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Victorian Transmission System Stakeholder Engagement Group. 2023-27 access arrangement (AA6).

Roundtable 8 – Capital issues continued

18 August 2021



Acknowledgement of Country

We would like to begin by paying respect to the Traditional Owners of the land on which we meet today and their continuing connection to land, waters and community.

We pay our respect to Traditional Owners, their cultures, and to their elders past and present.

Today's discussion

1	Welcome & Acknowledgement of Country	Start 2.30
2	Recap and feedback on workshop discussion <ul style="list-style-type: none">• What we heard at Capital Issues Workshop• Our response to issues raised	2.30 to 2.45
3	Demand & supply study. <ul style="list-style-type: none">• Update from Oakley Greenwood	2.45 to 3.15
4	South West Zone Study	3.15 to 3.35
5	Analysis of accelerated depreciation on tariffs	3.35 to 3.50
7	Wrap up	3.50 to 4.00

Purpose of today's discussion is to inform, consult, involve

Drivers influencing APA's capital planning for VTS (recap from Workshop)

Demand & supply forecasts

Government energy policy

Safety, integrity, maintain capacity & regulatory obligations

Market direction – future fuels, renewables

Lowest sustainable cost

Customer expectations – other drivers?

Implications for the VTS Access Arrangement (recap from workshop)

Assessing the need for SWP capacity development

- **Victorian gas supply dynamics**
 - Longford production declining
 - Golden Beach – Culcairn injection – Port Kembla LNG – APA East Coast Grid expansion
- **Potential gas supply developments west of Melbourne**
 - Iona underground storage expansion
 - VIVA FSRU – Geelong
 - Vopak FSRU - Avalon
- **SWP as a constraint**
 - AEMO, Vic and Federal government commentary
 - Iona current deliverability v. SWP capacity
- **Increasing capacity on the SWP**
 - How much capacity is required? When? For how long?
 - What capex is required to develop that capacity?
 - Cost to develop capacity

Underwriting SWP capacity development capex

- **The DWGM and bilateral contracting**
- **The VTS Access Arrangement and forecast capex**
 - NGR Rule 79
 - “No regrets” capex
- **NGR Rule 80 application**
 - 3 parts - Timing – Triggers?
 - Will require APA Board approval
 - Capex pass-through application
 - AER and AEMC stated views
- **Interaction with Victoria decarbonisation policy**
 - Regulatory asset life
 - A new asset class
 - Asset stranding risk – capital redundancy provisions
 - Access Arrangement Fixed Principles

What we heard at Capital Issues Workshop – key themes

What we heard	Our response
Government policy spectrum	
<ul style="list-style-type: none">• Question on why Victorian Government is going down the route of gas substitution• Question whether electrification will deal with energy/ emissions needs.	<ul style="list-style-type: none">• APA supports the transition to net zero emission• Gas infrastructure plays a critical role in helping maintain system security and will help unlock low-cost renewable generation capacity.• Decarbonisation of the Victorian economy should be considered as a whole.
<ul style="list-style-type: none">• Gavin Dufty presented on support for development of Victorian gas substitution plan but important to explore renewable opportunities and energy efficiency measures...• And that consideration should be given to the need for, timing of and, appropriate path for accelerated depreciation of the current gas assets – to ensure we don't burden future generations.	<ul style="list-style-type: none">• Today, we will present analysis of the potential impact of accelerated depreciation on tariffs

What we heard at Capital Issues Workshop – key themes

What we heard	Our response
Government policy spectrum	
<ul style="list-style-type: none">• What is the definition of ‘no regrets’.• How is investing in long lived assets no regrets?• One definition - I am going to regret paying for that investment for the long period after it is not required.	<ul style="list-style-type: none">• Having considered the concerns we consider in the current complex energy market, the most efficient and lowest cost long-term infrastructure solution is based on the efficient expansion and utilisation of existing infrastructure.• We will embed this principles into investment decisions to minimise costs and help with energy affordability for customers.
South West Zone Study	
<ul style="list-style-type: none">• Lochard supported the expansion of South West Pipeline• Lochard informed reaching Final Investment Decision (FID) on expanding Iona storage to 570 TJ (from 530 TJ).	<ul style="list-style-type: none">• We are presenting an update on the South West Zone Study

