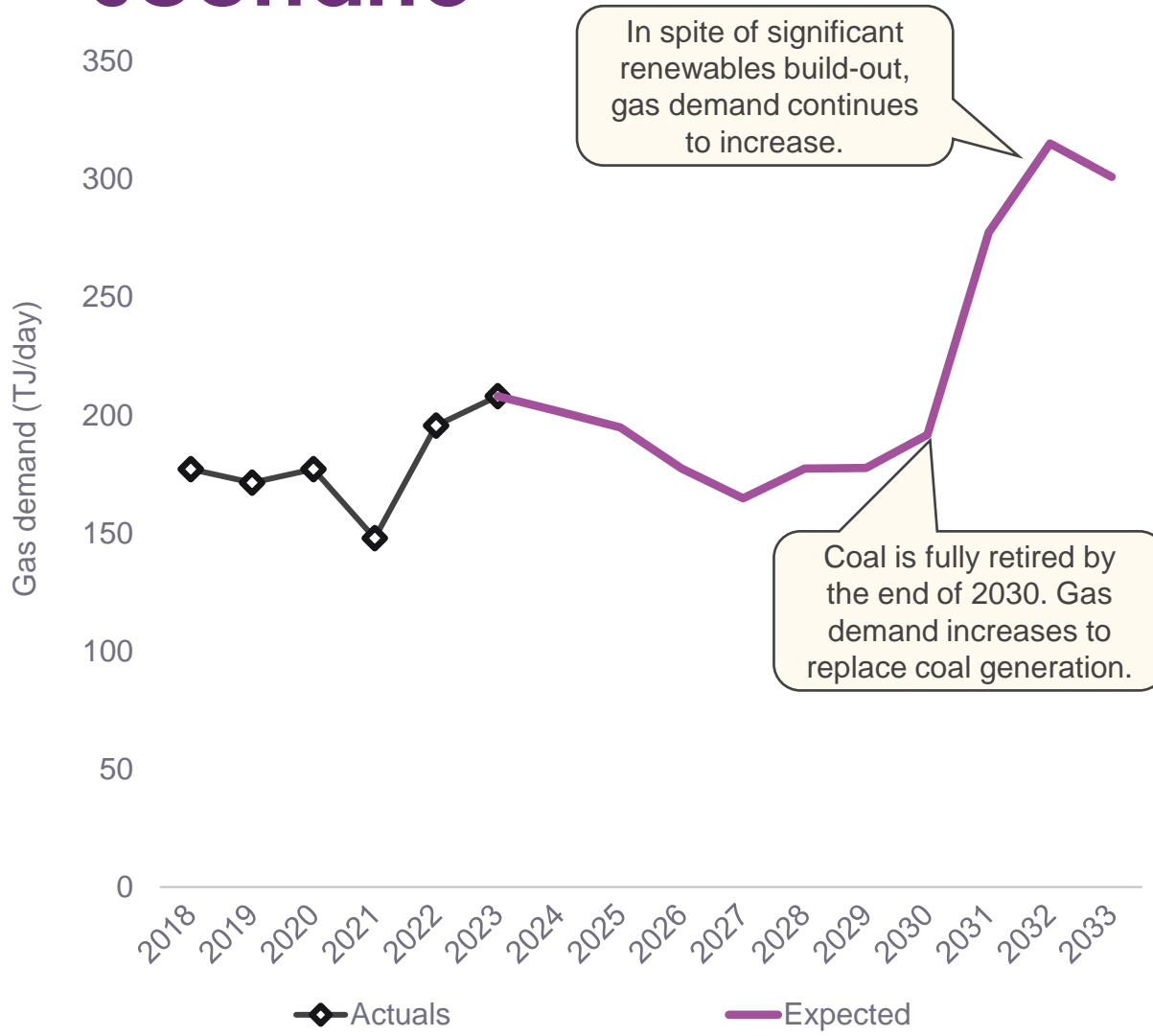


# Gas demand – Expected scenario

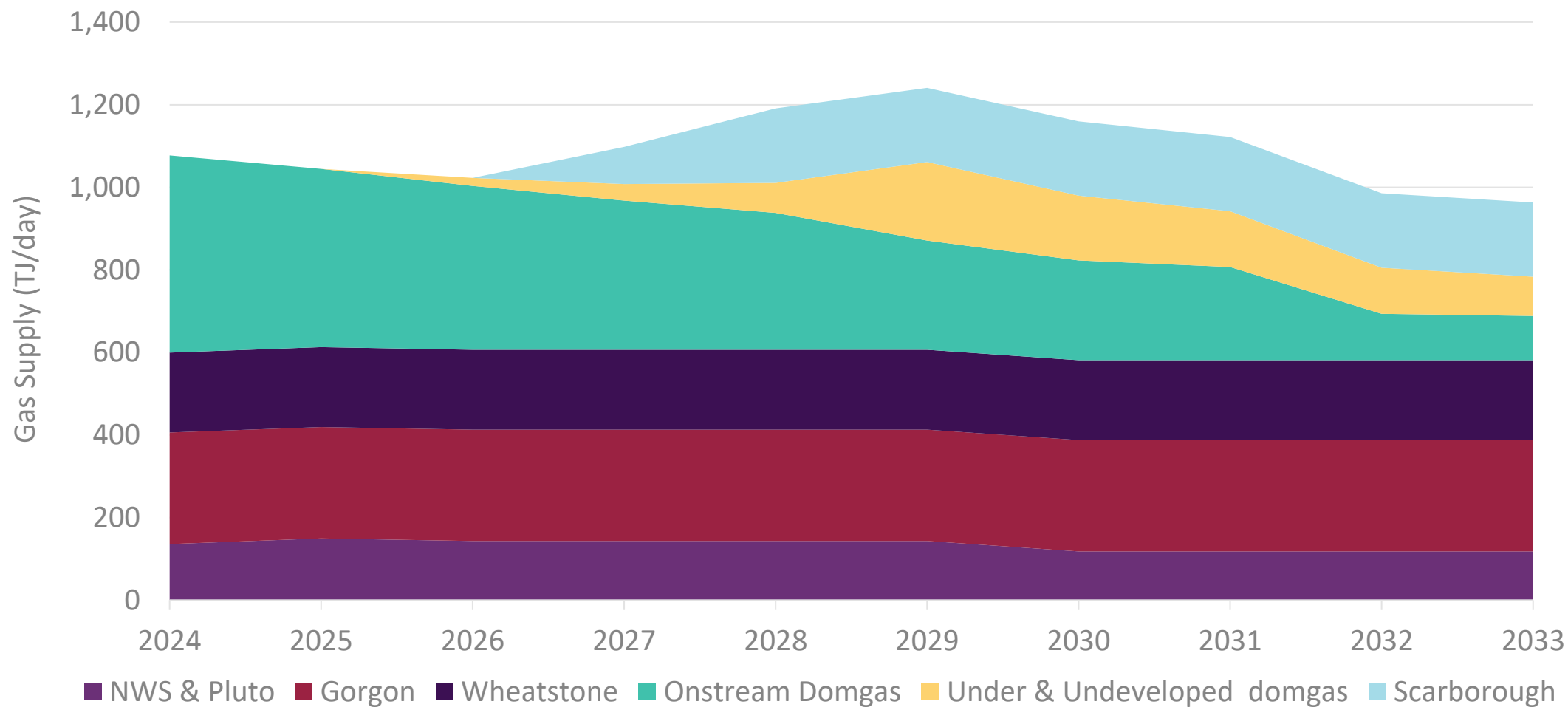
Increases driven by new projects and SWIS GPG



