

Victorian Transmission System Stakeholder Engagement Group

2023-27 access arrangement (AA6).

Roundtable 6 – 2021 Victorian Gas Planning Report. Demand forecasts.

presented by: Jessie Yeung, Scott Young, Nives Matosin

19 May 2021



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Acknowledgement of Traditional Owners



We would like to begin by paying respect to the Traditional Owners as the custodians of country throughout Australia 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.



Discussion points



- 1 Welcome, house rules, purpose of today
- 2 What we heard in Roundtable 5 and our response
- 3 2021 Victorian Gas Planning Report
- 4 Demand forecasts for VTS
- 5 Planning for Roundtable 7
- 6 Wrap up

Introductions and house rules



- We ask that discussions during the roundtable are respectful.
- This is intended be an open discussion between the engagement group and APA.
- We welcome you to raise any issues or questions about the access arrangement.
- We will keep notes of discussions.
- We are not intending to attribute any comments or questions to you or your organisation, unless requested.

Purpose of today's roundtable

Purpose of Roundtable 6 (R6) is to:

- AEMO 2021 Victorian Gas Planning Report
 - AEMO to present on the VGPR
 - Respond to questions raised by the group
- Discussion of demand forecasts by Scott
 - Seeking feedback on reasonableness of AEMO's forecast assumptions
- R6 sits within Inform & Consult on the IAP2 spectrum.

Engagement timeline – where we are at



VTS stakeholder engagement key activities and dates				
Phase	Date	Activity	Topics	IAP2 spectrum
Phase 2 - Getting to the detail - revenue requirements, tariffs and access arrangements				
	16/03/2021	Roundtable 4	Introduction to regulatory building block and VTS tariff structures	Inform/ Consult
	14/04/2021	Roundtable 5	Brief overview of AEMO Victorian Gas Planning Report. A first look at the stay-in-business capital program	Inform/ Consult
	14/05/2021	Issues Paper	Capital program	Involve
	19/05/2021	Roundtable 6	AEMO presentation on VGPR. Demand forecasts.	Inform/ Consult
	16/06/2021	Roundtable 7	Further draft of capital program. First look at operating expenditure forecasts, efficiency mechanism and other revenue components.	Involve
			Making changes to the Access Arrangement - expansion requirements and other elements	Involve
	TBC	Workshop	Capital program	Involve
	14/07/2021	Roundtable 8	Total revenue, revenue allocation and tariff structures	Involve
	14/07/2021	Information/ Issues Paper	VTS tariff structures	Inform/ Involve
	18/08/2021	Roundtable 9	Continue discussion on cost allocations and tariff structures.. Making changes to the Access Arrangement	Involve
	22/09/2021	Roundtable 10	What we've heard so far, our response. Further opportunity for input.	Involve
Phase 3 - Putting the plans together				
	6/10/2021	Consultation	APA release Consultation draft proposal for comment	Involve
	13/10/2021	Roundtable 11	Early consultation proposal - questions and answers session	Involve
	17/11/2021	Roundtable 12	Our draft proposal and how you shaped our thinking.	Involve

What we heard at Roundtable 5 and our response



Topic	Issues raised by stakeholders	Comment/ response
VGPR - Dandenong LNG Storage	APA presented that AEMO has identified low Dandenong LNG inventory as a threat to system security and is seeking a market response. Question was raised as to why would an industrial customer pay for inventory when they was no certainty that they would have access to it if there was a safety and security issues and AEMO needed the gas. (and they will be curtailed ahead of others).	Refer to 2021 AEMO Gas Winter Outlook information. From APA's perspective under the National Gas Rules, APA is required to operate the Dandenong LNG Storage Facility in accordance with scheduling instructions issued by AEMO. In situations where AEMO considers it necessary to intervene in the market to subside a system security threat, AEMO can issue market directions or inject gas from AEMO's 'LNG reserve'. LNG reserve is defined as storage capacity to which AEMO is entitled under its storage agreement. At this stage AEMO does not have a storage agreement with APA at Dandenong.
VGPR - Supply options	What are AEMO's views on supply options west of Melbourne?	Question for AEMO.
VGPR - South West Pipeline	Did AEMO take into account recently announced Beach gas? South West Pipeline is under constraint, If Beach gas is developed there will be further pressure on SWP.	Question for AEMO.
VGPR - South West Pipeline	Is APA doing work on the South West Pipeline?	APA is looking at a number of different proposals but at this stage there is no augmentation anticipated for the 2023-27 access arrangement. APA can only undertake an expansion of the pipeline if there is firm information that the expansion is required – in this respect we are also beholden on others to reach FID on any projects they may have on the drawing board.
VGPR - South West Pipeline	What is the role of entry capacity certificates in deciding how much capacity would be required in SWP.	In a phone discussion with Scott - discussed the role of Entry Capacity Certificates, and how shippers might use them to nominate either from Iona or an FSRU, and what the implications of that market behaviour would be on our expansion needs – so we need to accommodate full flows from either Geelong OR Iona, or full flow from both simultaneously.