What we heard at Capital Issues Workshop – key themes

What we heard	Our response
Victorian Demand & Supply Study	
<p>Feedback on Oakley Greenwood (OG) presentation</p> <ul style="list-style-type: none">• Need to address impact on demand and consumption of Victorian Government policies (eg incentives to switch from gas to electricity).• Capital intensive response may delay transition (electrification) but not when it comes to heating.• Will OG be talking to large users as part of the study?	<ul style="list-style-type: none">• Their study is using publicly available information. The scope did not include talking directly to customers.• Oakley Greenwood will be presenting draft position today.
Future fuels – proposed VTS Hydrogen Study	
<ul style="list-style-type: none">• Mixed views – from ‘Is hydrogen the answer?’ to acknowledging needs for a study.• No support expressed for customers to pay for the study but question was asked - What sort of money are we talking about?• View that government should ensure or assist with re-purposing the infrastructure than just let it be mothballed, therefore consumers do not bear the cost - the study or increased tariffs..	<ul style="list-style-type: none">• Would you be interested in participating in a separate hydrogen workshop.



Oakley Greenwood

Victorian DTS Stakeholder Forum

APA
August 2021

Overview

- Objective of our study and today's session
- Impact of known factors affecting supply and demand
- Potential impact on future investments

Objective of our study and today's session

To identify, and wherever possible quantify, the impact that recent announcements affecting the eastern Australian gas market might have on:

- AEMO's GSOO/VGPR annual and peak demand forecasts for Victoria; and
- Likely requirements for new gas supplies:
 - Given the above changes to annual and peak demand, and
 - Recent announcements affecting gas supplies and transportation.

To identify how the above:

- Might impact APA's potential future investment requirements in Victoria (e.g., SWP); and
- Might impact on APA's broader Victorian gas business - including its economic life (for regulatory purposes).

The purpose of today's session is to explore some of our preliminary thoughts and findings on the issues (and their magnitude) affecting supply and demand in more detail, and hear your thoughts on these issues...

Known changes not otherwise included in 2021 GSOO

Industrial closures

- Altona's closure (pivot to an import terminal)
- QENOS' reduction in operations (closure of ~50% of operations)
 - Combined affect is **~7.24TJ/day (peak)** and **2.28PJ (annual)**.

SWQP upgrade

- Increase in capacity, enabling more gas to be transported from QLD to NSW (potentially freeing up capacity that might have otherwise been used to provide gas to NSW, to be pivoted towards supplying other markets, including Victoria)
- Estimated impact is **~100TJ/day**

VIC Government's legislated Net Zero target, and supporting policies, particularly with regards to the use of renewable gases and a move to electrify existing gas loads

- Gas Substitution RoadMap (including detailed modelling of pathways to decarbonise Victoria's Gas Networks)
- Approaches to incentivise increased uptake of renewable gas



On the potential electrification of load..