# Gas powered generation – Expected scenario

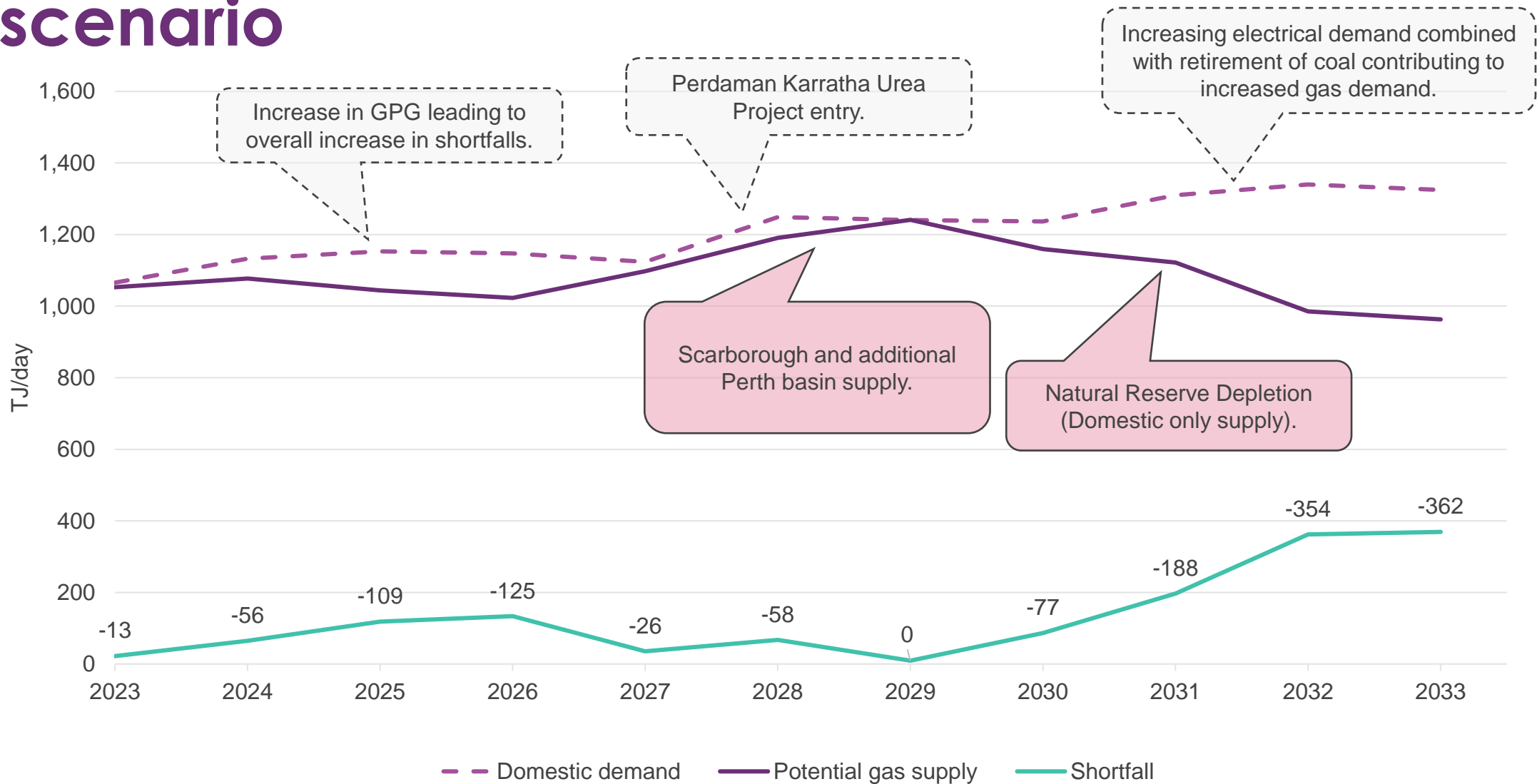


# Potential gas supply\* – Expected scenario



\*Includes prospective gas supply projects: no FID but expected to be developed during the outlook period given forecast LNG/domestic gas prices.