What we heard at Roundtable 5 and our response



Topic	Issues raised by stakeholders	Comment/ response
APA capex - term for NPV/ Asset lives	What term does APA use to assess benefits in NPV analysis? Issue linked to asset lives being assumed.	We are not proposing any expansion at this stage. Therefore we have not considered the appropriate term for such analysis.
APA Stay in business (SIB) capex	How are the SIB options developed?	Adam explained that we look at managing risks as part of our routine asset management planning. In some cases there are no alternative options.
Hydrogen	There is lots of discussion about how to integrate hydrogen - including the need to reline steel mains. How would that be treated for VTS / regulated assets.	Daniel commented that 2000km out of 2200km of the VTS steel pipelines are already lined. The issue is for VTS that the welds/ joints in the pipelines are not lined. The technology is not readily available to deal with this. We're not there yet with the welding issue.
Hydrogen	David forwarded an article about Hydrogen in the EU. Following on from my question today, here is a link to an article that discusses Europe's decision to convert its NG pipelines to transport hydrogen https://www.reuters.com/article/idUSKBN2C01TV	Thanks David.
Project prioritisation	Questions raised about the low levels of capital expenditure to date. There was an attempt to reconcile the numbers.	We noted that there will be variations to the cost of the WORM.
Angelsea	Why was Angelsea deferred?	AusNet decided to not proceed with this project - so APA didn't need to invest.
CESS	Is the VTS subject to the Capital Expenditure Sharing Scheme (CESS)	No.
CESS	So, without a CESS, APA earns a return on the underspend - which customers pay for. With a CESS, customers would get 70% of this underspend back.	SY explained that it is only the Rate of Return on the underspend that is retained during the AA period. Capital underspend is not added to the asset base at the start of the next period. Overall, there are swings and roundabouts - if we overspend in the current AA period - we don't earn a return until the next AA period.



2021 Victorian Gas Planning Report Jessie Yeung, Senior Gas Operations Analyst, in the Gas Operations team



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Demand forecasts for VTS



Load and demand forecast



Terminology:

- **'Load'** describes the total amount of gas flowing through the system over the course of the year
 - used primarily for tariff derivation purposes
- **'Demand'** describes the daily (or hourly) amount of gas that Users require the system to be able to deliver on the peak day (or peak hour)
 - used primarily for expansion capex planning
 - the VTS design standard is for a '1-in-20' ('p5') peak day
 - on only 1 day in 20 years, the VTS will not be capable of meeting system demand
 - this is a measure of 'coincident demand'

AEMO's forecasting resources



Gas Statement of Opportunities (GSOO)

- Released annually, this covers the supply and demand outlook for eastern Australia
- <https://www.aemo.com.au/energy-systems/gas/gas-forecasting-and-planning/gas-statement-of-opportunities-gsoo>

Victorian Gas Planning Report (VGPR)

- Provides similar information, but focuses specifically on Victoria and VTS capability
- https://www.aemo.com.au/-/media/files/gas/national_planning_and_forecasting/vgpr/2021/2021-victorian-gas-planning-report.pdf?la=en