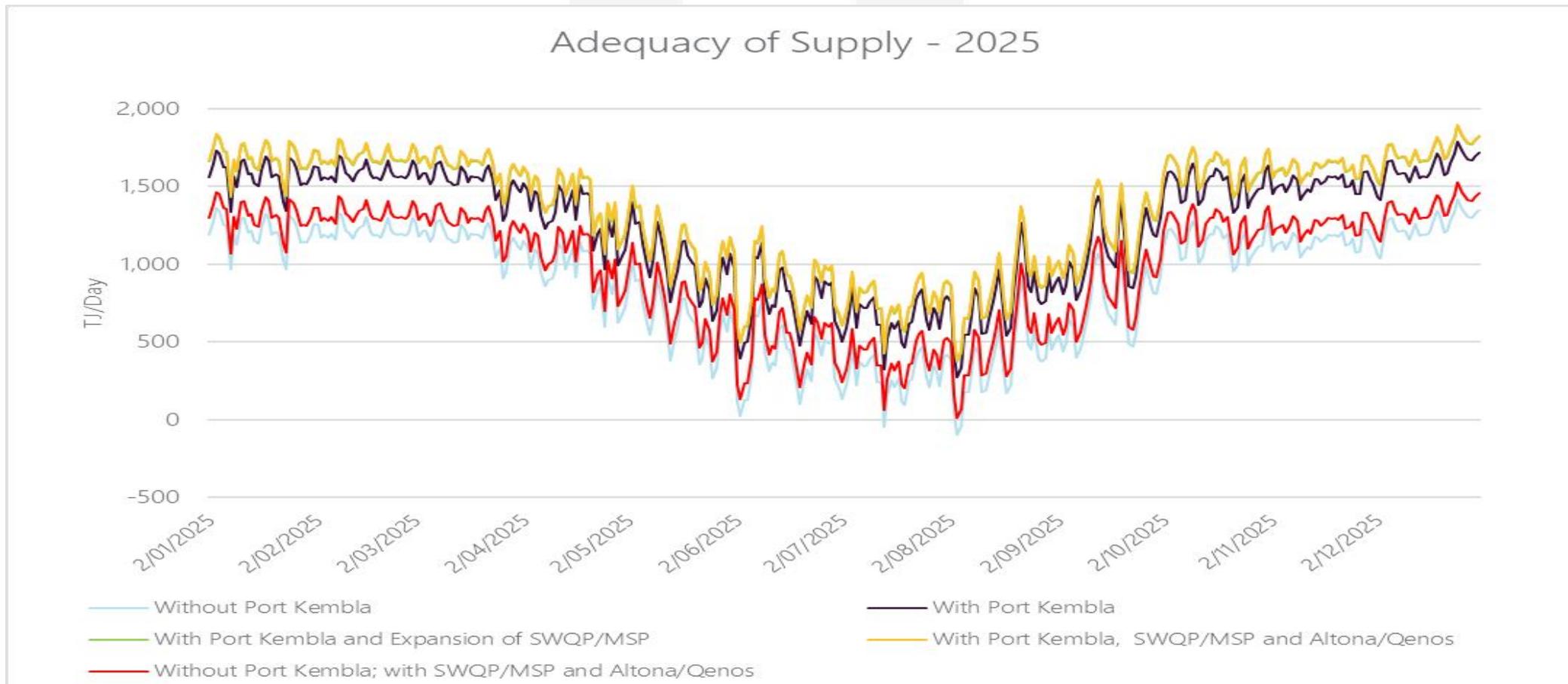
2021 GSOO Central Case makes no allowance:

“while not considered in the scenario collection for this year’s GSOO, a scenario with greater electrification of residential heating (or other heating alternatives to gas) would drive down Victoria’s maximum daily demand for gas much faster than currently forecast. This possibility will be explored in more detail in future GSOOs, and AEMO’s 2022 Integrated System Plan”

AEMO’s *Inputs, Assumptions and Scenarios Report (IASP)*, which was published in July 2021, 4 months after the GSOO states:

“The Net Zero 2050 scenario represents a future that delivers action towards an economy-wide net zero emissions objective by 2050 through technology advancements. This transition focuses on short-term activities in low emission technology research and development to enable deployment of commercially viable alternatives to emissions-intensive activities in the 2030s and 2040s. Stronger economy-wide decarbonisation, particularly industry electrification, occurs in later years as the 2050 deadline approaches. Consumers are initially continue (SIC) to heat their homes in the same manner they do today, but by the mid-2030s nearly half the current gas heating has been electrified, and in the final years of the horizon nearly all residential heating is electrified [emphasis added]”

There looks to be no major peak demand issue in the relative short-term (2025), even without Port Kembla...