# Supply demand balance – Expected scenario





# Mitigating shortfalls – options

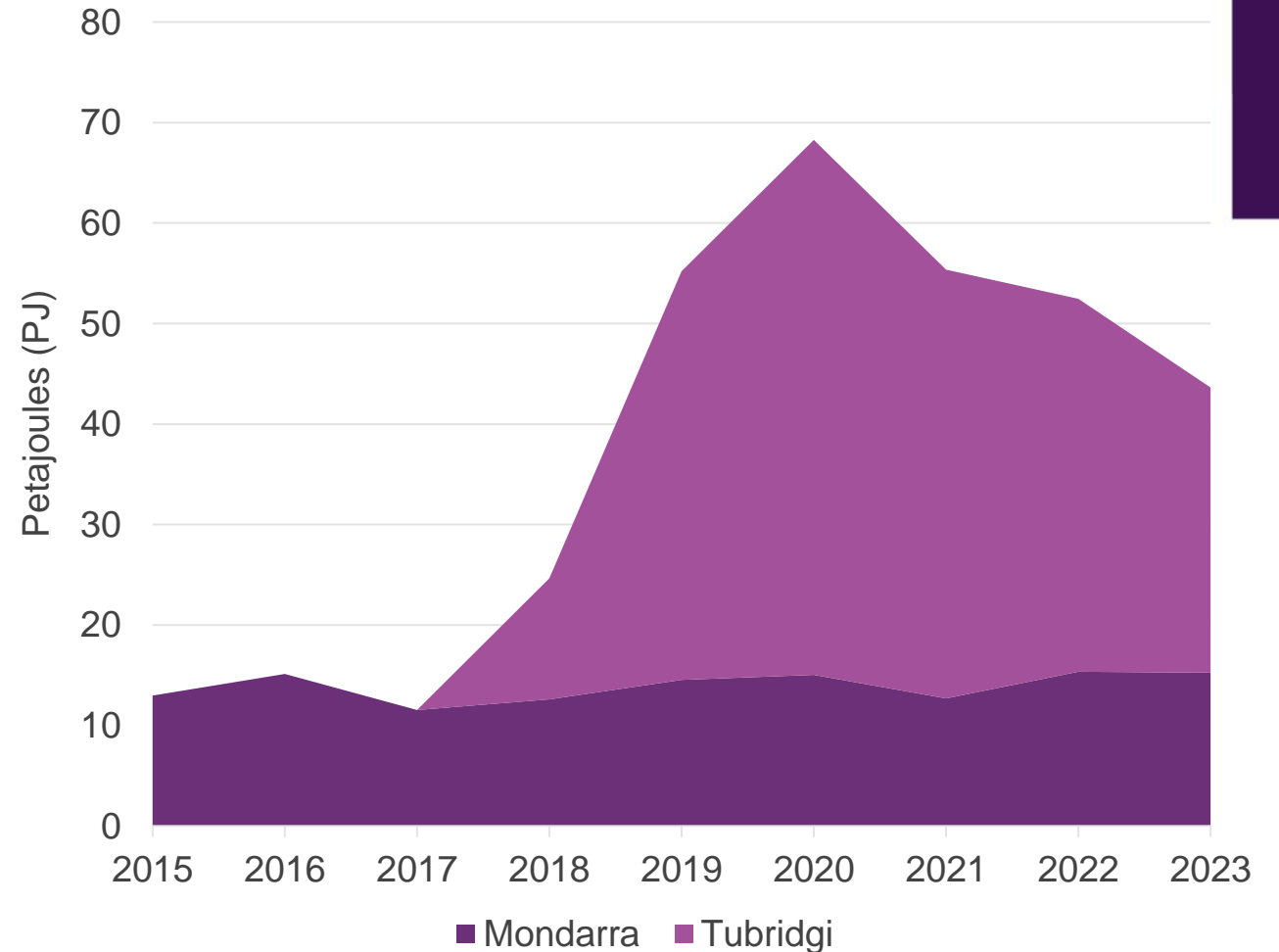
## Short Term:

- Withdrawals from storage. WA has around 42 PJ of gas in storage, which can deliver gas at up to 210 TJ/day (actual annual average extraction has been 22 TJ/Day).
- Uncontracted liquefied natural gas (LNG spot cargoes) could be diverted from the export market into the domestic market.

## Longer Term:

- Development of gas fields that are not currently included in the gas supply forecasts.
- Large gas users transitioning more rapidly to lower emissions electricity sources.
- Large industrial gas users reducing consumption.
- Rapid transition of the power system to firmed renewables.

Gas storage in WA: 2015 to October 2023



# Stakeholder engagement

Stakeholder consultation throughout the year is critical for the development of the 2023 WA GSOO.

- Formal information requests to Gas Market Participants.
- The Five-Year Review of the WA GSOO was published in October 2023, AEMO has integrated the following recommendations in this report:
  - Stronger alignment between WEM ESOO and WA GSOO, consistent scenarios and electricity forecasts
  - Clearer methodology for inclusion of supply projects and DMO/LNG assumptions
  - Increased consideration of the role of storage and networks in gas supply
- Gas Consultative Forum, Forecasting Referencing Group and Gas Advisory Board (GAB) committee meetings throughout the year.
- Formal and informal meetings with key stakeholders including:
  - Gas buyers, sellers and shippers
  - Market Participants and non-Market Participants
  - WA Department of Jobs, Tourism, Science and Innovation





