

## **Advice to the Australian Energy Regulator (AER)**

---

### **Consumer Challenge Panel**

**Advice to the AER regarding a proposal from APA VTS to complete the Western Outer Ring Main (WORM) in the coming 2018-22 Access Arrangement Regulatory Period**

**Sub-Panel CCP11**

**David Prins**

**Chris Fitz-Nead**

**Bev Hughson**

**6 June 2017**

**Contents**

- Advice to the Australian Energy Regulator (AER)..... 1
- 1. Background..... 3
  - 1.1. APA’s regulatory proposal – 3 January 2017..... 3
  - 1.2. APA’s supplement to its AA proposal – 20 April and 15 May 2017..... 3
  - 1.3. Documents referenced in this advice..... 4
    - 1.3.1. Documents relating to the regulatory process regarding the 2018-22 AA period..... 4
    - 1.3.2. Documents relating to the 2013-17 AA period ..... 4
    - 1.3.3. AEMO’s major planning and forecasting reports for the gas industry..... 4
    - 1.3.4. AEMO’s plan and outlook for Victorian gas operations in the 2017 winter ..... 4
    - 1.3.5. AEMO Declared Wholesale Gas Market Notices (Victoria)..... 4
- 2. Why APA is bringing forward its proposal to build the WORM ..... 5
  - 2.1. What has changed to require the WORM earlier than previously envisaged ..... 5
  - 2.2. The role of gas storage at Iona ..... 9
- 3. Benefits that result from building the WORM ..... 12
  - 3.1. Ensuring adequate capacity for refill of Iona UGS..... 12
  - 3.2. Some increased capacity for SWP injections into VTS ..... 12
  - 3.3. Security of supply ..... 12
  - 3.4. Operational benefits..... 12
  - 3.5. Reducing reliance on Brooklyn Compressor station site..... 12
  - 3.6. Future growth..... 12
- 4. Analysis of APA’s Supplementary Proposal against the National Gas Rules..... 14
  - 4.1. NGR requirements for conforming capex ..... 14
  - 4.2. The basis of the APA claim that its supplementary proposal is conforming capex in accord with rule 79 of the NGR..... 15
    - 4.2.1. Is the capital expenditure necessary to maintain the safety and integrity of services. 15
    - 4.2.2. Is the capital expenditure such as would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of providing services..... 18
- 5. Effect on the Regulated Asset Base (RAB)..... 19
- 6. Tariffs..... 20
- 7. Conclusion ..... 21

# 1. Background

## 1.1. APA's regulatory proposal – 3 January 2017

On 3 January 2017, the AER received a gas access arrangement (AA) proposal from APA VTS Australia (Operations) Pty Ltd for the Victorian Transmission System for the period 1 January 2018 to 31 December 2022.

In its proposal, APA discussed the Western Outer Ring Main (WORM) and its potential completion in a future AA period. In its capital expenditure proposal, APA included expenditure to purchase easements in the forthcoming 2018-22 AA period, which might otherwise be more expensive to purchase in a future period.

APA's proposal was discussed at a public forum held in Melbourne on 1 February 2017. The APA proposal was open to public submissions from 10 January to 3 March 2017.

Besides the submissions from other stakeholders, CCP11 provided its advice to the AER on APA's proposal on 3 March 2017.

Following the closing date of 3 March 2017 for submissions on the AA proposal, the AER is preparing its draft decision. As set out in the AER's presentation at the public forum on 1 February, its timetable for this process is as shown in the Table below.

Milestone	Date
Proposals published	10 January 2017
Public forum	1 February 2017
Stakeholder submissions on proposals	3 March 2017
AER issues draft decision	29 June 2017
Revised proposals submitted	14 August 2017
Stakeholder submissions on draft decisions and revised proposals	12 September 2017
AER issues final decision	30 November 2017
Revised access arrangements commence	1 January 2018

## 1.2. APA's supplement to its AA proposal – 20 April and 15 May 2017

On 20 April 2017, APA provided the AER with a supplement to its initial proposal, in the form of what it called a business case for completion of the WORM project as a matter of priority in the coming 2018-22 AA period rather than in a later AA period. APA provided a further supporting document on 15 May 2017.

APA's change of plan was said to result from new information from AEMO that had not been available when it submitted its original AA proposal for 2018-22 in January.

The AER has asked CCP11 to provide advice on APA's business case for the WORM in the 2018-22 AA period. This paper comprises that advice from CCP11 to the AER.

APA's supplement to its AA proposal has been placed on the AER's website and is therefore publicly available. The AER has consulted with AEMO and has sought CCP's advice, but has not initiated a formal consultation process on this supplement with any other party or with stakeholders at large.

Therefore, as shown in the Table above, the first opportunity that stakeholders at large will have to make formal submissions on the supplement will be when they are consulted in August on the AER's draft decision and APA's subsequent revised proposal.

### **1.3. Documents referenced in this advice**

CCP11 has reviewed various documents in preparing this advice. The key documents that CCP11 has reviewed that are discussed and referenced in this advice are as follows.