Victoria Winter Readiness Plan

- Focuses on the upcoming winter
- <https://www.aemo.com.au/-/media/files/gas/dwgm/2021/winter-readiness-plan-2021.pdf?la=en>

AEMO Forecasting Portal

- Provides downloadable data underpinning all other documents
- Useful graphical interface capability
- <http://forecasting.aemo.com.au/>

Load and demand forecasting process going forward



- We propose to start with AEMO's forecasts
 - We would value your views on which of AEMO's scenarios are the most likely.
- We may engage an independent review the GPG forecasts
- We will harmonise the final decision Volume forecasts with the AER-approved distribution business forecasts

GSOO and VGPR findings - demand



- Tariff D forecast to decrease by 5.0% over the outlook period
 - Industrial demand for natural gas is not forecast to grow in the next 20 years
 - could reduce significantly as industrial users start to decarbonise
 - gas-fired recovery plan assumed to be supported by actions to unlock supply
- Tariff V consumption is forecast to decrease by 4.6% over the outlook period
 - decreasing gas consumption per connection, partially offset by population growth
 - electric appliances in new high-density developments
- Volume of gas consumed for GPG is forecast to decline in all scenarios
 - 2020 GPG demand (127 PJ east coast; including 7 PJ for Victoria) was approximately 23% lower than in 2019. This was the lowest GPG consumption in over a decade
 - With an increase in variable renewable energy, GPG demand may become more 'peaky'
 - GPG may shift from summer to winter peaking
- GSOO scenario analysis reveals that gas consumption decline is more likely than growth
 - Victorian Govt has announced additional energy efficiency measures that are expected to have a further moderating effect on Victorian gas consumption

GSOO and VGPR findings - supply



- There has been a rapid decline in legacy Longford production and peak day deliverability
 - Major legacy flexible supply fields are now expected to be depleted by winter 2023
 - Gippsland annual production will decline by 52% from 316 PJ/y in 2021 to 153 PJ/y in 2025
 - Peak day supply capacity is forecast to decline from 1,030 TJ/d in 2021 to 443 TJ/d in 2025
- Port Kembla LNG import terminal is a 'committed project'
 - Forecast to inject up to 500 TJ/day into the SE Australia gas market
 - Combines with Jemena's commitment to modify the EGP to enable southbound flow into Victoria
 - Forecast to enable 395 TJ/d of supply from New South Wales (200TJ/day from Port Kembla and 195TJ/day from Moomba via Culcairn),
 - If PKGT is delayed, there is scope for scarcity for winter 2023 under certain conditions
 - NGIP notes that this project has not reached FID
- Constraints on the SWP may restrict Victoria's access to supply from Iona Underground Storage
 - SWP capacity assumes the WORM is built (445 TJ/d to 468 TJ/d)

Events subsequent to GSOO and VGPR publication

- **5 May 2021:** APA announced Phase I of its East Coast Grid expansion, increasing transportation capacity by approximately 25%
- **5 May 2021:** APLNG announced that it had entered into a four-year deal to supply up to 91 PJ of gas to Origin Energy

Upshots:

- Demand
 - There does not appear to be a case for demand - related expansion capex
 - Fixed costs ÷ reducing volumes = upward pressure on tariffs
- Supply
 - Adequacy of supply (particularly peak day supply) is a significant concern
 - There may be a need for security of supply driven expansion of injection pipelines

Your views?

- On the reasonableness of AEMO's GSOO and VGPR assumptions
- On the impacts of AEMO's GSOO and VGPR assumptions
- What other reasonable assumptions might we consider?
- On the impacts of these subsequent announcements