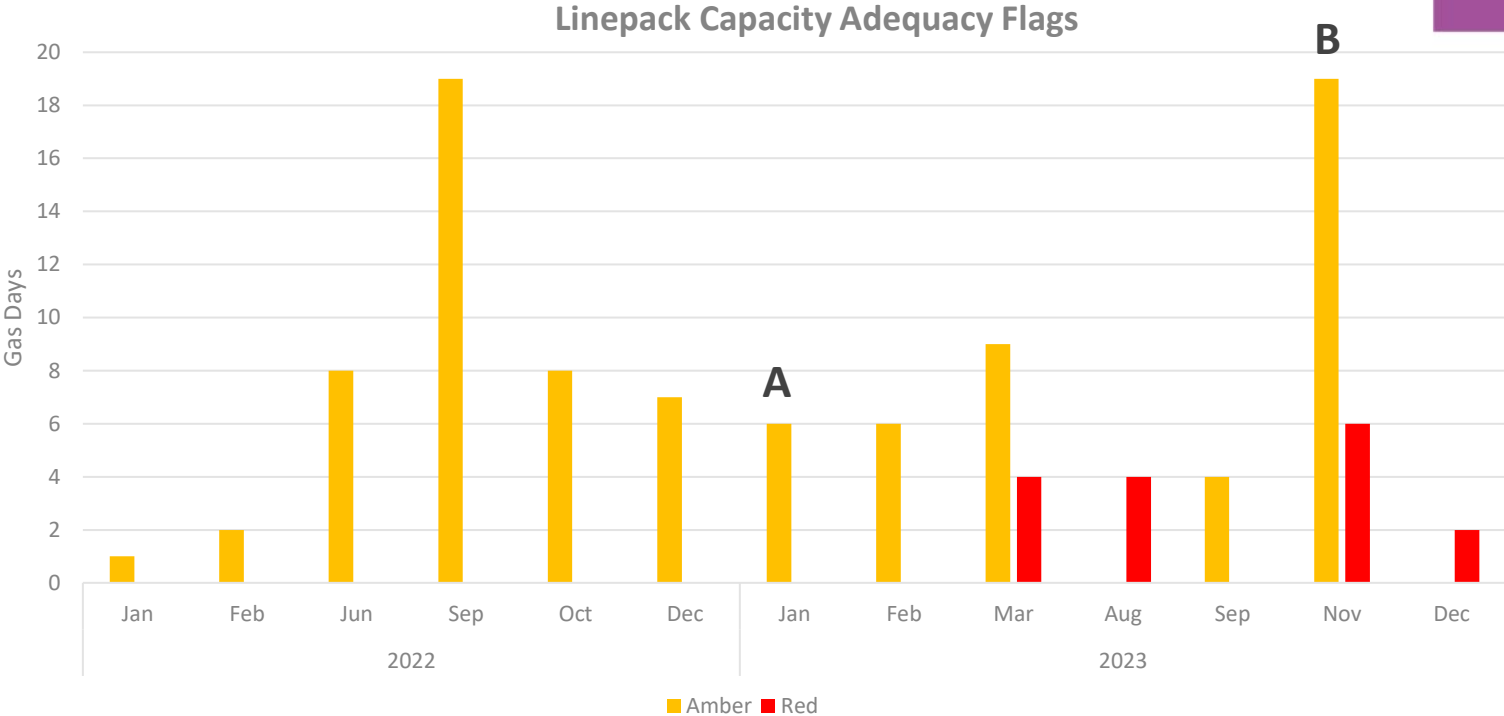
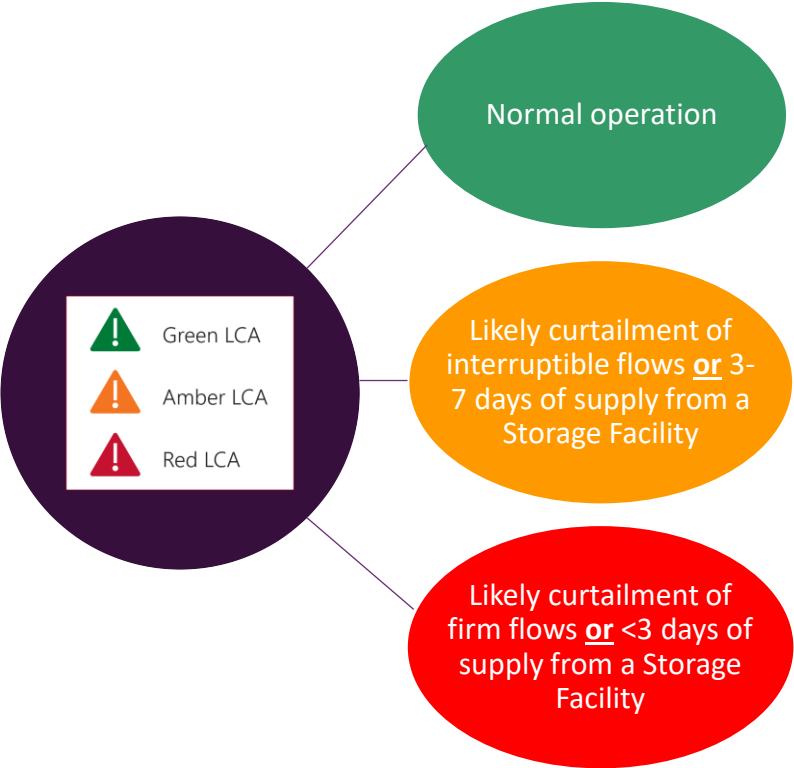
# Gas Bulletin Board (WA) 2023 in review

Presented by Rick Dolling - Manager, WA Real-Time  
Market Monitoring



# 2023 Observations

## Linepack Capacity Adequacy



- A Amber LCAs on the DBNGP in January relate to the gas supply disruption and subsequent EMF event (discussed on following slides).
- B Large increase in Amber LCAs in November 2023 are due to maintenance works on the PGP and GGP.
- C Red LCAs relate to technical issues at GGP, PGP and Mondarra.

# Gas Supply Disruption: Overview

## Thursday 5<sup>th</sup> January

### Afternoon:

Wheatstone gas production facility experienced an unplanned outage.

~215 TJ/day capacity removed from the WA gas market.

Existing facilities technical constraints had already reduced capacity by 445 TJ/day.

## Friday 6<sup>th</sup> January

### Morning:

Linepack on the DBNGP had further deteriorated and was still dropping. ~10 hours remained.

The Coordinator of Energy (CoE) triggered the energy supply disruption hazard plan and established an OAMT.

## Saturday 7<sup>th</sup> January

### Morning:

Linepack was still critical but was no longer deteriorating.

OAMT confirmed further voluntary actions available to improve situation.

## Sunday 8<sup>th</sup> January

### Morning:

Linepack was improving and sufficient buffer was available to run at current rates until Wheatstone returned to service.

### Evening:

Linepack on the DBNGP approached critical levels and was deteriorating. ~14 hours of linepack remained.

AGIG submitted an Amber LCA in the GBB (WA) for the DBNGP and notified AEMO.

AGIG initiated actions to reduce imbalances on the pipeline.