#### **1.3.1. Documents relating to the regulatory process regarding the 2018-22 AA period**

Documents relating to the regulatory process regarding the APA 2018-22 AA period are available on the AER website at <https://www.aer.gov.au/networks-pipelines/determinations-access-arrangements/apa-victorian-transmission-system-access-arrangement-2018-22>

In particular, APA's proposal, public forum presentations, public submissions on APA's proposal and documents related to APA's supplement to its proposal are available at <https://www.aer.gov.au/networks-pipelines/determinations-access-arrangements/apa-victorian-transmission-system-access-arrangement-2018-22/proposal>

#### **1.3.2. Documents relating to the 2013-17 AA period**

Documents relating to the 2013-17 AA period are available on the AER website at <https://www.aer.gov.au/networks-pipelines/determinations-access-arrangements/apa-gasnet-access-arrangement-2013-17>

#### **1.3.3. AEMO's major planning and forecasting reports for the gas industry**

AEMO's webpage concerning major planning and forecasting reports for the gas industry at <https://www.aemo.com.au/Gas/National-planning-and-forecasting> provides access to the 2017 Gas Statement of Opportunities (GSOO) and the 2017 Victorian Gas Planning Report.

#### **1.3.4. AEMO's plan and outlook for Victorian gas operations in the 2017 winter**

A document and presentations related to AEMO's plan and outlook for Victorian gas operations in the 2017 winter are available on the AEMO website at <https://www.aemo.com.au/Gas/Declared-Wholesale-Gas-Market-DWGM/Victorian-gas-operations>

#### **1.3.5. AEMO Declared Wholesale Gas Market Notices (Victoria)**

Of relevance to this issue, AEMO issued its "Threat to System Security Notice - SWP to Port Campbell constraint" on 27 March 2017. This is available on the AEMO website at <https://www.aemo.com.au/Gas/Declared-Wholesale-Gas-Market-DWGM/Market-notices>

## 2. Why APA is bringing forward its proposal to build the WORM

APA's new proposal to build the WORM in the 2018-22 AA period is based on AEMO's changed forecasts for gas production and consumption.

### 2.1. What has changed to require the WORM earlier than previously envisaged

The AEMO Threat to System Security Notice sets out two major changes of circumstances that have given rise to this notice:

- Production levels at Port Campbell are expected to decline.
- Summer 2017-18 gas powered generation (GPG) demand is forecast to increase after the Hazelwood Power Station closure.

In parallel, APA's 15 May supplementary submission states:

*Critically, between the submission of the January AA proposal and March 2017 when AEMO's GSOO and VGPR were released, a number of market changes occurred that increased uncertainty in relation to forecast gas demand across south eastern Australia, mostly impacting expectations for GPG, including:*

*South Australian electricity and gas supply issues, and resulting SA Government intervention in the market; and*

*Federal Government intervention in the gas market through a producer gas supply guarantee, and more recently the imposition of export constraints on gas if certain conditions are met.*

*In this time the market has also experienced the shutdown of the Hazelwood generator. The Portland Aluminium smelter, a major user of electricity, also announced that it had secured arrangements to allow its continued operation, where under some forecasts it had previously been assumed to close.*

AEMO's Victorian Gas Planning Report for 2017 also forecasts decline in production at Gippsland.

At the same time that there is reduction in the volumes of Victorian gas available for end users of gas in Victoria, APA has invested in expanding the Victorian Northern Interconnect (VNI) to enable increased exports of gas from Victoria to New South Wales via Culcairn.

These factors are illustrated in the following figures and tables that have been copied from AEMO's 2017 Victorian Gas Planning Report. Please note that the figure and table captions (numbering and titles) are from the AEMO report; hence they are not consecutive in this paper.

Table 3 and Figure 1 from AEMO's 2017 Victorian Gas Planning Report show the expected ongoing decline in gas production by peak day and annually.

**Table 3 Peak day production supply, 2017 – 21**

Forecast value (TJ/d)	2017	2018	2019	2020	2021
Total available MDQ supply	1,816	1,363	1,343	1,277	711
Total available and prospective MDQ supply	1,816	1,615	1,585	1,539	1,346