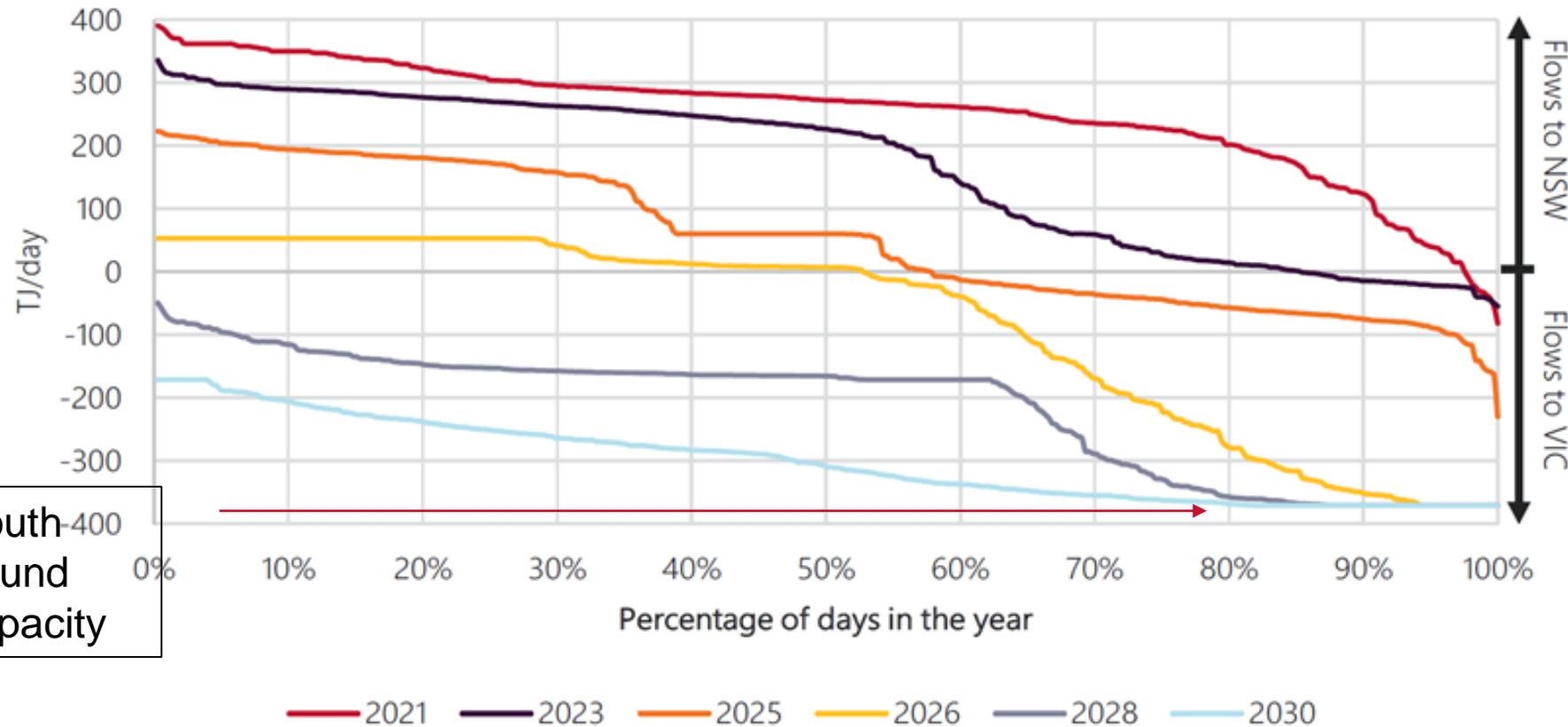
Source: OGW adjustments to AEMO's 2021 GSOO (data underpinning Figure 28)

- Makes no allowance for (a) any change in gas demand due to electrification (despite it potentially having an impact), (b) stronger reliance on DLNG, or (c) intervention in electricity market to free up gas Tx capacity (e.g., Uranquity GPG, to free up 75TJ/day on Wagga-Culcairn)



North - South Transmission Capacity is not expected to be a constraint in 2025

Figure 29 Cumulative distribution of aggregate flows between New South Wales and Victoria (EGP and VNI), Central scenario, assuming existing, committed, and anticipated developments, 2021-30 (TJ/d)

