



**DRAFT DECISION
APA VTS Australia
Gas access arrangement
2018 to 2022**

Attachment 13 – Demand

July 2017

© Commonwealth of Australia 2017

This work is copyright. In addition to any use permitted under the Copyright Act 1968, all material contained within this work is provided under a Creative Commons Attributions 3.0 Australia licence, with the exception of:

- the Commonwealth Coat of Arms
- the ACCC and AER logos
- any illustration, diagram, photograph or graphic over which the Australian Competition and Consumer Commission does not hold copyright, but which may be part of or contained within this publication. The details of the relevant licence conditions are available on the Creative Commons website, as is the full legal code for the CC BY 3.0 AU licence.

Requests and inquiries concerning reproduction and rights should be addressed to the:

Director, Corporate Communications
Australian Competition and Consumer Commission
GPO Box 4141, Canberra ACT 2601

or publishing.unit@acc.gov.au.

Inquiries about this publication should be addressed to:

Australian Energy Regulator
GPO Box 520
Melbourne Vic 3001

Tel: 1300 585 165

Email: AERInquiry@aer.gov.au

Note

This attachment forms part of the AER's draft decision on the access arrangement for APA VTS Australia for 2018-22. It should be read with all other parts of the draft decision.

The draft decision includes the following documents:

Overview

Attachment 1 - Services covered by the access arrangement

Attachment 2 - Capital base

Attachment 3 - Rate of return

Attachment 4 - Value of imputation credits

Attachment 5 - Regulatory depreciation

Attachment 6 - Capital expenditure

Attachment 7 - Operating expenditure

Attachment 8 - Corporate income tax

Attachment 9 - Efficiency carryover mechanism

Attachment 10 - Reference tariff setting

Attachment 11 - Reference tariff variation mechanism

Attachment 12 - Non-tariff components

Attachment 13 - Demand

Contents

Note	13-2
Contents	13-3
Shortened forms	13-4
13 Demand	13-5
13.1 Draft decision	13-5
13.2 APA’s proposal	13-6
13.3 Assessment approach	13-8
13.4 Reasons for draft decision	13-10
13.4.1 Minimum, maximum and average demand.....	13-10
13.4.2 Forecast pipeline capacity and utilisation	13-11
13.4.3 Demand forecasts for Tariff V.....	13-11
13.4.4 Demand forecasts of flows into storage.....	13-12
13.4.5 Demand forecasts for Tariff D	13-13
13.4.6 Demand forecasts for gas powered generation	13-13
13.4.7 Demand forecasts for interstate transfers.....	13-15
13.5 Revisions	13-16

Shortened forms

Shortened form	Extended form
AER	Australian Energy Regulator
AGN	Australian Gas Networks
ATO	Australian Tax Office
capex	capital expenditure
CAPM	capital asset pricing model
CPI	consumer price index
CCP	Consumer Challenge Panel
DRP	debt risk premium
EBSS	Efficiency Benefit Sharing Scheme
ERP	equity risk premium
Expenditure Guideline	Expenditure Forecast Assessment Guideline
gamma	Value of Imputation Credits
GSL	Guaranteed Service Level
MHQ	maximum hourly quantity
MRP	market risk premium
NGL	national gas law
NGO	national gas objective
NGR	national gas rules
NPV	net present value
opex	operating expenditure
PTRM	post-tax revenue model
RAB	regulatory asset base
RBA	Reserve Bank of Australia
RIN	regulatory information notice
TAB	Tax asset base
UAFG	Unaccounted for gas
WACC	weighted average cost of capital
WPI	Wage Price Index

13 Demand

This attachment sets out our assessment of the demand forecasts in APA's access arrangement proposal for the Victorian Transmission System (VTS) for the 2018–22 access arrangement period. Demand is an important input into the derivation of APA's reference tariffs. It also affects operating expenditure (opex) and capital expenditure (capex).¹

13.1 Draft decision

Based on all the information before us, we do not accept APA's proposed total VTS withdrawal volumes for the 2018–22 access arrangement period.