### Afternoon:

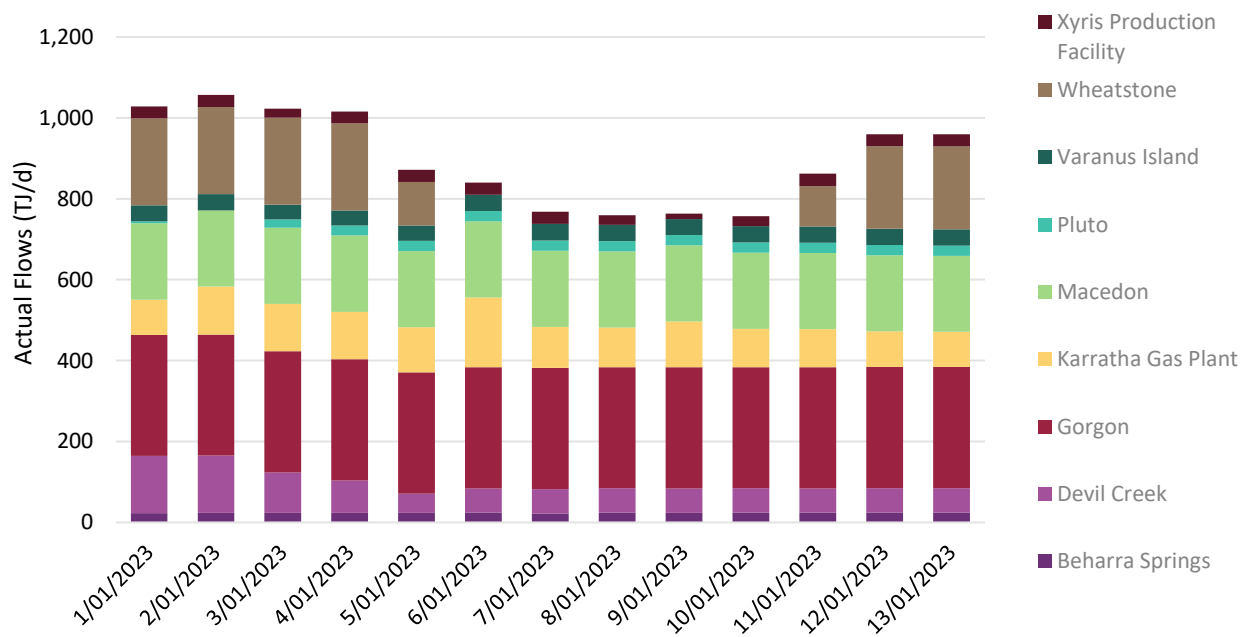
The CoE sought voluntary responses from gas market participants.

The CoE activated the GBB (WA) EMF.

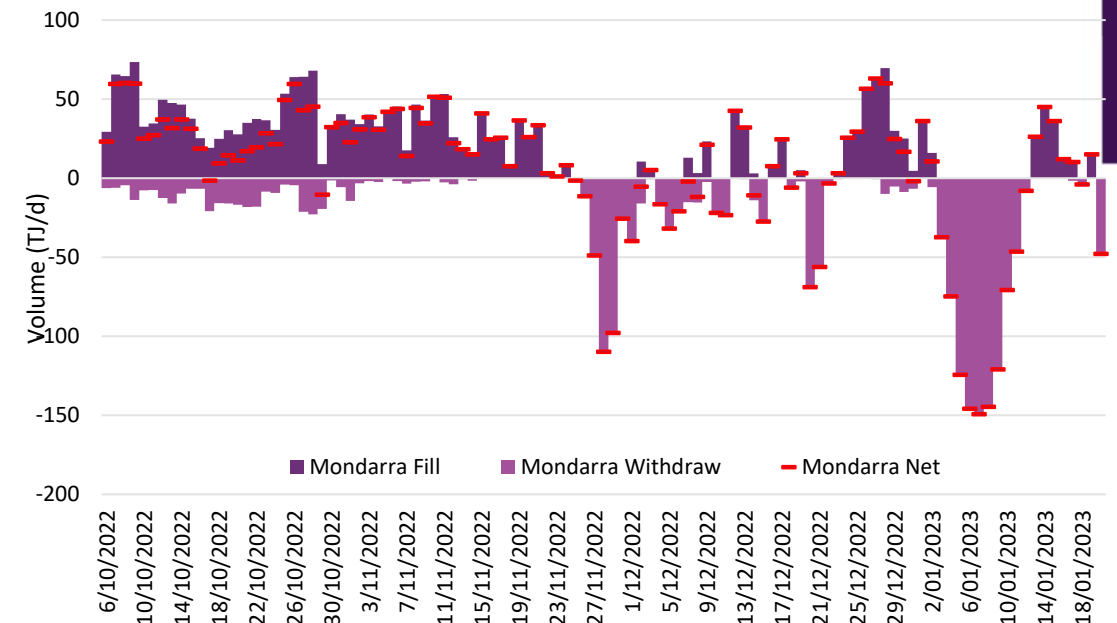
AEMO issued communications on data submission requirements and started engaging stakeholders.

# Gas Supply Disruption: Production & Storage Response

### Daily Gas Production by Facility



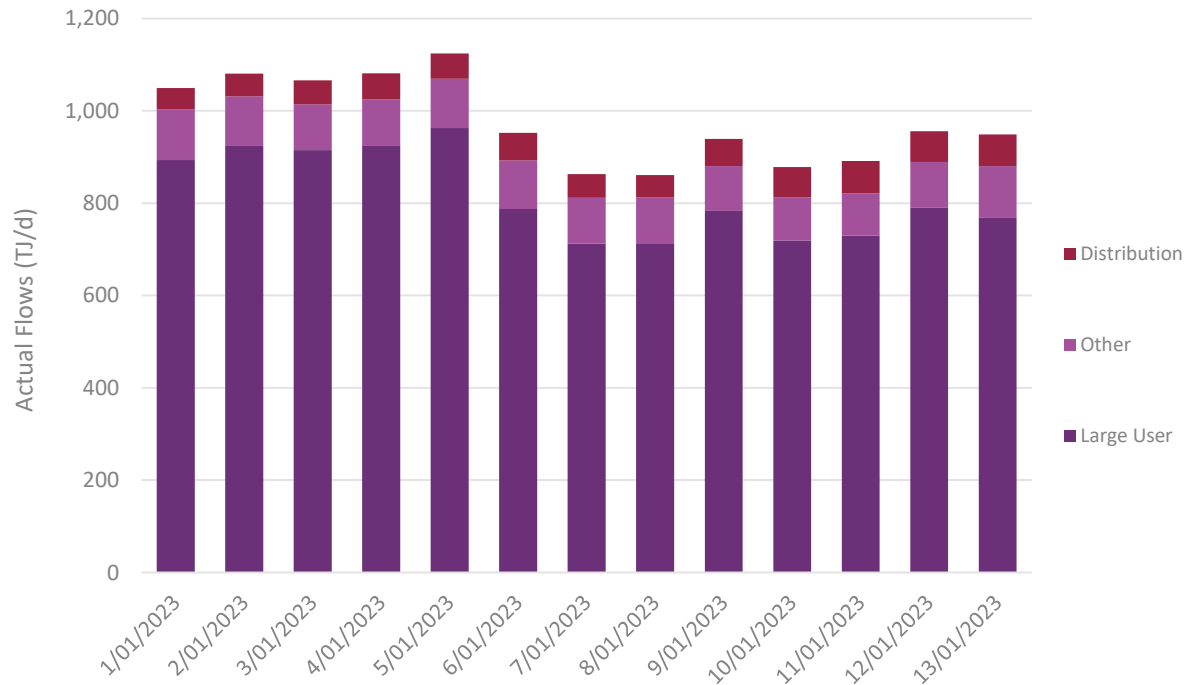
### Mondarra Storage Facility Daily Gas Flows