**Figure 1 Annual production (petajoules per year) by location**

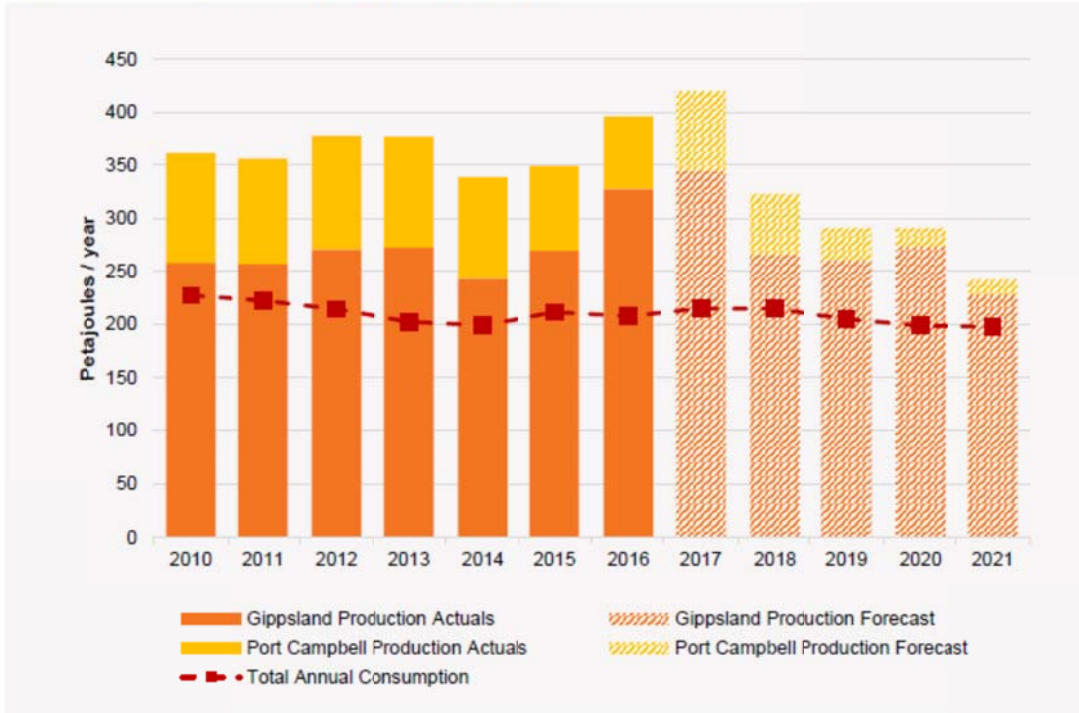
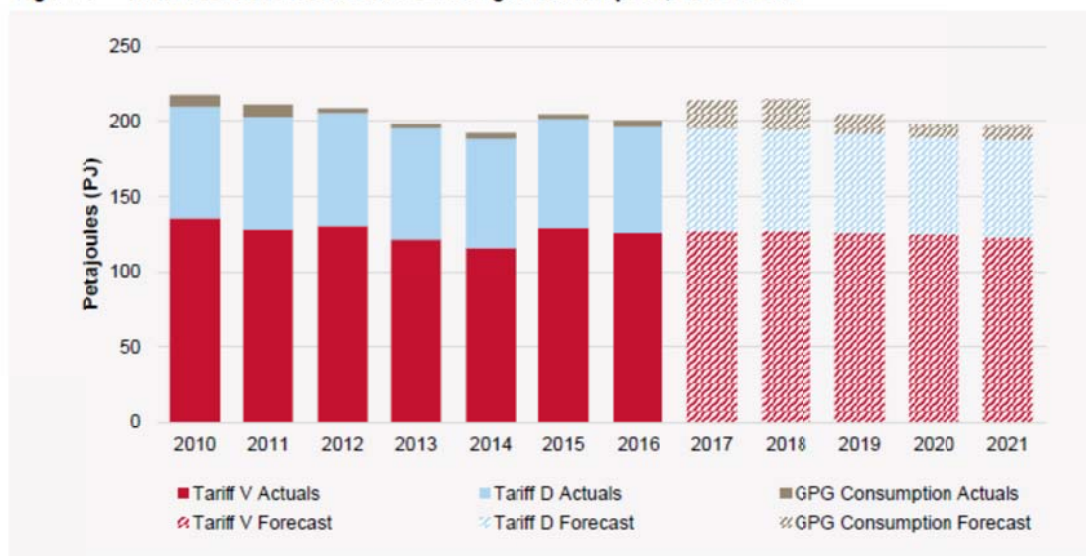


Table 8 and Figure 4 from AEMO's 2017 Victorian Gas Planning Report show that while the volume of gas used for GPG is expected to increase in 2017 and 2018, it is then expected to decrease again due to expected uptake in the use of renewables.

**Table 8 Total annual gas consumption (PJ/y)**

	2017	2018	2019	2020	2021	Annual average change (%)
Tariff V	127	127	126	125	123	-0.8%
Tariff D	68.6	67.6	65.9	64.6	64.8	-1.4%
System consumption	196	195	192	190	188	-1.0%
GPG consumption	18.8	20.5	12.9	8.5	9.6	-12.4%
Total consumption	214	215	205	198	197	-2.0%

**Figure 4 Historical and forecast total annual gas consumption, 2010 to 2021**



The profile of gas usage has also changed, as shown in Table 1 from AEMO’s 2017 Victorian Gas Planning Report.

**Table 1 Annual gas consumption and peak gas total demand**

	2010	2011	2012	2013	2014	2015	2016
Annual system consumption (petajoules (PJ))	220	217	211	200	195	208	204
Annual GPG consumption (PJ)	8	8	3	3	4	3	4
Actual peak total demand (terajoules per day (TJ/d))	1,197	1,154	1,092	1,165	1,214	1,179	1,187

As stated by AEMO:

*The annual gas consumption trend since 2010, shown in Table 1, demonstrates an overall decline due to industrial closures.*

*Weather is the other major factor that causes variations in annual consumption. Data from the Bureau of Meteorology shows that 2016 was the fourth warmest year on record for Victoria. The only warmer years were 2005, 2013, and 2014. Colder winters have higher gas consumption, and milder winters have lower, which emphasises the need for market participants to have sufficient flexibility in their gas supply portfolios. Winter 2015 was Victoria’s coldest winter since 1989.*