While we accept APA's overall methodology to forecast total VTS withdrawal volumes, we have not accepted the forecasts for Tariff V and storage refill demand—components of total withdrawal volumes. We have updated the Tariff V forecast to reflect our draft decisions on the three Victorian gas distributors' proposed demand forecasts.² We have updated the storage refill demand forecast using figures from AEMO's 2017 Victorian Gas Planning Report (VGPR), which forecasts a higher volume of gas flowing into Iona Underground Storage (Iona UGS).

Our alternative forecast uses the updated data, with a resulting forecast of total VTS withdrawal volumes of 1137.0 petajoules (PJ). This is 0.56 per cent higher than APA's forecast of 1130.6 PJ over the 2018–22 access arrangement period. Our alternative demand forecasts are set out in Table 13-1.

We expect APA to further update its demand forecast where revised values are available, such as with 2016 or 2016/17 actuals and updated forecasts sourced from AEMO, when it submits its revised proposal.

With respect to APA's forecasts of the remaining components of total VTS withdrawal volumes (Tariff D, Gas Powered Generation (GPG) and demand through interstate transfers), we are satisfied that these forecasts are arrived at on a reasonable basis and are the best forecasts possible in the circumstances.³

We also are satisfied that APA's proposed peak demand forecasts (1-in-2 peak and 1-in-20 peak) are arrived at on a reasonable basis and are the best forecasts possible in the circumstances.⁴

¹ Our draft decisions on APA's capex and opex are set out in Attachments 6 and 7 to this draft decision respectively.

² AER, *Draft decision - Australian Gas Networks Victoria and Albury gas access arrangement 2018-22: Attachment 13 - Demand*, July 2017; AER, *Draft decision - AusNet Services gas access arrangement 2018-22: Attachment 13 - Demand*, July 2017; AER, *Draft decision - Multinet gas access arrangement 2018-22: Attachment 13 - Demand*, July 2017

³ NGR, r. 74(2).

⁴ NGR, r. 74(2).

The reasons for the AER's decision are discussed in Section 13.4 below.

Table 13-1 Draft decision alternative forecast of annual VTS withdrawal volumes for the 2018–22 access arrangement period.

	2018	2019	2020	2021	2022	Total
Annual (PJ)						
Tariffs V&D	181.6	179.6	177.5	176.7	175.0	890.4
GPG	5.3	1.8	1.9	0.6	0.8	10.3
Culcairn	29.6	29.6	29.6	29.6	29.6	148.0
VicHub	0.0	0.0	0.0	0.0	0.0	0.0
Sub-total	216.5	211.0	209.0	206.9	205.4	1048.8
UGS/LNG refill	18.3	17.5	17.5	17.5	17.5	88.2
Total	234.7	228.5	226.4	224.4	222.9	1137.0
1-in-2 Peak (TJ/day)						
Tariffs V&D	1151.1	1142.3	1131.4	1123.6	1115.1	
GPG	8.3	5.3	7.3	8.7	14.0	
Culcairn	57.5	57.5	57.5	57.5	57.5	
VicHub	0.0	0.0	0.0	0.0	0.0	
UGS/LNG refill	0.0	0.0	0.0	0.0	0.0	
Total	1216.9	1205.1	1196.2	1189.7	1186.6	
1-in-20 Peak (TJ/day)						
Per AEMO advice	1258.2	1249.1	1237.7	1229.0	1220.1	

Source: AER analysis

13.2 APA's proposal

For the purposes of the access arrangement proposal, APA requires forecasts of the annual and peak day gas volumes withdrawn from the VTS for the 2018–22 access arrangement period.⁵ APA's forecast is set out in Table 13-2.

⁵ APA Group, *Victorian Transmission System: Access Arrangement Submission*, December 2016, p. 44.

