Final Decision

APA Victorian Transmission System (VTS)

Access Arrangement 2023 to 2027

(1 January 2023 to 31 December 2027)

Attachment 12
Demand

December 2022

AUSTRALIAN ENERGY REGULATOR

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Note

This attachment forms part of the AER's final decision on the access arrangement that will apply to APA's Victorian Transmission System (VTS) for the 2023–27 access arrangement period. It should be read with all other parts of the final decision.

As a number of issues were settled at the draft decision stage or required only minor updates, we have not prepared all attachments. The final decision attachments have been numbered consistently with the equivalent attachments to our draft decision. In these circumstances, our draft decision reasons form part of this final decision.

The final decision includes the following attachments:

Overview

Attachment 2 – Capital base

Attachment 3 – Rate of return

Attachment 4 – Regulatory depreciation

Attachment 5 – Capital expenditure

Attachment 6 – Operating expenditure

Attachment 7 – Corporate income tax

Attachment 8 – Operating expenditure incentive mechanism

Attachment 10 – Reference tariff variation mechanism

Attachment 12 – Demand

Contents

12 Demand

In this chapter, we set out our assessment of APA's demand forecast for the Victoria Transmission System (VTS) for the 2023-27 access arrangement period. At a highly simplified level[1], VTS pipeline service prices (reference tariffs) are derived by dividing APA's total revenue requirement (i.e. the sum of the revenue building blocks discussed earlier in this decision), divided by the forecast use of the system (e.g. projected injections and withdrawals from the VTS). Forecast demand will also influence the amount of operating expenditure (opex) and capital expenditure (capex) required by a network. For example, when higher demand is linked to high growth in new customers, APA is likely to require additional revenue to cover the capital and operating costs associated with such connections. Changes in demand may also indicate parts of a network that require additional investment to ensure safety and security of supply.

12.1 Final decision

Our final decision is to accept APA's proposed approach to demand forecast for the 2023–27 period. We are satisfied that APA's proposed demand forecasts comply with rule 74(2) of the National Gas Rules (NGR).

APA's initial demand forecasts were based on the Australian Energy Market Operator's (AEMO) 2021 Gas Statement of Opportunities (GSOO), Victorian Gas Planning Report (VGPR) and a report it commissioned from Oakley Greenwood.[2] AEMO issued 2022 versions of these reports in March 2022, and APA subsequently updated its demand forecasts to accommodate this new information. These also form the basis of APA's revised proposal.

The 2022 AEMO reports diverged from the previous reports, by having two central scenarios – progressive change and step change:

- **Progressive Change:** The Progressive Change scenario represents a future that delivers action towards net zero emissions through technology advancements and based on current state and federal government environmental and energy policies. AEMO is forecasting a 1.9% decrease in Victoria's annual total gas consumption over the next five years, with peak system demand remaining near current levels. Key drivers include energy efficiency savings schemes and a continuing increase in the number of new connections during the outlook period.[3]
- **Step Change:** The Step Change scenario represents a future with rapid consumer-led transformation of the energy sector, and a coordinated economy-wide approach that efficiently and effectively tackles the challenge of rapidly lowering emissions (including electrification of gas heating load), driven by consumer-led change with a focus on energy efficiency, digitalisation and step increases in global emissions policy above what

1 This formula is simplified, as, in practice, the mechanism for deriving tariffs is more complex, and involves determining specific pricing at dozens of separate injection and withdrawal points. However, in general, higher demand will lead to lower prices per unit of gas transported (as APA's fixed costs are spread over a greater volume of gas), whereas lower demand will lead to higher prices.

2 Oakley Greenwood, Issues Affecting Demand and Supply for Gas on the VTS, September 2021.

3 AEMO, Victorian Gas Planning Report Update, March 2022, p. 4.

is already committed. Under this scenario, AEMO is forecasting a reduction of 16.8% in annual gas consumption in the outlook period, and peak day system demands are forecast to reduce by approximately 18%.[4]

Progressive change more closely reflects the central scenario in the 2021 VGPR.

12.2 APA's proposal

APA's demand forecast is based on AEMO's 2022 GSOO and VGPR progressive change scenario, and adjusted the outcomes to reflect its expectations of injections and withdrawals on the VTS. APA has forecast annual and peak day gas volumes withdrawn from the VTS for the 2023–27 access arrangement period. This information is in Table 12.1 below.