*The 2016 peak demand day for Victoria occurred on Friday 24 June 2016. The total demand of 1,187 terajoules (TJ) was all system demand, with no GPG occurring on that day. This was 8 TJ more than the highest demand day in 2015, but lower than the 1,214 TJ total demand on 1 August 2014.*

*Actual peak day system demands have not decreased, because residential winter demand growth has offset industrial closures. Peak day system demand has a low correlation to annual consumption (as it is possible to have a cold snap during a mild winter). Table 1 shows that 2014 had the lowest annual consumption in the seven-year period, due to it being Victoria’s warmest year on record. Despite this, 2014 had the highest peak day gas demand over the same period.*

*The DTS peak system demand is forecast to decline in the outlook period, as shown in Table 2. This is mostly due to the combination of projected industrial load reductions, inner city consumers switching from gas to electric appliances, and a generally warming climate.*

**Table 2 Peak day system demand forecast, 2017–21**

Forecast value (TJ/d)	2017	2018	2019	2020	2021
1-in-2 peak system demand <sup>A</sup>	1,198	1,190	1,181	1,170	1,162
1-in-20 peak system demand <sup>A</sup>	1,310	1,301	1,292	1,280	1,271

A) A 1-in-2 forecast is expected, on average, to be exceeded once in two years. A 1-in-20 forecast is expected, on average, to be exceeded once in 20 years.

Table 1 and Table 2 demonstrate that while residential winter demand growth has driven increases in peak demands in recent years, that growth is forecast to reverse to give a decline in peak demand in future years.

In the next section of this paper, we also discuss the contracting behaviour of shippers that has changed the timing of refill of Iona storage, shortening the periods of time when Iona is filled, and thus increasing the capacity needs for refill, by requiring the same amount of gas to be transported to Iona over a shorter period of time.

It is clear that the factors that are in combination leading to threats to the security of supply to Victorian end-use gas customers arise primarily through unique circumstances that have not previously arisen. The resulting issues are not caused primarily by the behaviour of Victorian gas consumers.

While the proposed expansion of the WORM is intended to address security of supply for Victorian gas users, the AER also needs to consider that the underlying causes of the need for expansion arise from the actions of other parties, and not from the actions of Victorian gas consumers.

We note the statement in the AEMO notice that “The threat to system security arises due to the transportation capacity constraint on the South West Pipeline (SWP) to Port Campbell.” While we understand that increasing the capacity of the SWP would help to alleviate the threat to system security, the reasons for the threat to system security are those that we have set out above. Those changed circumstances have caused the threat.

AEMO states in the Victorian Gas Planning Report: “Refilling of Iona UGS for winter 2018 is uncertain, due to the forecast decrease in Port Campbell production and limitations on the SWP capacity towards Port Campbell. The SWP capacity limitation is expected to worsen, due to a forecast increase in GPG demand following the Hazelwood closure. Operation of the Laverton North Power Station further exacerbates the transportation limitation, because the SWP capacity reduces by the amount of gas this power station uses.” APA reflects this in its proposal by saying: “The gas consumption of Laverton GPG has a direct impact on the ability to use the SWP to refill UGS.”

In other words, the operation of the Power Station takes priority over refilling the storage at Iona. If refilling the storage at Iona took priority, the wording would have been something like “The use of gas to refill UGS has a direct impact on the gas available for consumption of Laverton GPG.”

We understand that the operation of the Power Station takes priority over refilling the storage at Iona, (a) because of potential system security issues that may arise in the electricity system if gas is not available for electricity generation when it is needed, and (b) because faced with a choice between sending gas to a power station and putting it into storage, shippers will make the commercial economic decision to choose to supply the power station rather than put the gas into storage, because that provides greater revenues. It is economically more efficient to put gas into storage when it is otherwise not in demand, rather than to curtail demands to prioritise storage. But this economic efficiency in the use of gas comes at a cost if it results in increased network expansion requirements and hence increased network costs and network charges.



CCP11 questions whether the right incentives are in place to get the right balance between economic use of gas and economic use of the network, and to ensure that Victorian end-use gas customers' needs are met.

## 2.2. The role of gas storage at Iona

APA's supplementary proposal discusses the need to refill the gas storage at Iona to meet winter demands. It discusses the rate at which the storage can be filled in TJ/day, and various plans that the owner of the storage has for increasing the rate at which the storage can be filled in TJ/day. The proposal states that the total capacity of the Iona storage is 26 PJ, but does not say how much PJ of gas needs to be in storage at the beginning of winter to ensure the integrity of the gas system and to ensure that current gas demands continue to be met.