Table 13-2 APA's forecast of annual VTS withdrawal volumes for the 2018–22 access arrangement period

	2018	2019	2020	2021	2022	Total
Annual (PJ)						
Tariffs V&D	182.0	179.9	177.6	176.7	174.9	891.1
GPG	5.3	1.8	1.9	0.6	0.8	10.3
Culcairn	29.6	29.6	29.6	29.6	29.6	148.0
VicHub	0.0	0.0	0.0	0.0	0.0	0.0
Sub-total	216.9	211.3	209.1	206.9	205.3	1049.4
UGS/LNG refill	16.1	16.3	16.3	16.3	16.3	81.2
Total	232.9	227.6	225.3	223.2	221.6	1130.6
1-in-2 Peak (TJ/day)						
Tariffs V&D	1151.1	1142.3	1131.4	1123.6	1115.1	
GPG	8.3	5.3	7.3	8.7	14.0	
Culcairn	57.5	57.5	57.5	57.5	57.5	
VicHub	0.0	0.0	0.0	0.0	0.0	
UGS/LNG refill	0.0	0.0	0.0	0.0	0.0	
Total	1216.9	1205.1	1196.2	1189.7	1186.6	
1-in-20 Peak (TJ/day)						
Per AEMO advice	1258.2	1249.1	1237.7	1229.0	1220.1	

Source: APA Access Arrangement Submission, Table 3-9, p. 45.

APA's approach to forecasting demand differs between customer classes and the functions it performs.⁶

- For residential and commercial demand (Tariff V users), APA has adopted the three Victorian gas distributors' (Australian Gas Networks, Multinet Gas and AusNet Services) demand forecasts. We are also currently reviewing the Victorian distributors' access arrangement proposals. APA forecast Tariff V demand to decrease by 0.5 per cent over the 2018–22 access arrangement period. This compares to a 1.1 per cent per year increase in the current access arrangement period.
- For Industrial demand (Tariff D users), APA has adopted the AEMO "Weak" forecast of industrial demand, from AEMO's 2016 National Gas Forecasting Report

⁶ APA VTS, *Victorian Transmission System Revision Proposal submission* – January 2017, pp. 31-44.

(NGFR). APA considered that comments in AEMO's NGFR indicate a level of pessimism not reflected in the "Neutral" forecast. APA forecast Tariff D demand to decrease by 2.0 per cent over the 2018–22 access arrangement period. This compares to a 0.8 per cent per year increase in the previous access arrangement period.

- For Gas-fired Power Generation (GPG) demand, APA engaged Frontier Economics (Frontier) to advise on the forecast of VTS-connected GPG load, without an input assumption of a cost on carbon emissions.⁷ APA considered that the assumption of a carbon price is inconsistent with current government policy and should not be incorporated into forecasts. The Frontier report found that GPG demand would increase in the short term (2017–2018) in response to the Hazelwood plant closure. Its demand forecast drops sharply thereafter as a result of new renewable capacity driven by the Large Scale Renewable Energy Target (LRET) and Victorian Renewable Energy Target (VRET).⁸
- For interstate transfers, APA has assumed zero PJ per annum export at VicHub,⁹ and has forecast exports out of Culcairn (NSW to Victoria interconnect) to remain at estimated 2017 levels.¹⁰
- For flows into storage, APA forecast flows into Dandenong LNG refill to remain at 2015 levels, and flows into Iona UGS are estimated from AEMO's modelling of withdrawals included in the 2016 VGPR.¹¹

APA's forecast of refill volumes into the Iona UGS takes into account the effect on demand from its proposal to build a Western Outer Ring Main (WORM) over the 2018–22 access arrangement period. As set out in Attachment 6, our draft decision is to accept the proposed forecast capex associated with constructing the WORM. APA forecast that the WORM will not affect volumes (that is, the same amount of gas is transported) but will allow for higher refill rates into the Iona UGS.¹²

13.3 Assessment approach

The NGR require access arrangement information for a full access arrangement proposal for a transmission pipeline to include:

⁷ APA considered AEMO's GPG forecast from its 2016 NGFR, but notes that AEMO has assumed a proxy carbon abatement cost in this forecast; APA VTS, *Victorian Transmission System Revision Proposal submission* – January 2017, pp. 35-43.