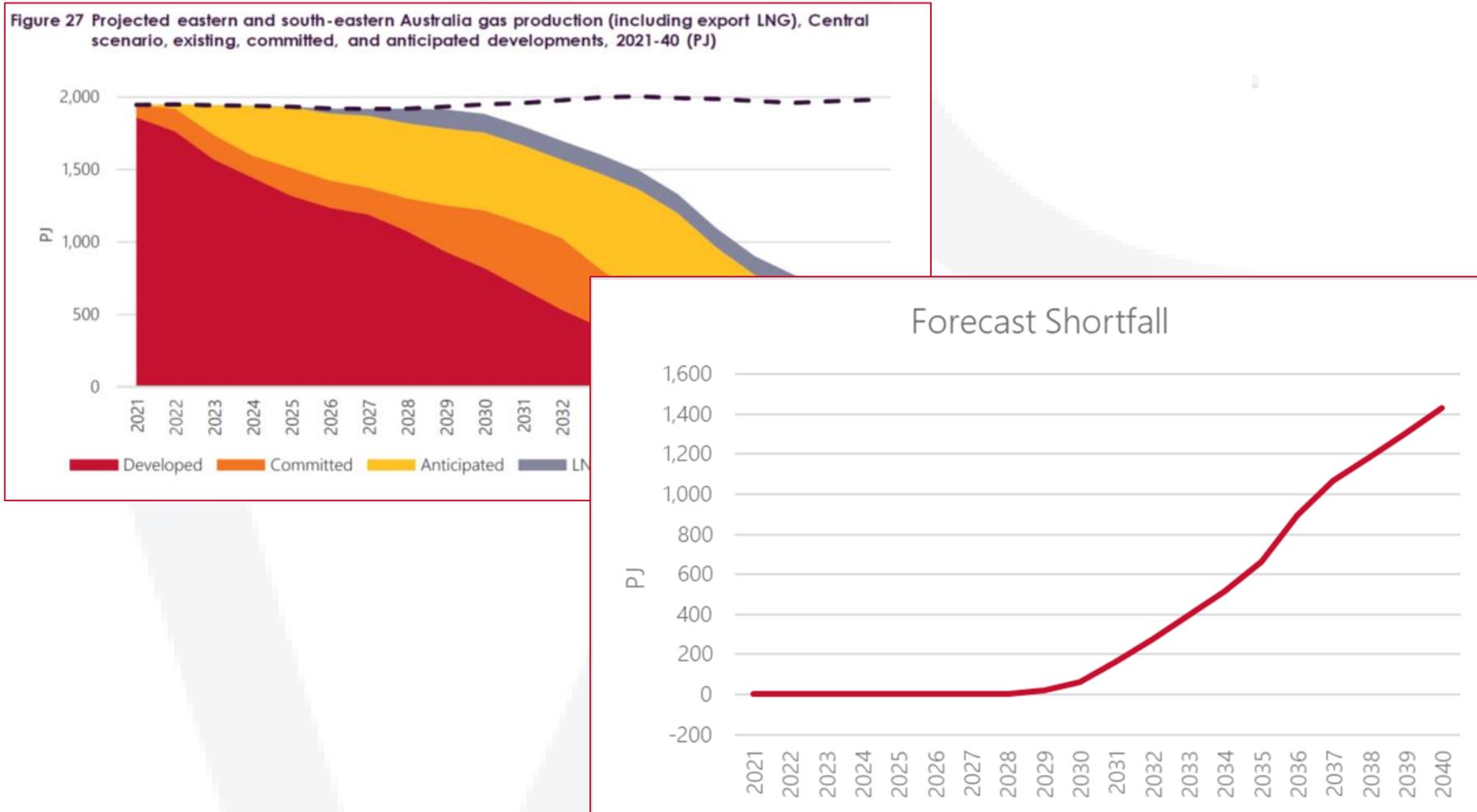


South-bound capacity

Means SWQP/MSP expansion, which provides gas to NSW, can also assist Victoria

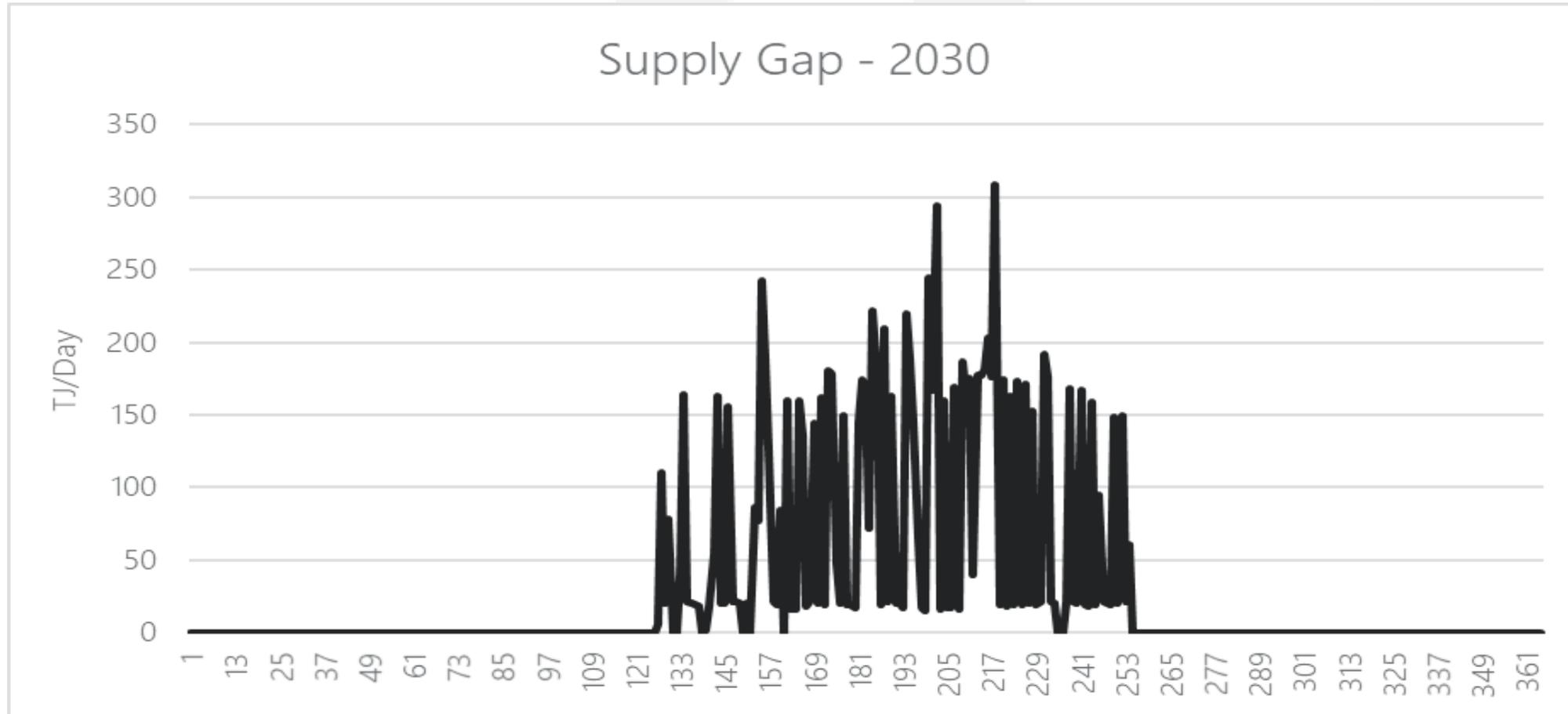
However, north/south capacity is forecast to be constrained in the longer term

AEMO is not forecasting any supply shortfall in 2025



However supply shortfalls in Southern markets become the norm from 2030 onwards..

However, in 2030, AEMO's GSOO indicates a decidedly different situation, absent any interventions