AEMO addresses this in its Notice:

*Predicted reservoir levels at Iona UGS by 1 June 2018 remain uncertain, and will depend on production levels (expected to decline) and summer 2017–18 gas powered generation (GPG) demand (forecast to increase after the Hazelwood Power Station closure). Based on winter 2016 Iona UGS reservoir depletion and refill rates over summer 2016–17, refilling Iona UGS prior to winter 2018 may not be sufficient to prevent supply shortfalls during winter 2018.*

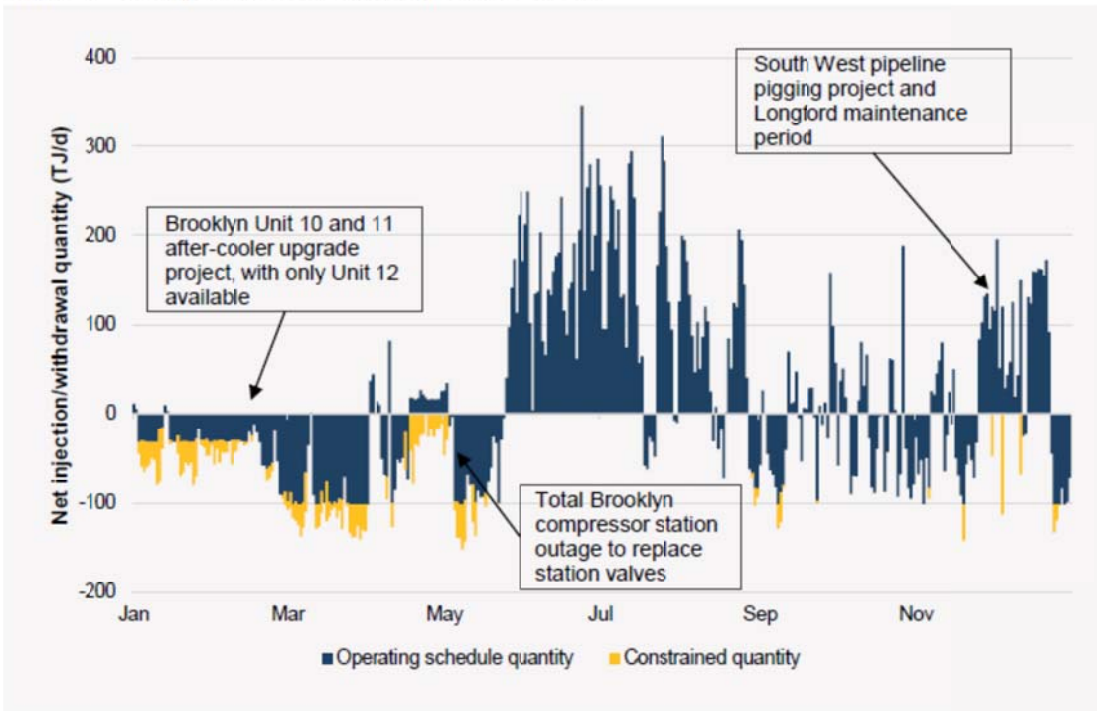
*AEMO modelling forecasts that Iona UGS reservoir levels may only reach 8.5 PJ ahead of winter 2019. AEMO expects that the daily supply capacity of Iona UGS into the DTS would decrease when the Iona UGS reservoir inventory is low. This reduced supply capacity is expected to result in peak day supply shortfalls occurring during winter 2019.*

*Based on AEMO's winter 2016 experience, a minimum Iona UGS storage inventory of 18.5 PJ is required to prevent winter gas supply shortfalls. AEMO considers this to be the minimum Iona UGS inventory requirement, noting that the forecast increase in GPG demand following the Hazelwood Power Station closure creates uncertainty. Based on the difference between 18.5 PJ and 8.5 PJ, AEMO is forecasting a supply shortfall of 10 PJ into the DTS for winter 2019.*

There is clearly significant uncertainty in the amounts of gas that need to be put into Iona, and the amounts that would be put into storage in the absence of the proposed investment in the WORM.

We consider that the underlying uncertainty is illustrated well in Figure 16 in AEMO's 2017 Victorian Gas Planning Report, which is copied below.

**Figure 16 Net injection and withdrawal quantities in 2016**



In 2016, there were 114 days with constraints applied at the Iona CPP for SWP net withdrawals to Port Campbell. Figure 16 displays those constraints, and demonstrates the difference between what market participants would have been scheduled to withdraw without a constraint, and what was physically possible. Net flows to Port Campbell in 2016 were impacted by planned project outages by the DTS service provider, unexpected plant trips, and producer maintenance, which limited net withdrawals during those periods.

Figure 16 illustrates that the period when Iona is being refilled is now reduced to September-October and March-May only. In 2016, the Longford maintenance outage constrained the SWP in November-December. As discussed above, GPG needs are projected to take more gas in the summer months December-February. As the Longford facility ages, more maintenance is likely to be required.

There is no long period outside the Victorian winter of say 7-9 months when Iona can be refilled at a steady constant rate, and even after gas is put into storage, it may be taken out to meet immediate needs before winter. Thus Iona may be filled and emptied and then need to be refilled before each winter.<sup>1</sup>

APA has similarly addressed this complexity in its supplementary submission on 15 May 2017:

*The Iona UGS is generally refilled over summer. In previous years, this process has been relatively orderly, with refill volumes coming from Port Campbell, with the remainder sourced from the VTS on a steady basis over the summer.*

*In more recent years, declines in Port Campbell production has meant that additional gas volumes have been sourced from the VTS (largely from Longford), putting increasing pressure on capacity in the South West Pipeline (SWP) to deliver those volumes.*

<sup>1</sup> Section 1 of AEMO's 16 May 2017 submission to the AER alludes to this by stating that there would be a gas supply shortfall "if Iona UGS is not sufficiently refilled then emptied prior to the end of winter".