⁸ APA VTS – *Attachment C1 - Frontier Economics, Victorian GPG forecasts: a report prepared for APA Group*, 21 December 2016, p. v.

⁹ This is consistent with our 2013-17 final decision, and discussed in Section 13.4.7.

¹⁰ APA Group, Response to information request #1, 22 February 2017, p. 6.

¹¹ APA Group, Response to information request #1, 22 February 2017, p. 5.

¹² APA VTS, *Supplement to Initial Access Arrangement Proposal - Business Case for Western Outer Ring Main (WORM) Project*, 20 April 2017, p. 9.

- 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;¹³
- 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.¹⁴

The NGR also require that forecasts and estimates:¹⁵

- 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.¹⁶ 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 taken into account in developing demand forecasts.

To determine whether APA's proposed demand forecasts are 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 ACIL Allen in its review of APA's demand forecasts. ACIL Allen reviewed APTPPL's demand forecasts and assisted in developing alternative demand forecasts where we were not satisfied that forecasts comply with the requirements of the NGR;
- additional information provided by APA in response to our information requests; and
- APA's supplementary capex submission on the proposed WORM.¹⁷

¹³ NGR, r. 72(1)(a)(iii).

¹⁴ NGR, r. 72(1)(d).

¹⁵ NGR, r. 74(2).

¹⁶ NGR, r. 74(2).

¹⁷ APA VTS, *VTS Supplementary access arrangement submission revised for Western Outer Ring Main (WORM)*, 15 May 2017.

Interrelationships

Tariffs depend on estimates on forecast total demand (GJ/day). Changes in these forecasts will translate into changed tariffs. In simple terms, tariffs are determined by cost divided by total demand (GJ/day), such that an increase in forecast demand has the effect of reducing the tariff and vice versa.

Demand forecasts also affect augmentation capex to increase network capacity, network extensions to serve new customers, and associated opex.

13.4 Reasons for draft decision

Based on all the information before us, we do not accept APA's proposed total VTS withdrawal volumes for the 2018–22 access arrangement period.

While we are satisfied that APA's overall methodology to forecast total VTS withdrawal volumes is consistent with rule 74(2) of the NGR, we have not accepted the forecasts for Tariff V and storage refill demand—components of total withdrawal volumes.

We have updated the Tariff V forecast to reflect our draft decisions on the three Victorian gas distributors' demand forecasts.¹⁸ We have updated the storage refill demand forecast using figures from AEMO's 2017 Victorian Gas Planning Report (VGPR), which forecasts a higher volume of gas flowing into Iona UGS.

With respect to APA's forecasts of the remaining components to total VTS withdrawal volumes, namely - Tariff D, Gas Powered Generation (GPG) and demand through interstate transfers - we are satisfied that these forecasts are consistent with rule 74(2) of the NGR.

We also satisfied that APA's proposed peak demand forecasts (1-in-2 peak and 1-in-20 peak) are consistent with rule 74(2) of the NGR.

The reasons for our decision are discussed further below.

13.4.1 Minimum, maximum and average demand

As noted above, the NGR require the access arrangement information to include minimum, maximum and average demand for each receipt or delivery point for the earlier access arrangement period.¹⁹ For a transmission pipeline, the NGR also require the access arrangement information to include the user numbers for each receipt or

¹⁸ AER, *Draft decision - Australian Gas Networks Victoria and Albury gas access arrangement 2018-22: Attachment 13 - Demand*, July 2017; AER, *Draft decision - AusNet Services gas access arrangement 2018-22: Attachment 13 - Demand*, July 2017; AER, *Draft decision - Multinet gas access arrangement 2018-22: Attachment 13 - Demand*, July 2017.