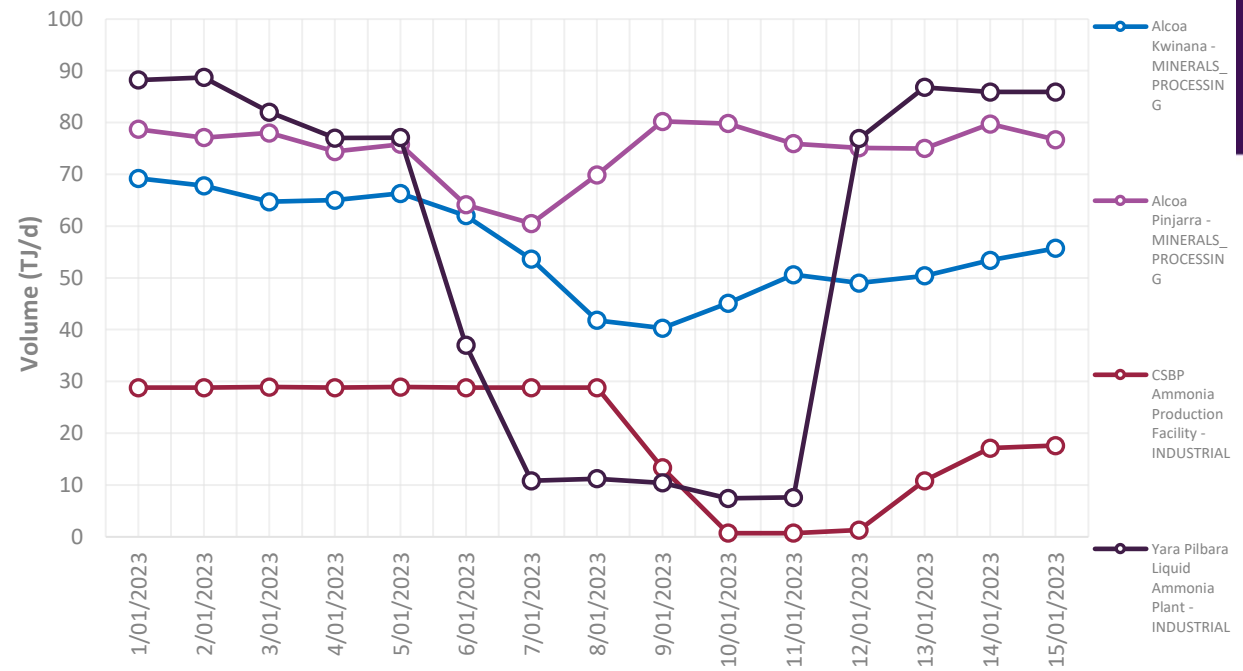
- A**
  - Varanus Island (300 TJ/day) and Devil Creek (220 TJ/day at the time) experienced constrained output due to technical limitations, reducing gas production availability by 445 TJ/day collectively.
  - Wheatstone (Light Brown) outage commenced during the day of 5<sup>th</sup> January 2023, therefore showing a reduced production on this day.
  - The facility progressively restarted, returning to full output on 13<sup>th</sup>.
- B**
  - Production facilities such as KGP (Yellow) increased production above nominations to support the pipeline on 6<sup>th</sup> but could not maintain output due to LNG commitments.
- C**
  - Withdrawals from Mondarra Storage Facility began to ramp up on the day of the Wheatstone outage and remained close to a maximum withdrawal rate (150 TJ/day) between 6 January 2023 and 8 January 2023.
  - On 13 January 2023, the day after the EMF was deactivated, injections to Mondarra recommenced.