APA also presents that shippers' contractual arrangements for purchasing of gas encourages them "to park" gas in storage when it is available at lower cost, to be retrieved later when they can't procure sufficient quantities of lower cost gas. APA states:

*Importantly, this change in shipper gas contracting behaviour is a change in the timing of refill, not the overall volumes. The same amount of gas is ultimately transported; however it is transported over a shorter period of time, increasing the peak capacity needs for refill.*

*These factors combined are putting increased pressure on refill for the Iona UGS, shortening the window for refill, increasing the need for peak refill capacity.*

APA further echoes the comments of AEMO that current capacity of the SWP for summer injections into Iona storage is contingent on conditions within the VTS, most principally the operation of certain Gas Powered Generation (GPG) such as the Laverton North Power Station (PS) which can impact SWP refill capacity across summer.

*The summer period (being generally a lower demand period in Victoria) is also a period for planned outages for production facilities, the Iona UGS and VTS plant for maintenance. This further shortens the window for refill, and at times constraining SWP westbound capacity to below the headline 104TJ/day of available capacity.*

In summary, there are many factors that need to be taken into account in the modelling of the capacity of the SWP to support there being sufficient gas in Iona storage to meet Victorian winter gas needs.

The factors that need to be taken into account in the modelling of the capacity of the SWP to support there being sufficient gas in Iona storage to meet Victorian winter gas needs include the following:

- Uncertainty as to how much gas will be demanded in Victoria in winter, which is weather based. Overall winter demands vary depending on whether the winter as a whole is cold or mild. Peak demands depend on the occurrences and lengths of 'cold snaps'.
- Gas Powered Generation use, which will significantly reduce pipeline capacity that is available for filling Iona storage.
- Maintenance periods, including maintenance outages at Longford outside winter, which will require the SWP to be used to meet Melbourne's immediate gas demands rather than to be used to fill Iona storage.
- Significant shortfalls that require gas to be taken from Iona outside winter to meet immediate needs for gas, thus requiring further filling of Iona after initial filling and depletion of the storage volumes.
- Shippers' contractual arrangements for purchasing gas.

These all contribute to the view from APA and AEMO that the investment in the WORM is required.

### **3. Benefits that result from building the WORM**

Section 5.1.3 of APA's 15 May 2017 supplementary submission sets out the qualitative rationale for proposing the WORM project within the forecast period. The benefits that are projected by APA arise as follows.

#### **3.1. Ensuring adequate capacity for refill of Iona UGS**

This has been discussed above. The proposed WORM project, in conjunction with proposed reconfiguration works at Brooklyn Compressor Station and Winchelsea compressor, will increase capacity for refill of Iona UGS. A key aspect of the WORM that supports refill is that it provides for bypass of the Laverton North PS.

#### **3.2. Some increased capacity for SWP injections into VTS**

The WORM project provides some additional capacity for injections into the VTS from Port Campbell. While not the primary driver for the WORM, additional capacity does restore eastbound capacity recently eroded by changes in AEMO's peak capacity forecast.

#### **3.3. Security of supply**

In the event of loss of supply from any of the market scheduled gas trains at Longford, Port Campbell (UGS, Otway or Minerva) or Pakenham (Lang Lang), it would be possible for alternate supplies to be scheduled. Flow constraints on either South West Pipeline/Brooklyn Lara Pipeline or Eastern systems are removed with the WORM. For example, gas from the Iona UGS or from the north from Culcairn would be able to respond with additional shortfall volumes should a supply issue occur at Longford, and vice-versa.

#### **3.4. Operational benefits**

APA submits that with the WORM in place, there will be better management of the VTS. Currently, the VTS operates within a tight band of linepack. The WORM creates additional "storage" or buffer, hence having the benefits in the following areas:

- Linepack Balancing;
- GPG readiness;
- Gas on gas competition.

#### **3.5. Reducing reliance on Brooklyn Compressor station site**

The Brooklyn compressors are currently used to refill the Iona UGS facility and also to maintain capacity on the Brooklyn to Ballarat and Geelong systems. The construction of the WORM reduces the reliance on the Brooklyn compressor site both operationally and for future growth in capacity on the VTS. Brooklyn is not the optimal location in terms of capacity expansion of the VTS and the site is heavily congested making augmentations technically difficult and therefore expensive.

#### **3.6. Future growth**

The WORM provides capacity for the VTS for future growth. APA estimates that the WORM would be required for growth (in addition to the current system security benefits) by 2025.

In combination with the Winchelsea compressor, the WORM provides the additional capacity to support growth such as new Gas Powered Generation. For example, the WORM could support Wollert CCGT (500MW to 1500MW), Newport CCGT, Truganina OCGT (360MW), LaTrobe Valley (2000MW). The WORM also supports gas exports to Culcairn by removing the constraint on western flow.

CCP11 cautions that at a time of declining gas usage, future growth may not be the appropriate future path. CCP11 also notes that the additional capacity is suggested to support GPG and gas export rather than Victorian end-use consumers of gas.