¹⁹ NGR, r. 72(1)(a)(iii)(A).

delivery point.²⁰ APA's access arrangement information includes this information and satisfies the requirements of the NGR in this regard.²¹

13.4.2 Forecast pipeline capacity and utilisation

As noted above, 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.²²

APA's access arrangement information includes this information and satisfies the requirements of the NGR in this regard. We have formed this view on the basis that the capacity forecast is consistent with historical capacity, and reflects the proposal to expand the South West Pipeline (SWP). We have also considered APA's proposed WORM in coming to our position.²³ We are satisfied that the utilisation forecast reflects APA's forecasts of reductions in GPG and industrial load.²⁴

13.4.3 Demand forecasts for Tariff V

Our draft decision is to not accept APA's forecast of Tariff V demand for the 2018–22 access arrangement period. We accept APA's approach to forecasting Tariff V demand by adopting the three Victorian gas distributors' respective forecasts. However, we have revised Tariff V demand on the VTS given our draft decision to not accept AusNet's' and Multinet's demand forecasts.²⁵ We therefore developed alternative demand forecasts for these businesses, which have been used as inputs into our alternative forecast for Tariff V demand on the VTS.

There is a minor discrepancy that we have identified between the Tariff V demand forecasts submitted by AGN in its access arrangement proposal (which we accepted) and those provided by AGN to APA. We have applied the forecast submitted by AGN in its access arrangement proposal.

Overall, our alternative Tariff V demand forecast is 0.12 per cent lower than APA's proposal.

²⁰ NGR, r. 72(1)(a)(iii)(B).

²¹ APA VTS, *Victorian Transmission System: Access Arrangement Information*, 21 December 2016, pp. 13, 15, 26–28.

²² NGR, r. 72(1)(d).

²³ APA VTS, *VTS Supplementary access arrangement submission revised for Western Outer Ring Main (WORM)*, 15 May 2017, pp. 12–13.

²⁴ APA Group, Response to information request #12, 29 May 2017, pp. 2–4.

²⁵ AER, *Draft decision - AusNet Services gas access arrangement 2018-22: Attachment 13 - Demand*, July 2017; AER, *Draft decision - Multinet gas access arrangement 2018-22: Attachment 13 - Demand*, July 2017

13.4.4 Demand forecasts of flows into storage

Our draft decision is to not accept APA's forecast of gas flows into storage for the 2018–22 access arrangement period.

We accept APA's approach to forecasting gas flows for Iona UGS and Dandenong LNG refill, however, we have updated the forecast for Iona UGS refill with more recent data.

APA's forecasts of refill volumes into Iona UGS are based on AEMO's 2016 VGPR. After APA submitted its proposal AEMO released its March 2017 VGPR, which contains updated information about these refill volumes. Based on this latest report, AEMO forecast an increase in flows of gas into storage at Iona UGS relative to the forecast in its 2016 VGPR. Based on AEMO's report, we estimate that refill volumes will increase to 16.2 PJ/year in 2018-19, and to 15.4 PJ/year in subsequent years of the access arrangement period.

With regard to the impact of the WORM, we do not accept APA's view that it will have no impact on overall volumes of gas flowing into Iona UGS.²⁶ In light of new information, including from submissions received, we consider that there will be a greater volume of gas flowing into Iona UGS than APA forecast over the 2018–22 access arrangement period. The Consortium of Gas Market Participants (the Consortium) submitted that gas production at Port Campbell has begun to decline and will continue to decline.²⁷ The Consortium explained that consequently, South Australia will now need to source gas from Gippsland, which will need to be placed in storage at Iona UGS prior to transport to South Australia. This view is supported by ACIL Allen.²⁸ AEMO also highlighted the declining gas production from Port Campbell, and constraints on filling Iona UGS from 2021 without construction of the WORM.²⁹ We have used AEMO's 2017 VGPR forecast for our alternative forecast. We encourage APA, in its revised proposal, to consider further the implications on its demand forecast of developments in the gas industry and the constraints on gas flows that would be eased with construction of the WORM.