# Gas Supply Disruption: Consumption Response

### End User Consumption



### Large User Consumption

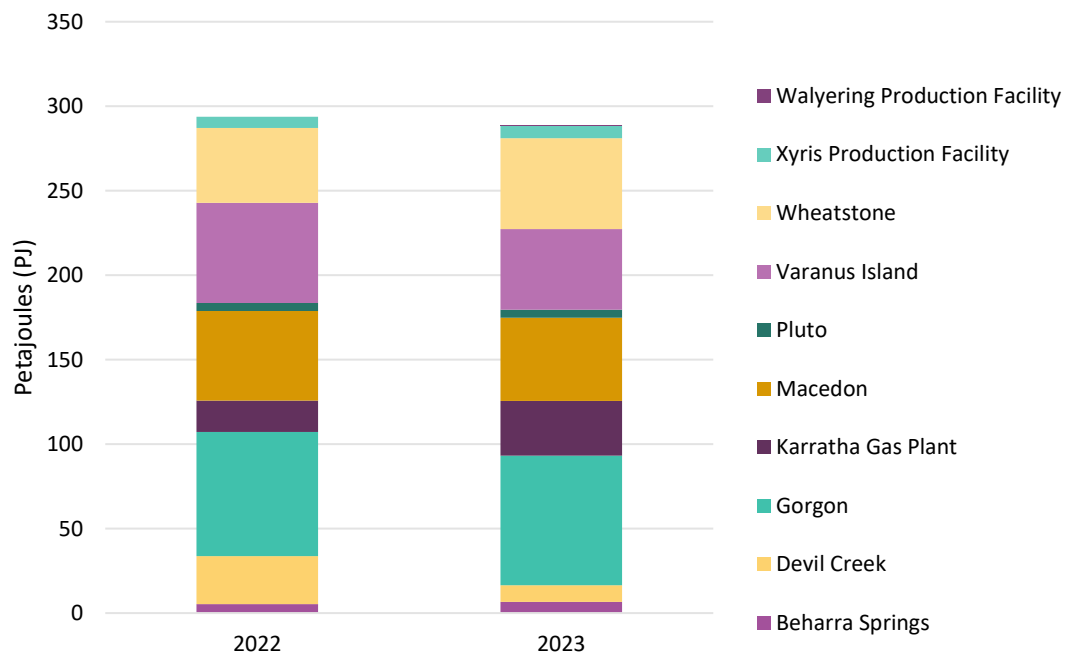


- A Distribution to the domestic supply network and other users remained stable across the EMF period while consumption by Large Users decreased significantly.
- B Yarra Pilbara Liquid Ammonia Plant responded on 6<sup>th</sup> and were able to significantly reduce consumption over period by shutting down operations.
- C Alcoa Kwinana and Alcoa Pinjarra each began to reduce consumption from 6<sup>th</sup> by switching to alternative fuel sources. Alcoa increased consumption at several sites after the situation stabilised due to the high cost of running on diesel.