AEMO forecasting portal – total load



Gas Annual Consumption Total

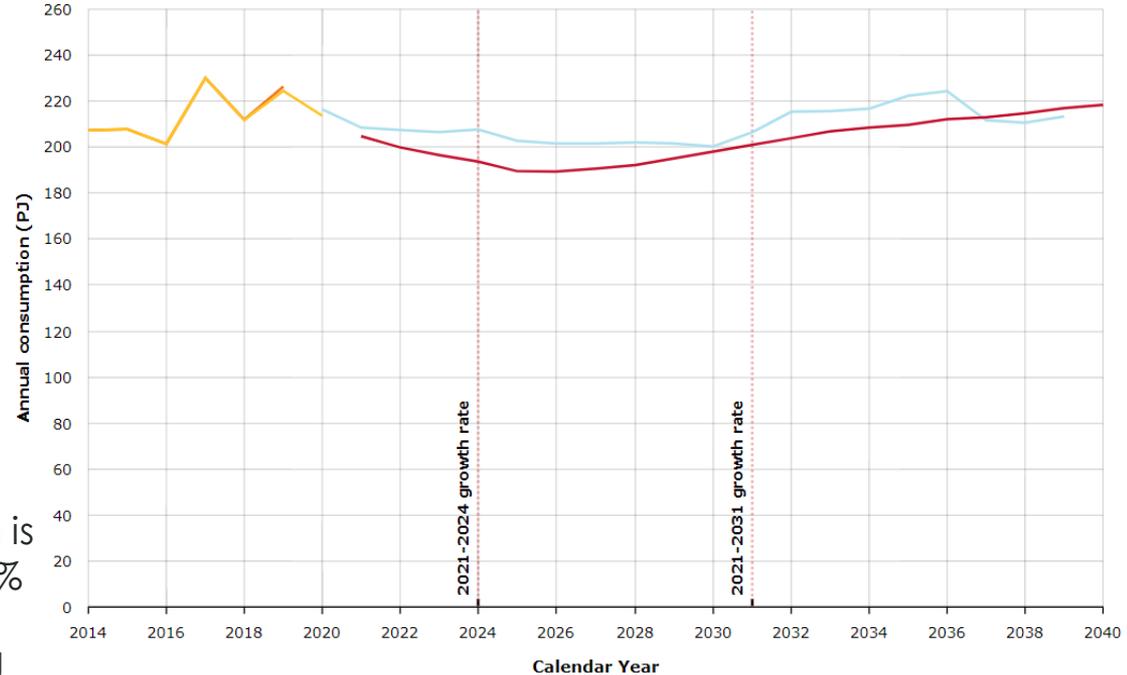
Total Victoria Actual Central 29/03/2021 00:00 Compare to: GSOO 2020 - 27/03/2020 00:00

Table CSV Filters

Region
x Victoria

Scenario
x Actual x Central

Compare to:
Publication
GSOO 2020
Version
27/03/2020 00:00



- Annual system consumption is forecast to decrease by 5.1% over the outlook period, from 197 PJ in 2021 to 187 PJ in 2025.

GSOO 2020 2020 Actual GSOO 2021 2021 Actual
GSOO 2020 2020 Central GSOO 2021 2021 Central

AEMO forecasting portal – 1 in 20 (p5) peak winter demand



Gas Maximum Demand Total

Total Victoria Central Gas Led Hydrogen Winter 5 29/03/2021 00:00 Compare to: GSOO 2020 - 27/03/2020 00:00