Table 12.1 AER's final decision for APA withdrawal volumes

	2023	2024	2025	2026	2027
Withdrawal volumes (TJ)					
Tariffs V&D	192,883	190,774	197,335	197,343	191,206
Gas powered generation	7,100	4,000	3,500	4,400	4,657
Exports	6,294	5,778	4,051	1,778	1,072
Subtotal	206,277	200,553	204,886	203,521	196,935
Storage refill	18,100	18,100	18,100	18,100	18,100
Total	224,377	218,653	222,986	221,621	215,035
1-in-2 Peak day (TJ/day)					
Tariffs V&D	1,142.2	1,127.5	1,142.0	1,143.7	1,108.0
Gas powered generation	37.1	15.6	14.1	25.6	15.1
Exports	25.9	23.7	16.7	7.3	4.4
Total	1,205.1	1,166.8	1,172.8	1,176.6	1,127.5

Source: APA, VTS- Load and demand forecasts 2022 Update – July 2022 - Public

APA's approach to forecasting demand for varying customer groups is outlined below:

- **Residential and commercial customers (Tariff V)** – AEMO expects retail gas peak demand to fall moderately in next five years because of energy efficiency in gas appliances and electrification (progressive change scenario).
- **Industrial demand customers (Tariff D)** – APA has adopted the AEMO Progressive Change forecast of industrial demand, from the 2022 VGPR. APA forecast Tariff D demand to decrease over the 2023–27 period.

[4] Ibid, pp. 4,5

- **Gas powered generation (GPG)** – GPG is a volatile customer of gas, as it provides a firming function where other forms of electricity production are low (e.g. thermal generator outages, periods of low renewables generation). The GPG usage is forecast to fall in 2024, but remain somewhat stable for the remainder of the period.
- **Interstate transfers (exports)** – APA has assumed zero PJ per annum export at VicHub, and has forecast exports out of Culcairn (NSW to Victoria interconnect) to fall over the period of the new access arrangement.
- **Flows into storage (UGS/LNG refill)** – APA forecast flows into Dandenong LNG and Iona UGS using average withdrawals over the last three observable years. This leads to an annual withdrawal of 18.1 TJs per year.

12.3 Assessment approach

The NGR requires APA to submit access arrangement information that includes:

- usage of the pipeline over the earlier access arrangement period showing minimum, maximum and average demand for each receipt and delivery point; and user numbers for each receipt or delivery point;
- to the extent that it is practicable to forecast pipeline capacity and utilisation of pipeline capacity over the access arrangement period, a forecast of pipeline capacity and utilisation of pipeline capacity over that period and the basis on which the forecast has been derived.

The NGR also require that forecasts and estimates:

- are arrived at on a reasonable basis; and
- represent the best forecast or estimate possible in the circumstances.

We consider that there are two important considerations in assessing whether demand forecasts are arrived at on a reasonable basis and whether they represent the best forecasts possible in the circumstances.[5] These are:

- the appropriateness of the forecast methodology – this involves consideration of how the demand forecast has been developed; and
- whether or not relevant factors have been considered in developing demand forecasts.

To determine whether APA's proposed demand forecasts were arrived at on a reasonable basis and are the best possible forecasts in the circumstances, we reviewed:

- information provided by APA
- the data inputs used to implement the forecasting methodology.

In making our draft decision, we had regard to:

- information provided by APA as part of its proposed access arrangement

- advice from Zincara in its review of APA's Southwest Pipeline (SWP) and Western Outer Ring Main (WORM)
- additional information provided by APA in response to our information requests
- the Victorian gas substitution roadmap
- AEMO's 2021 and 2022 GSOO and VGPR
- stakeholder submissions.

12.3.1 Interrelationships

As noted earlier, reference tariffs are derived using demand forecasts. Demand forecasts also affect the amount of augmentation capex that may be required to increase network capacity, network extensions to serve new customers, and associated opex.

12.4 Reasons for the draft decision

In our draft decision, we included APA's demand forecast as a placeholder, pending further analysis.

12.4.1 APA's use of AEMO's progressive change scenario

APA's forecast of demand is based on AEMO's progressive change scenario. In keeping with this, APA's forecast is that demand will fall by a modest amount over the next five years, compared to the more aggressive reductions forecast by the step change scenario.

We note that there is significant uncertainty relating to future gas consumption in Victoria. The Victorian gas substitution roadmap was released in July, and contains a suite of measures aimed at reducing gas consumption. These are targeted at Tariff V customers (residential and commercial), more so than large industrial users and gas powered generation. The changes include:

- expansion of the Victorian Energy Upgrades (VEU) scheme with enhanced incentives to switch to electric appliances;
- phasing out existing rebates for the installation of natural gas appliances by the end of 2023;
- changes to Victoria Planning Provisions in 2022 to remove the requirement for new housing developments to be connected to gas; and
- adopting the 7-Star Standard for new home construction in the new National Construction Code which takes account of home energy appliances in addition to the thermal shell of the building.[6]

We expect that these changes are likely to drive lower consumption in the residential and commercial sectors. However, it is not clear whether these will lead to the modest falls forecast by the progressive change scenario, or the larger ones forecast under the step change scenario.