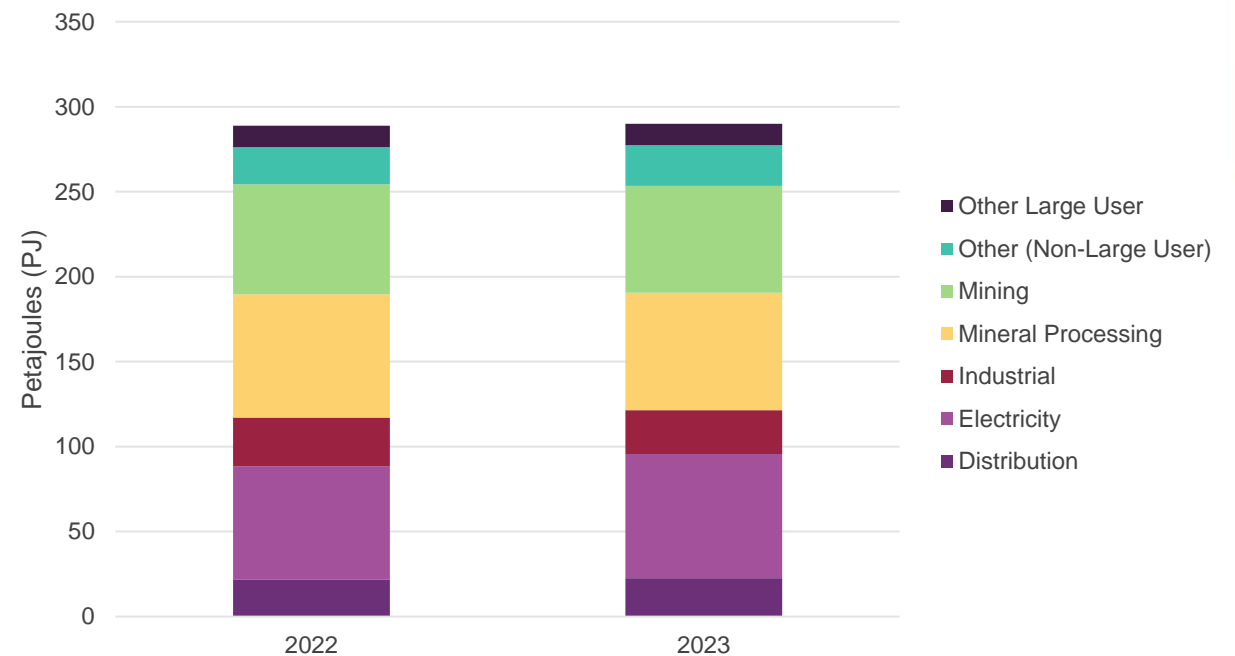
# 2023 Observations

## Gas Supply and Demand

Gas Supply Jan - Sep 2022 v Jan - Sep 2023



Demand Jan - Sep 2022 v Jan - Sep 2023

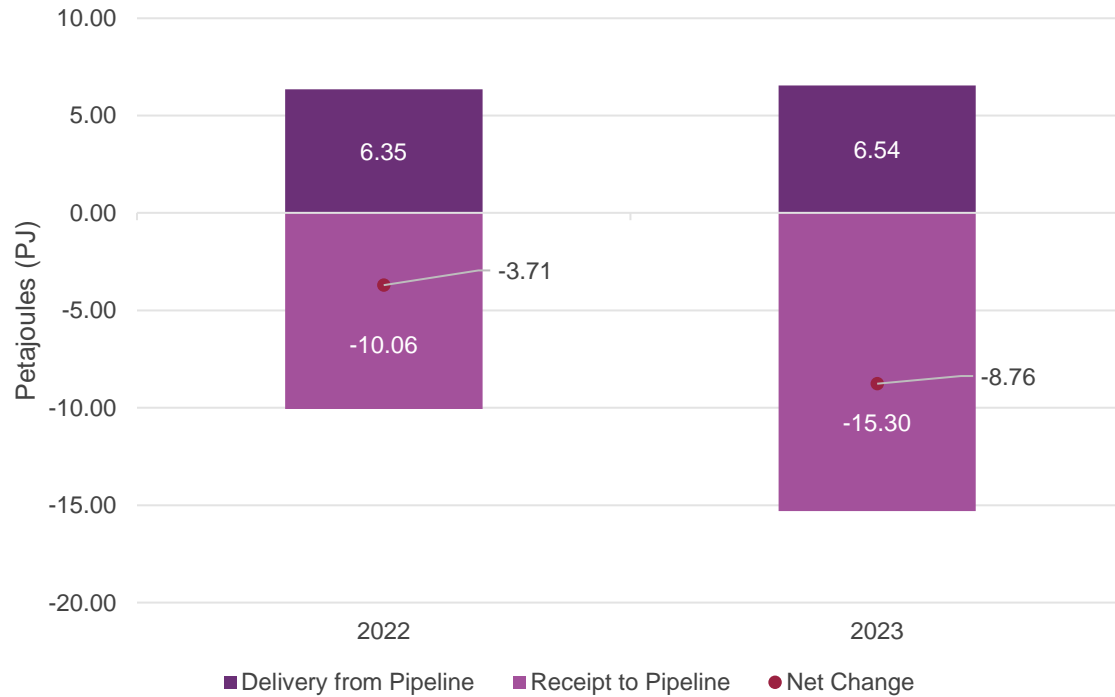


- A** Total Gas supply decreased by almost 5 PJ compared to 2022, a reduction of 1.7%. This was mainly due to Devil Creek and Varanus Island’s reduction in output, only partly offset by Karratha Gas Plant.
- B** Walyering Production Facility (33 TJ/day) was registered from 18 September, producing ~0.5 PJ this year.
- C** Gas demand remained similar, increasing by only 1 PJ. Demand for electricity generation grew however by 6 PJ (9%), offset partly by a reduction in the Mineral Processing and Industrial industries.

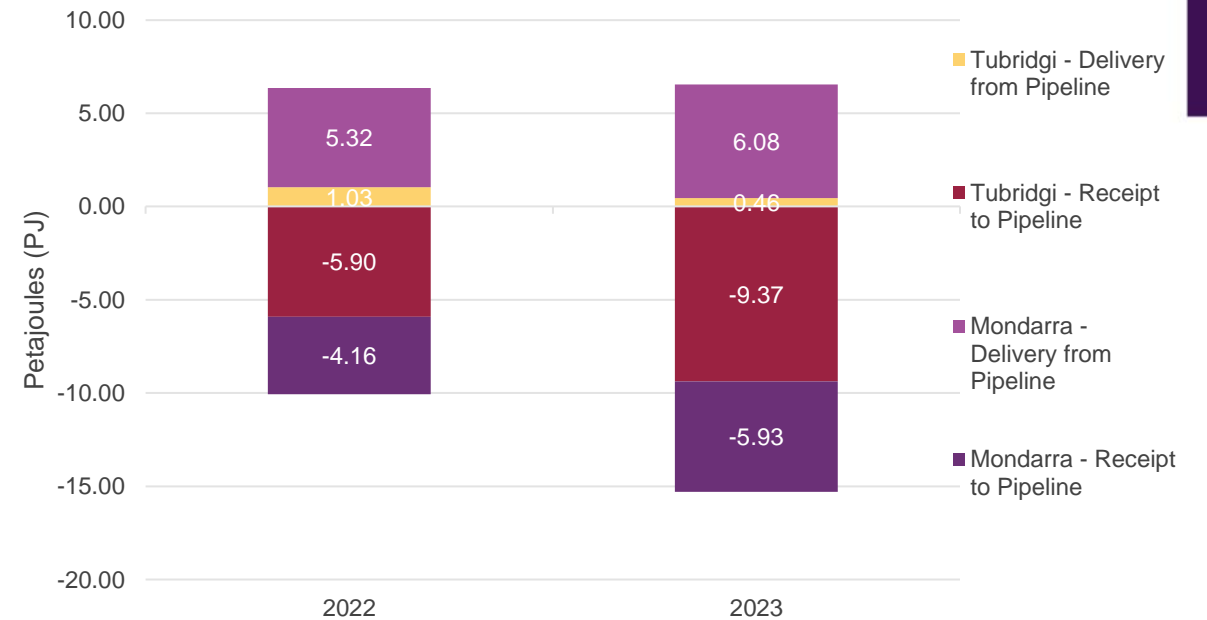


# 2023 Observations Storage

Gas Storage Flows Jan - Sep 2022 v Jan - Sep 2023



Gas Storage Flows Jan 2022- Sep v Jan - Sep 2023



- A** There was a net reduction of 5 PJ of gas flows into storage compared to 2022.
- B** Net injections from Tubridgi Storage Facility into the pipelines increased by 3.4 PJ compared to 2022.
- C** Mondarra injected 1.7 PJ into the pipelines, an increase of 43% PJ compared to 2022.

# Registrations & IT Systems

## Participant Registrations

**APA Northern Goldfields Interconnect Pty Ltd**  
Gas Shipper  
Effective 25/01/2023

**Yara Pilbara Fertilisers Pty Ltd**  
Gas Shipper  
Effective 01/03/2023

**Strike Energy Ltd**  
Facility Operator  
Effective 01/04/2023

**Lynas Kalgoorlie Pty Ltd**  
Gas Shipper  
Effective 01/04/2023

## Facility Transfer

**Yarmina Power Station**  
Large User  
Effective 24/06/2023

**Port Hedland Power Station**  
Large User  
Effective 01/11/2023

**Newman Power Station**  
Large User  
Effective 01/11/2023

## Facility Registration

**Northern Goldfields Interconnect Pipeline**  
Pipeline  
Effective: 01/04/2023

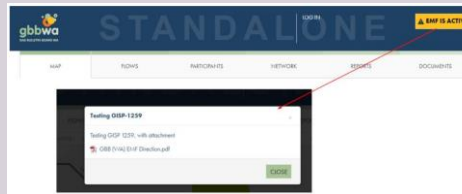
**Walyering Production Facility**  
Production Facility  
Effective: 18/09/2023

## GBB (WA) 1.19

- Addition of Shipper registration and deregistration dates in the GSI Register.
- Improvements to the Monthly Trucked Gas Report.
- Fix to the EMF page to allow download of the EMF Activation Notice but the public.

Monthly Trucked Gas

Facility	Type	Month	Quantity (GJ)
	Production	December 2022	89,89
	Production	December 2022	79,79
	Production	December 2022	43,34
	Production	December 2022	49,2



## GBB (WA) 1.20

- Addition of the new NGIP on the GBB (WA) Map and Topology page.



# Thank you

We welcome your feedback to improve our forums in 2024.

# Questions and Feedback

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