Table CSV Filters

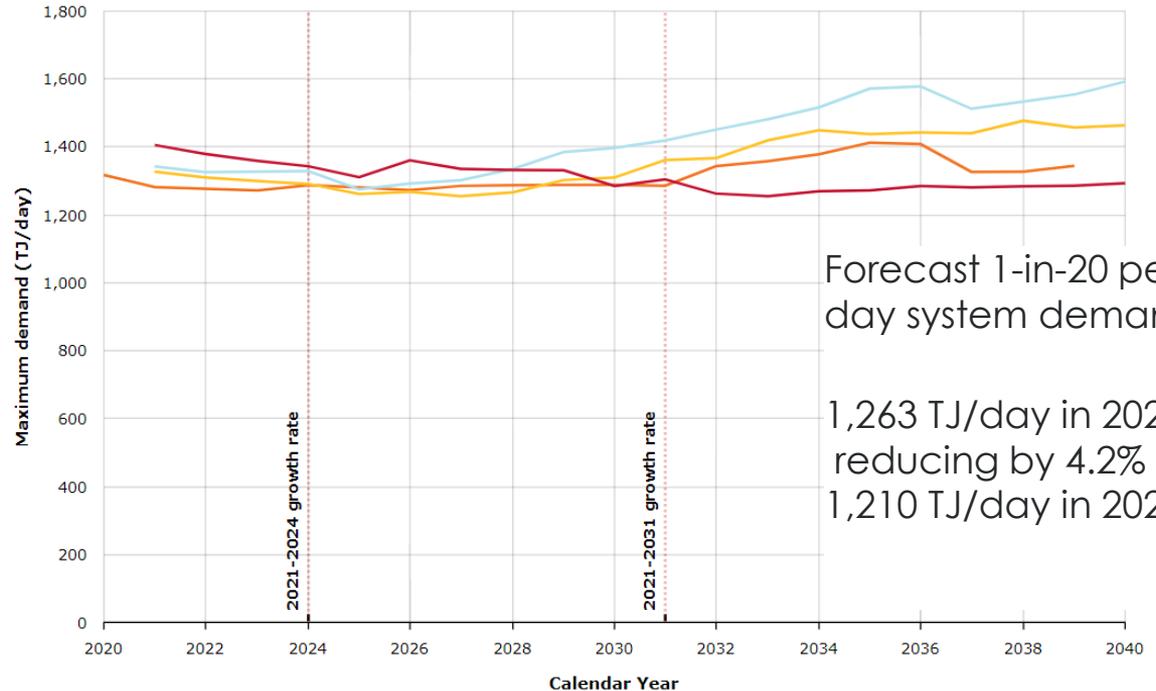
Region
x Victoria

Scenario
x Central x Gas Led
x Hydrogen

Season
Winter

Probability
x 5

Compare to:
Publication
GSOO 2020
Version
27/03/2020 00:00



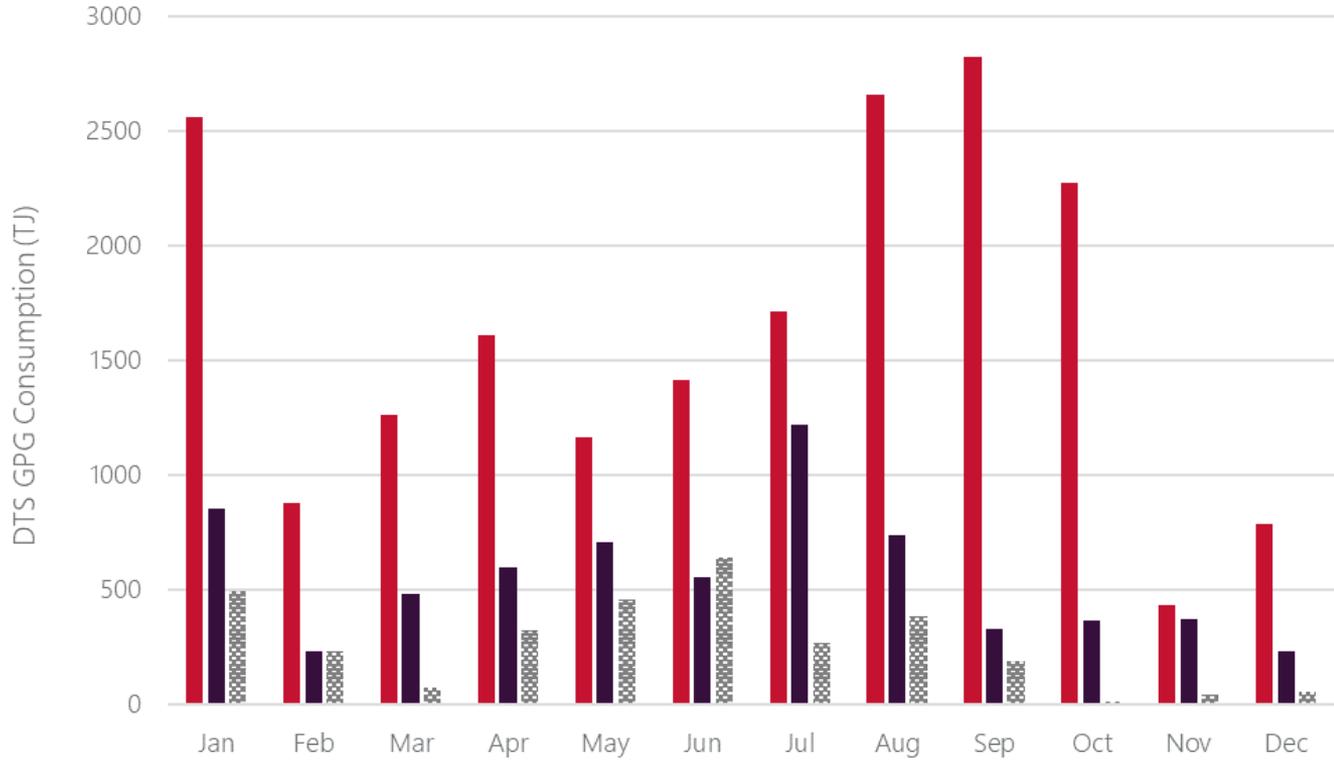
GSOO 2020 2020 Central POE 5

GSOO 2021 2021 Central POE 5

GSOO 2021 2021 Gas Led POE 5

GSOO 2021 2021 Hydrogen POE 5

- GPG consumption is forecast to decrease from 2021, due to new grid-scale variable renewable energy (VRE) generation projects and solar photovoltaics (PV).
- Forecast GPG consumption during the 2021 May-Sep peak demand period has reduced to 1.9 PJ, compared to 3.6 PJ in 2020.
- Peak GPG demand is expected to remain high as GPG continues to play a critical role in meeting peak electricity demand
- There remains a greater likelihood of GPG demand occurring on high system demand days.



Source: AEMO 2021 winter readiness report, Figure 2, p9

■ 2019 Actuals ■ 2020 Actuals ▨ 2021 Forecast

Injection forecast

- AEMO is confident there will be enough gas injected into the VTS to meet 2021 peak day demands
 - Going forward, there is still some question on which injection points will supply how much
- Gippsland peak day forecast to decrease from 1,059 TJ/d to 1,012 TJ/d
 - Must subtract deliveries to Tasmania and Eastern Gas Pipeline
- Port Campbell will be restricted by capacity of SW Pipeline: 445 TJ/day
 - Geelong and Avalon LNG import terminals?
- VNI capacity from New South Wales is forecast to increase to 195 TJ/d
 - (note subsequent announcement)
- Dandenong LNG will continue to supply peak shaving gas during periods of unforecast or very high hourly gas demands

VGPR demand forecast by sector



Table 3 Total annual gas consumption forecast, 2021-25 (PJ/y)