## 4. Analysis of APA's Supplementary Proposal against the National Gas Rules

### 4.1. NGR requirements for conforming capex

This section is copied with minor edit from a previous AER Final Determination – AGN SA – May 2016.<sup>2</sup>

Capex is defined as costs and expenditure of a capital nature incurred to provide, or in providing, pipeline services.<sup>3</sup> It is based on a forecast or estimate which must be supported by a statement of the basis of the forecast or estimate.<sup>4</sup> Any forecast or estimate submitted must:

- be arrived at on a reasonable basis; and
- represent the best forecast or estimate possible in the circumstances.<sup>5</sup>

Capex is conforming capital expenditure if it conforms with the criteria in rule 79 of the NGR. There are two essential criteria that must both be met under this rule:

- the expenditure must be such as would be incurred by a prudent service provider acting efficiently, in accordance with good industry practice, to achieve the lowest sustainable cost of providing services; and
- the expenditure must be justifiable on one of four grounds set out in rule 79(2) of the NGR.

The four grounds set out in rule 79(2) of the NGR can be summarised as follows. The capex must either:

- have an overall economic value that is positive;
- demonstrate an expected present value of the incremental revenue that exceeds the present value of the capex;
- be necessary to maintain and improve the safety of services, or maintain the integrity of services, or comply with a regulatory obligation or requirement, or maintain capacity to meet levels of demand existing at the time the capex is incurred; or
- be justifiable as a combination of the preceding two dot points.

Rule 79(3) of the NGR provides:

In deciding whether the overall economic value of capital expenditure is positive, consideration is to be given only to economic value directly accruing to the service provider, gas providers, users and end users.

The AER has limited discretion when making decisions under rule 79 of the NGR.<sup>6</sup> This means that it must approve a particular element of the access arrangement proposal if it is satisfied that the element complies with the applicable requirements of the NGR and NGL and is consistent with any criteria set out in the NGR or NGL.<sup>7</sup>

---

<sup>2</sup> Available on the AER website at <https://www.aer.gov.au/networks-pipelines/determinations-access-arrangements/australian-gas-networks-sa-access-arrangement-2016-21>

<sup>3</sup> NGR, r. 69

<sup>4</sup> NGR, r. 74(1)

<sup>5</sup> NGR, r. 74(2)

<sup>6</sup> NGR, r. 79(6)

<sup>7</sup> NGR, r. 40(2)

## 4.2. The basis of the APA claim that its supplementary proposal is conforming capex in accord with rule 79 of the NGR

APA is claiming that its proposed investment in the WORM is conforming capex in accord with rule 79 of the NGR on the basis that:

- The capital expenditure is necessary to maintain the safety and integrity of services.
- APA considers that the capital expenditure is such as would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of providing services.

Each of these two claims is now considered in turn.

### 4.2.1. Is the capital expenditure necessary to maintain the safety and integrity of services

In particular regard to rule 79(2), APA states:

Rule 79(2)(c) of the National Gas Rules lists the following justifiable methods for Capital Expenditure;

- i. to maintain and improve the safety of services; or
- ii. to maintain the integrity of services; or
- iii. to comply with a regulatory obligation or requirement; or
- iv. to maintain the service provider's capacity to meet levels of demand for services existing at the time the capital expenditure is incurred

The WORM project meets the criteria of Rule 79(2)(c)(i), (ii) and (iv), that is, the capital expenditure is necessary to maintain the safety and integrity of services associated with demand that exists at the time the capital expenditure is incurred.

In particular regard to rule 79(1), APA states:

Consistent with the requirements of Rule 79 of the National Gas Rules, APA considers that the capital expenditure is:

- Prudent – The expenditure is necessary in order to maintain and improve the safety of services and maintain the integrity of services to customers and personnel and is of a nature that a prudent service provider would incur.
- Efficient – All expenditure would be undertaken consistent with APA procurement policies which require competitive procurement for all delivery/construction work.
- Consistent with accepted and good industry practice – Addressing the risks associated security of supply is accepted as good industry practice.
- To achieve the lowest sustainable cost of delivering pipeline services – The sustainable delivery of services includes reducing risks to as low as reasonably practicable and maintaining reliability of supply.

### *Does the proposed capex meet the requirements of NGR rule 79(2)?*

First, we agree that if the capex does meet the requirements of rule 79(2) it can only be on the basis of 79(2)(c)(i), (ii) and/or (iv), as presented by APA.

It cannot be judged to meet the requirements of 79(2)(a), (b) or (d), given that APA has not provided any quantified analysis of the magnitude of the economic value or the expected incremental revenue that might result from the proposed investment. Further, APA's proposed investment is not in order to comply with a regulatory obligation or requirement under 79(2)(c)(iii).

So we are left to consider 79(2)(c)(i), (ii) and (iv), as presented by APA.

APA raises safety concerns as a secondary issue that may arise if supply to a customer is interrupted. Thus, 79(2)(c)(i) will only arise as an issue if (ii) or (iv) arises. So (ii) and (iv) are the areas we have to consider in the first place. If there is no issue with (ii) or (iv) then there is no issue with (i).