With regard to forecast Dandenong LNG refill volume, we are satisfied that APA's use of actual volumes from 2015 to forecast over the 2018–22 access arrangement period is a reasonable basis for its forecast, and that its forecast represents the best estimate possible in the circumstances.³⁰

Our overall alternative forecast of flows into storage for an average of 17.6 PJ/year is 8.6 per cent higher than APA's forecast for an average of 16.2 PJ/year over the 2018–

²⁶ APA VTS, *VTS Supplementary access arrangement submission revised for Western Outer Ring Main (WORM)*, 15 May 2017, pp. 10-13.

²⁷ Consortium of Gas Market Participants, *Joint submission to the Australian Energy Regulator - APA VTS Access Arrangement 2018-22*, 3 March 2017p. 4.

²⁸ ACIL Allen, *Review of demand forecasts for APA VTS*, June 2017, pp. 25-26.

²⁹ AEMO, *APA VTS Access Arrangement 2018–2022 – Western Outer Ring Main*, 16 May 2017, pp. 2-7.

³⁰ NGR, r. 74(2).

22 access arrangement period. We expect APA to revise its forecasts of Iona UGS and Dandenong LNG refill with the most recent data available to it in its revised access arrangement proposal.

13.4.5 Demand forecasts for Tariff D

We are satisfied that APA's Tariff D forecast for an average of 61.7 PJ/year over the 2018–22 access arrangement period is arrived at on a reasonable basis and represents the best estimate possible in the circumstances.³¹ Consistent with ACIL Allen's assessment, we consider APA's adoption of the 'weak' demand scenario from AEMO's 2016 NGFR is reasonable.

ACIL Allen advised that Tariff V demand is highly asymmetrical, that is, there a relatively small number of large users accounting for a substantial portion of overall industrial demand.³² A curtailment of operations by any one of the large consumers could result in a change in total industrial gas consumption that is greater than the difference between AEMO's 'weak' and 'neutral' demand scenarios. We therefore agree with ACIL Allen's view that due to the uncertainties currently facing Victorian industrial gas users, the weak scenario is at least as likely to materialise as the neutral scenario, and there is no clear basis requiring APA to adopt the higher forecast.

13.4.6 Demand forecasts for gas powered generation

We are satisfied that APA's GPG forecast for an average volume of 2.1 PJ/year over the 2018–22 access arrangement period is arrived at on a reasonable basis and represents the best forecast possible in the circumstances.³³ We agree with ACIL Allen that the assumptions and modelling approach adopted by Frontier are sound.³⁴

We also agree that APA's forecast of 1-in-2 and 1-in-20 peak demand is arrived at on a reasonable basis and represents the best forecast possible in the circumstances.

There are several key factors that need to be considered in forecasting GPG demand over the 2018-22 access arrangement period. These include:

- The merit order of NEM-participant gas powered generators entering operation in response to electricity prices. Two large generators, Mortlake and Bairnsdale, do not rely on the VTS for gas delivery. Any modelling assumptions that place Mortlake or Bairnsdale higher up the merit order will lead to increased output from these plants, and thus lower demand from the VTS-connected plants which operate less, and vice versa.
- Recent developments that are expected to have a significant impact on the GPG forecast:

³¹ NGR, r. 74(2).

³² ACIL Allen, *Review of demand forecasts for APA VTS*, June 2017, p.12–13.

³³ NGR, r. 74(2).

³⁴ ACIL Allen, *Review of demand forecasts for APA VTS*, June 2017, p. 23.