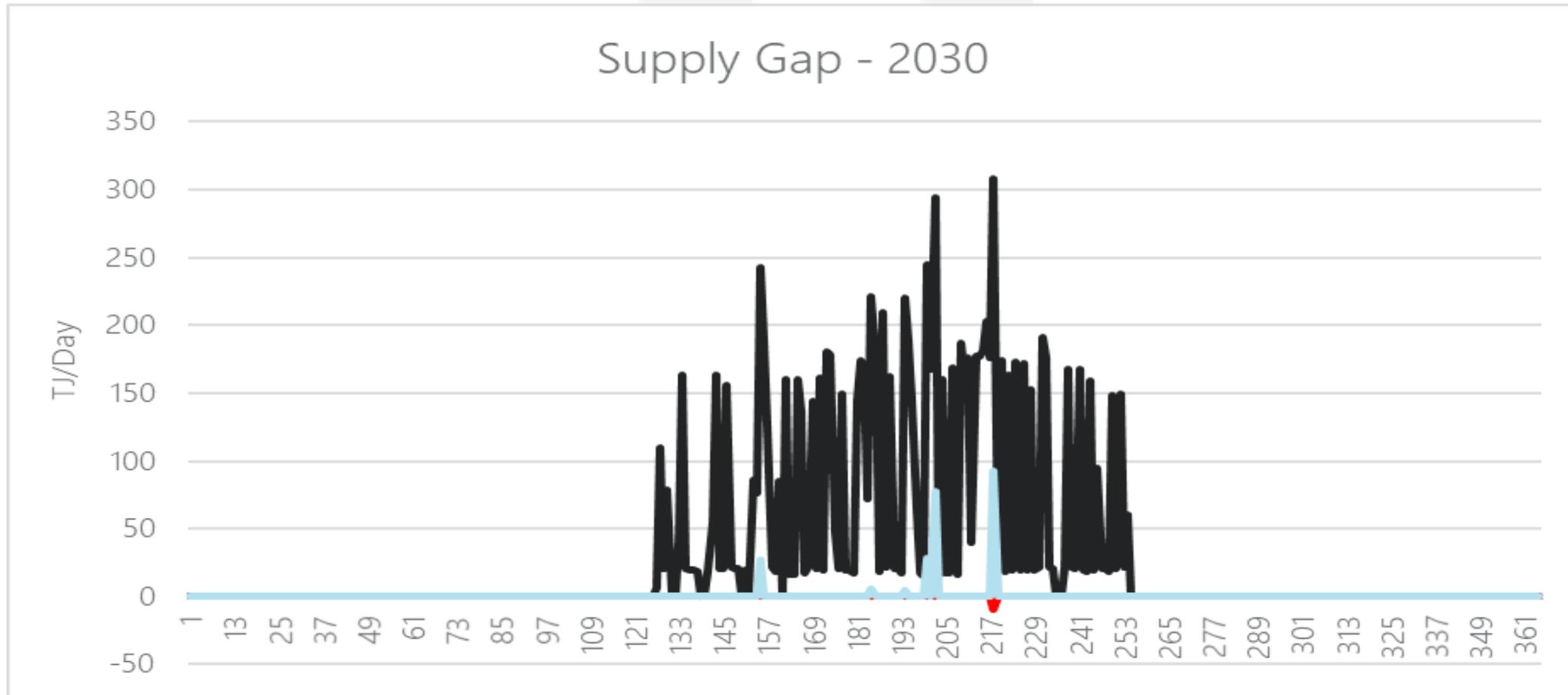
Max day gap of >300TJ/day (Southern markets)

Overall gap of 10.9PJ (~65% of usable IONA storage capacity)

And transmission capacity limits on north/south flows ~30% of the year...

However, AEMO's Net Zero assumption would indicated potential for a material amount of electrification to impact this peak day supply gap

In 2030, the situation may look radically different with electrification



Our preliminary analysis indicates that electrification aligned to AEMO's Net Zero assumption (50% of residential heating electrified by 2035), along with SWQP/MSP expansion and industrial closures, could alleviate almost all of the Southern Peak Day Supply Gap (red bar below reflects remaining gap)

Light blue bar reflects a lagged electrification program (half of what AEMO forecasts).

However, there are still remaining issues

North / South transmission capacity (which is required in order to get more gas into Victoria, including as a result of APA recent SWQP/MSP expansion) is reached on ~30% of days in 2030

GSOO forecasts an overall supply gap of 65PJ in 2030 (Figure 27)

After electrification of heating etc, overall supply gap would reduce, but some may still remain..

Pertinent options for consideration:

- **Rely on a market-led augmentation of the Young-Culcairn connection to increase north/south capacity**
 - Allows more gas to flow from northern gas fields AND provides more peak demand support
 - Flexible solution - hence able to respond to new market information as it is revealed
- **SWP - additional compression to service IONA's existing capacity**
 - Allows more peak demand support; however
 - Disadvantage is that its storage size combined with declining local production and significant north/south constraints over the year (absent any increase) risks within-season shortfalls
- **SWP upgrade to accommodate LNG import facilities**
 - More peak demand support AND more gas; however
 - Disadvantage is additional (material) cost of looping, combined with significant uncertainty regarding future gas market conditions (and flexibility of FSRU facilities to re-locate, rendering investment stranded)
 - FiD decisions also a risk.

Other issues:

- Declining supplies to Longford > Timing and magnitude uncertain - unsure of impacts on peak production capacity even though clear overall gas supply will reduce?

Next Steps

- Receive and consider feedback from this session (and information provided post this session where relevant)
- Examine likely risks and opportunities/prudent approaches - given a very uncertain future for the gas sector development
- Develop final report (late August)



South West Zone Study update

Securing investment for SWP expansion

Committed projects

- The expansion to accommodate committed Iona deliverability appears to qualify as Conforming Capital Expenditure on security of supply grounds.
- Do stakeholders support SWP expansion capex to meet security of supply needs?