[6] MGN, MGN Victoria – Revisions to Final Plan 2023-28 – Attachment 13.4 – GSR Response – Revision to Demand – Public, p.4.

We consider that, for the VTS, the choice of progressive or step change is largely important in determining who bears the volume risk of the forecast being inaccurate – APA or its customers. As noted earlier, APA's network tariffs are set by dividing total revenue by demand. Higher demand will lead to lower prices, whereas lower demand will lead to higher prices, provided the total revenue remains the same. In APA's case, it has not proposed any capex related to growth, so a reduction in the demand forecast would not lead to a reduction in APA's total revenue requirement. Consequently, by adopting the higher of the two AEMO central scenarios, APA has essentially chosen to charge lower tariffs, and bears the risk that demand will be lower than forecast.

Given the uncertainty surrounding future gas consumption in Victoria, and the effect of government policies in reducing demand, we are satisfied with APA's proposal to adopt the higher of AEMO's two central demand scenarios, and consider this the best forecast in the circumstances.

We are open to APA submitting an application mid-period to vary its 2023-27 access arrangement if the trajectory of its demand is substantially different to our final decision. We would expect APA to engage with its customers if actual demand turns out to be materially higher than our final decision by mid-period.

12.4.2 Demand forecast for Residential and commercial customers (Tariff V)

Our final decision is to accept APA's forecast of Tariff V demand for the 2023–27 access arrangement period. We accept APA's approach to forecasting Tariff V demand by adopting AEMO's forecast. APA forecast demand for retail users primarily by reviewing existing contracts and assessing the probability of contract renewal. APA's forecast is consistent with the expectations of future contracted capacity.

12.4.3 Demand forecasts for Tariff D

We are satisfied that APA's Tariff D forecast over the 2023–27 access arrangement period is arrived at on a reasonable basis. Tariff D demand is highly asymmetrical because a relatively small number of large users accounting for a substantial portion of overall industrial demand. Therefore, if any number of those large users decide to reduce their demand, the impact will be large.

12.4.4 Demand forecasts for Gas Powered Generation

We are satisfied that APA's GPG consumption for the state of Victoria is arrived at on a reasonable basis.

GPG demand is often variable. GPG is mostly used as a firming fuel, due to its fast start characteristics, and is often bid into the market at higher prices. The demand for firming services, and hence GPG, is greater when either electricity demand is high, or supply is low because of external factors, such as the unavailability of renewables, or a thermal generator being out of service. AEMO has forecast a downward trend in GPG over the period, driven by an increase in renewable generation.

12.4.5 Demand forecasts for interstate transfers (exports)

We are satisfied that APA's export forecast is arrived at on a reasonable basis. APA has forecast falls in exports over the access arrangement period.

12.4.6 Demand forecasts for flows into storage (UGS/LNG refill)

We are satisfied that APA's forecast for withdrawals by UGS and LNG storage are arrived at on a reasonable basis. APA forecast flows into Dandenong LNG and Iona UGS using average withdrawals over the last three observable years.

12.4.7 Forecast pipeline capacity and utilisation

The NGR require that, to the extent it is practicable to forecast pipeline capacity over the access arrangement period, the access arrangement information should include forecast pipeline capacity and utilisation of pipeline capacity over the access arrangement period.

APA's access arrangement information includes this information. APA's capacity forecast is consistent with historical capacity and reflects the proposal to expand the SWP and finish the WORM. We consider the utilisation forecast reflects APA's forecasts of reductions in GPG and industrial load.

12.4.8 Minimum, maximum and average demand

The NGR require that access arrangement information includes minimum, maximum and average demand for each receipt or delivery point for the earlier access arrangement period. For a transmission pipeline, the NGR also require the access arrangement information to include the user numbers for each receipt or delivery point. APA's access arrangement information includes this information and satisfies the requirements of the NGR in this regard.

12.4.9 Longer term outlook

APA also included a longer term outlook in its revised proposal. In this, it forecast that, while it is comfortable with the progressive change scenario in the 2023-27 period, it considers that, longer-term, carbon reduction policies will have a larger impact, and the step change scenario is more likely.

We consider this is a reasonable assumption, given the net zero target of 2050, and the need to implement policies to reduce fossil fuel consumption. We note that this view does not bind the AER to accept future demand forecasts based on the step change scenario.

A Shortened forms

Shortened form	Extended form
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
APA / APA VTS	APA VTS Australia (Operations) Pty Ltd and APA VTS Australia (NSW) Pty Ltd
Capex	Capital Expenditure
GPG	Gas Powered Generation
GSOO	Gas Statement of Opportunities
LNG	Liquified Natural Gas
NGR	National Gas Rules
Opex	Operating Expenditure
SWP	Southwest Pipeline
UGS	Underground Gas Storage
VGPR	Victorian Gas Planning Report
VTS	Victorian Transmission System
WORM	Western Outer Ring Main