- The closure of the 1600 megawatt (MW) Hazelwood power generation facility at the end of March 2017.
- The introduction of the Victorian Renewable Energy Target, under which the Victorian Government has committed to Victorian renewable energy generation targets of 25 per cent by 2020 and 40 per cent by 2025.³⁵

Frontier used its own proprietary electricity investment model to model Victorian GPG performance over the 2018–22 access arrangement period.³⁶ To assess Frontier's GPG forecast methodology, ACIL Allen considered:³⁷

- the assumptions made by Frontier, including in regard to electricity demand, gas prices, renewable generation capital cost, renewable energy targets and the closure of Hazelwood;
- actual data on Victorian GPG consumption by plant between 2010 and 2016, to determine the consistency in the patterns of generation between Frontier's forecast and what is observed historically; and
- alternative forecasts of Victorian GPG consumption produced by AEMO for the 2016 NGFR and 2017 VGPR.

ACIL Allen advised that Frontier's modelling approach is sound, and the forecast of VTS-connected GPG demand is not unreasonable in the absence of any major changes in the energy market. ACIL Allen also advised that Frontier's and AEMO's 2016 NGFR forecasts are reasonably well aligned,³⁸ although AEMO's 2017 VGPR anticipates much higher levels of consumption.³⁹ We received submissions from Origin Energy and the AER's Consumer Challenge Panel (CCP11), which highlighted the differences between Frontier's and AEMO's GPG forecasts, and the need to have regard to the latest available information.⁴⁰ AEMO also notes that there have been some material changes in recent months impacting on GPG forecasts.⁴¹

³⁵ The VRET scheme is designed to deliver up to 1,500 MW of new large-scale renewable energy capacity by 2020 and up to 5,400MW by 2025.

³⁶ APA VTS – *Attachment C1 - Frontier Economics, Victorian GPG forecasts: a report prepared for APA Group*, 21 December 2016, p. 2.

³⁷ ACIL Allen, *Review of demand forecasts for APA VTS*, June 2017, pp. 13-23.

³⁸ Frontier anticipate a spike in GPG demand in 2017 to around 15 PJ/a, but with a reversion to a little over 5 PJ/year in 2018 declining to less than 1 PJ/year by 2021. AEMO's 2016 NGFR forecast also indicates an increase in consumption during 2017 and 2018, reverting to low levels by 2020.

³⁹ AEMO's 2017 VGPR has consumption increasing to 18 to 20PJ/year in 2017 and 2018 respectively, remaining at around 10PJ/year in 2021. The 2017 VGPR includes dispatch of a hypothetical new open cycle gas turbine (OCGT) to support forecast electricity demand, and has been included for technical planning purposes. ACIL Allen understands that the forecast electricity demand could be met by other means (e.g. hydro or batteries). Further, ACIL Allen's own modelling does not indicate any market need or justification for a new OCGT plant within the timeframe covered by the VGPR. ACIL Allen, *Review of demand forecasts for APA VTS*, June 2017, pp. 24-25.

⁴⁰ Origin Energy, *APA Victorian transmission system access arrangement 2018-22*, 8 March 2017, p. 2; Consumer Challenge Panel (CCP 11), *Response to proposal from APA VTS for the 2018-22 access arrangement*, 3 March 2017, p. 18.

⁴¹ AEMO, *APA VTS Access Arrangement 2018–2022 – Western Outer Ring Main*, 16 May 2017, pp. 2-6.

We have considered ACIL Allen's view that several factors are likely to limit the role of GPG in providing electricity supply in the short term. These factors include increasing levels of renewable energy supported by the LRET and VRET schemes, constrained gas supply and resulting rising gas prices, with the prospect of significant declines in gas production from the Bass Strait region within the next five years. ACIL Allen is also of the view that recent initiatives by the Australian Government aimed at bolstering domestic gas supply are unlikely to result in a return to low-cost gas that supports growth in GPG consumption.⁴²

For these reasons, on all of the information before us and particularly in light of the current uncertainty in the national energy market and high likelihood of variability in GPG volumes, we are satisfied that APA's forecast of GPG demand is arrived at on a reasonable basis and represents the best possible forecast in the circumstances.