Projects yet to achieve Final Investment Decision

- Expansion required to accommodate those projects that have yet to reach FID:
 - VIVA LNG import terminal at Geelong;
 - Vopak LNG terminal at Avalon; and
 - Further expansion to the Lochard Iona gas storage facilitydo not appear to meet the Rule requirements for Conforming Capital Expenditure under Rule 79.
- ***We do not propose to include forecast capex projects in the AA to accommodate these uncommitted projects***
- We are conscious of the chicken-and-egg problem this creates for project proponents:
These projects will not be able to get to FID if they cannot be confident that they will be able to access the pipeline

“Rule 80” proposals for uncommitted projects

- NGR Rule 80 allows the AER, on application, to make an **advance determination** as to whether proposed capex, if undertaken, will meet the Rule 79 Conforming Capital Expenditure requirements
- This would give confidence to both APA VTS and project proponents.
- **We propose to lodge a 3-part Rule 80 application:**
 - One part for the capex required to accommodate each proposed project
- **Timing**
 - The results of the capacity study may not be available in time to lodge this application with the AA proposal on 1 December – but it is not part of the AA proposal
- **Triggers**
 - FID on a flagged expansion project will trigger the pipeline expansion project (details to work out here)
 - If a project does not proceed to FID, the pipeline expansion project will not proceed.

If this proposal package meets the approval of stakeholders, we will take it to the APA executive

Enabling the SWP expansion projects to attract funding

**AER approval under Rule 80 may be insufficient to attract capital to a VTS expansion project
We propose a number of additional measures in the AA to enable the SWP expansions to be funded**

Capex pass-through application

- A Rule 80 approval does not allow the investment to earn a return until the commencement of the next AA
- We propose a capex pass-through to allow the mid-term investments to attract a return on completion
- The AER and AEMC have both stated that they are uncomfortable with the concept of a capex pass-through
 - Concerned that pass through applications do not receive the same scrutiny as capex applications
 - We would be seeking a pass through for capex that has been assessed and received a Rule 80 approval

Do you have any questions or comments?

Analysis of acceleration depreciation impacts on tariffs

Expansion capex in the context of Vic decarbonisation policy

Under the [Victorian Climate Change Act 2017](#), the Victorian Government has committed to a whole-of-economy, net zero emissions target by 2050;

The Victoria [Gas Substitution Roadmap](#) seeks to remove gas from the energy sector by 2050; [Infrastructure Victoria](#)'s advice sees limited opportunity to repurpose the existing gas network beyond 2040.

If capital is to be committed in this context, any investor will need confidence that it can recover its capital within the stated time frames (this applies equally to VIVA, Vopak and Lochard).

We propose to include the following additional features in the VTS access arrangement:

- **A reduction in the standard and remaining regulatory asset life to (25?) years:**
 - The tariff implications of this proposal are discussed on the next slide
- **Decarbonisation policy resulting in load reduction presents stranding risk**
 - We propose that the capital redundancy provisions (Rule 85) will not apply to SWP expansion capex.
 - We propose that this feature becomes a Fixed Principle in the Access Arrangement

If this proposed package meets the approval of stakeholders, we will take it to the APA executive

Tariff implications of reducing depreciable lives

A reduction in asset lives will increase the depreciation building block and will result in an increase in tariffs.

In general, an earlier reduction in asset lives, while the load is still intact, will result in a smaller tariff increase than a later reduction, when the load has declined.

We modelled the impact of reducing VTS asset lives, and found:

- **If we cap all standard and remaining asset lives at 25 years in the upcoming AA:**
 - VTS tariffs rise, on average, 6¢ per GJ
 - This compares to a domestic retail tariff in excess of \$20.00/GJ
- **If we wait 10 years to act, and then have to reduce asset lives to 15 years, and recover tariffs over 80% of the load:**
 - VTS tariffs rise, on average, 28¢ per GJ

Do you have any comments or questions?

Wrap up

- **Next step - Roundtable 9 proposed for Wednesday 15 September at 2.30 AEST**
- **Do you think that we need to have more frequent roundtables?**

Thank you for participating,...
Stay strong and stay safe...

See you in September

For further information

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