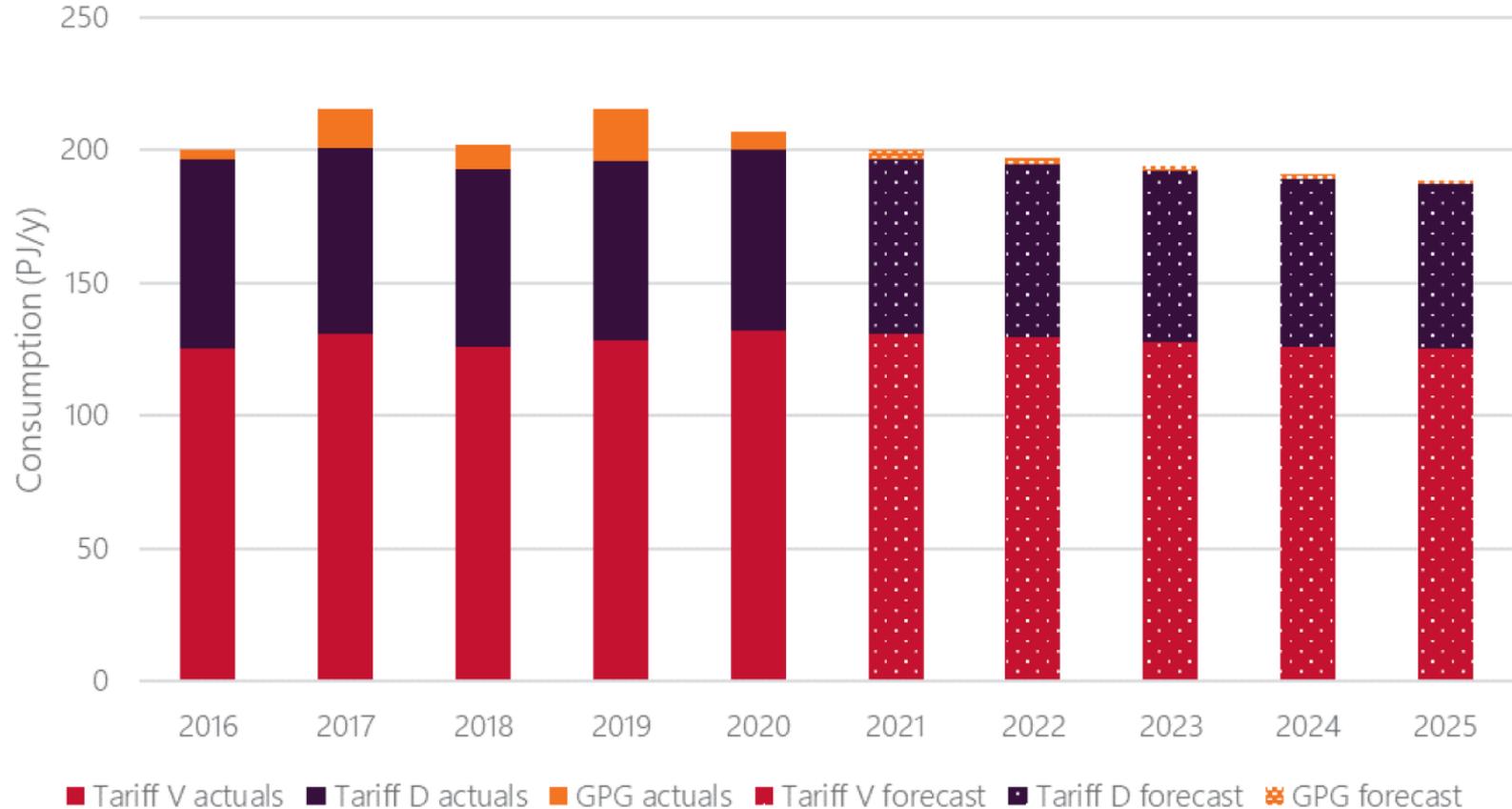
	2021	2022	2023	2024	2025	Change over outlook
Tariff V	131	130	128	126	125	-4.6%
Tariff D	65.6	65.3	64.5	63.6	62.4	-5.0%
System consumption	197	195	192	189	187	-4.7%
DTS GPG consumption	3.19	2.19	1.90	1.77	0.92	-71.1%
Total DTS consumption	200	197	194	191	188	-5.8%
Non-DTS system consumption	1.40	1.41	1.42	1.42	1.41	1.2%
Non-DTS GPG consumption	5.38	3.36	3.13	2.99	1.69	-68.6%
Victorian GPG Consumption	8.57	5.55	5.03	4.76	2.61	-69.5%
Total Victorian consumption	207	202	199	196	192	-7.4%

Note: totals and change over outlook percentage may not add up due to rounding.

VGPR demand forecast trend



Figure 6 Historical and forecast total annual gas consumption, 2016-25 (PJ/y)



Wrap up



- **Summary of key outcomes from today**
- **Next roundtables**
 - Roundtable 7 on 16 June
 - Continue discussion about APA proposed capital expenditure program
 - Please send though responses to the Issues Paper on the capital program to help guide discussions.

**Thank you for participating,
See you in June....**



To ask any questions or provide feedback on the APA's VTS access arrangement or stakeholder engagement plans, to request an invite to an engagement session, or to arrange a private consultation, please contact:

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Or visit the VTS stakeholder engagement webpage:

<https://www.apa.com.au/about-apa/our-projects/victoria-transmission-system-access-arrangement/>

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