13.4.7 Demand forecasts for interstate transfers

We are satisfied that APA's forecast of interstate transfers of 29.6 PJ/year over the 2018–22 access arrangement period is arrived at on a reasonable basis and represents the best possible forecast in the circumstances.

In the final decision for the 2013-17 VTS access arrangement, we accepted APA's assumption that zero PJ/year of gas export out of VicHub was appropriate due to the revenue effects being small and difficult to forecast.⁴³ APA has now submitted that it expects flows out of the VTS at VicHub to be approximately 2 PJ/year, corresponding with 2016 volumes.⁴⁴ Consistent with ACIL Allen's assessment we are satisfied that APA's forecast of flows through VicHub is reasonable.⁴⁵

APA's forecast for withdrawals at Culcairn is based on an expected total annual of 29.6 PJ/year. This consists of a base level of existing demand (7.3PJ/year) and an expected average utilisation across all shippers contributing to incremental demand (22.3PJ/year) once the Victorian Northern Interconnect Expansion is completed in 2017.⁴⁶ APA submitted that it expects the average utilisation of the incremental Culcairn capacity to be approximately 40 per cent, consistent with the average utilisation of incremental capacity across 2015 and 2016.

Origin Energy submitted that APA's forecast of average daily withdrawals of approximately 80 TJ/day (29.6 PJ/year) at Culcairn appears understated.⁴⁷ Origin

⁴² ACIL Allen, *Review of demand forecasts for APA VTS*, June 2017, p. 23.

⁴³ The difficulty was due to uncertainty over in the level and sourcing of the gas at VicHub, which either flowed across the VTS (with users paying cross system tariffs) or are related to injections at Longford, which attract zero tariff. APA stated that is preferable to ignore possible revenues at VicHub in generating initial tariffs and to account for any actual revenue generated in the annual tariff review process. AER, *APA GasNet final decision - Part 2_0*, March 2013, pp. 234-235.

⁴⁴ APA Group, Response to information request #1, 22 February 2017, p. 5.

⁴⁵ ACIL Allen, *Review of demand forecasts for APA VTS*, June 2017, pp. 24-26.

⁴⁶ APA Group, Response to information request #1, 22 February 2017, p. 6.

⁴⁷ Origin Energy, *APA Victorian transmission system access arrangement 2018-22*, 8 March 2017, pp. 1-2.

Energy pointed out that Culcairn withdrawals over the first two months of 2017 have averaged 97 TJ/day, at a time when the maximum withdrawal capacity was only 148 TJ/day. Origin Energy expected average flows through Culcairn into New South Wales to increase further once the full capacity of the NSW–Victoria Interconnect is made available.

ACIL Allen commented that for Origin's submission of higher demand to eventuate, the utilisation rate of the expanded capacity needs to be higher than 40 per cent. Although ACIL Allen does not discount the possibility of the utilisation rate increasing, such a view is inconsistent with its observation of a general decline in load factors (capacity utilisation) on transmission pipelines across eastern Australia.⁴⁸

On review of all the information relating to APA's overall forecast (29.6 PJ/year), we are satisfied it is arrived at on a reasonable basis and represents the best possible forecast in the circumstances. We agree with ACIL Allen that APA's forecast 40 per cent utilisation and associated volume is reasonable, because it is consistent with the observed utilisation of current capacity levels.

13.5 Revisions

We require the following revisions to make the access arrangement proposal acceptable:

Revision 13.1	Make all necessary revisions to reflect this draft decision, as set out in Table 13-1.
---------------	--

⁴⁸ ACIL Allen, *Review of demand forecasts for APA VTS*, June 2017, pp. 26-27.