Specifically, we thus have to consider whether:

c. The capital expenditure is necessary:

ii. To maintain integrity of services, or

iv. To maintain the service provider's capacity to meet levels of demand for services existing at the time the capital expenditure is incurred (as distinct from projected demand that is dependent on an expansion of pipeline capacity)

### ***The requirement to fill the Iona storage each year before winter***

It is clear from APA's proposal that the key reason for now proposing to build the WORM is in order that the storage facility can be filled each year before winter. In AEMO's Notice of a Threat to System Security:

*AEMO advises that the threat to system security is Potential for gas supply sources to be incapable of meeting forecast gas demand. The threat to system security arises due to the transportation capacity constraint on the South West Pipeline (SWP) to Port Campbell. This is forecast to result in an inability to sufficiently refill the Iona underground gas storage (UGS) reservoirs prior to winter 2018 and for each subsequent winter until the constraint is removed ... The threat to system security is expected to be reduced if the augmentation of the South West Pipeline (SWP), proposed by the DTS service provider in its 2018–22 Access Arrangement submission, proceeds as soon as possible.*

The AEMO notice assists in supporting APA's claim that the investment in the WORM meets the requirements of rules 79(2)(c)(ii) and (iv) of the National Gas Rules.

In its supplementary proposal, APA has also provided information on commercial investment proposals from the owner of the Iona storage facility to increase the pace of refill and withdrawal (without increasing storage reservoir capacity), and has confirmed that the proposed WORM investment will facilitate and enable the Iona storage facility investment proposals. To the extent that investment in the WORM is to enable augmentation of the Iona storage facility beyond the requirements of rule 79, that would not appear to meet the requirements of being conforming capex.

It is important that whatever is approved as conforming capex is strictly limited to that which is required for APA to provide pipeline services to users of the APA transmission system, the Access Arrangements for which are currently being reviewed.

### ***What will happen if the WORM is not built?***

AEMO has stated in its notice: "If the SWP augmentation is not commissioned by the end of winter 2018, curtailment of demand that directly impacts the refilling of the Iona UGS is likely from 01/10/2018. This threat to system security will remain in effect until SWP augmentation is completed".



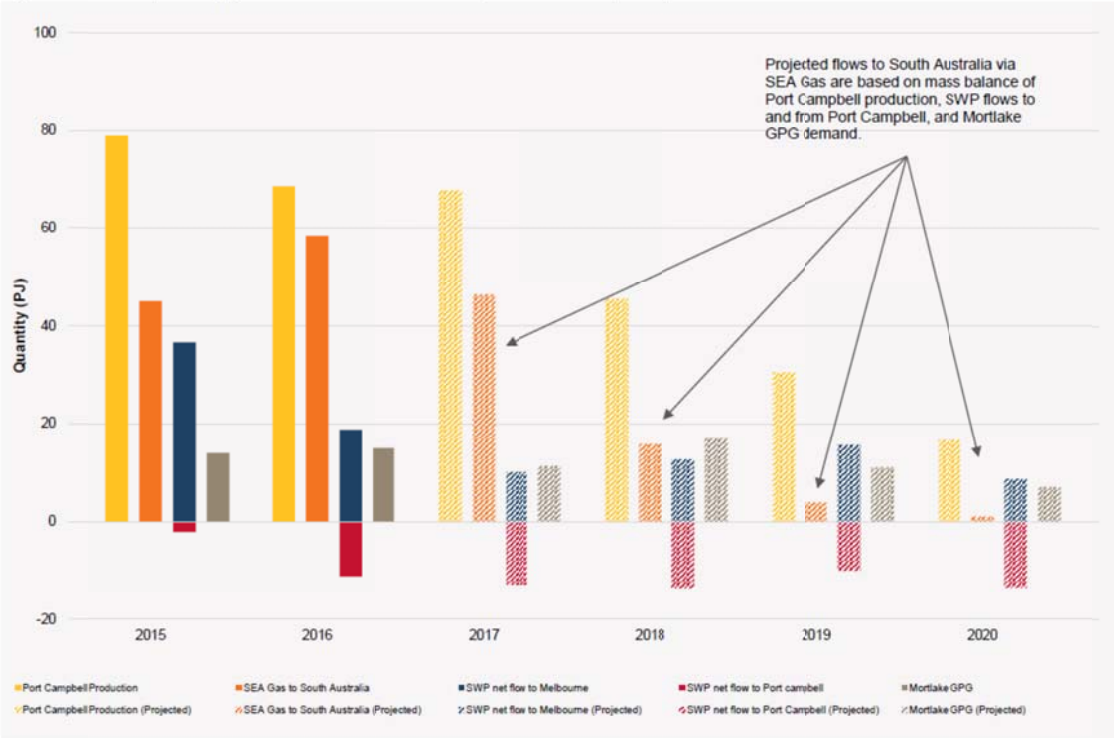
We understand that AEMO maintains an established curtailment table that would set out the order in which load would be curtailed. This table is confidential, and we have not seen a copy (nor requested to see a copy since our views here are not dependent on exactly which gas users would be curtailed). Without knowing exactly what is contained in the curtailment table, we expect that large industrial gas users would be curtailed. APA’s 15 May supplementary submission suggests the possibility that Gas Powered Generation (GPG) could be curtailed:

*The Laverton North PS is situated at an offtake on the Brooklyn Corio Pipeline. When Laverton North PS runs, it diverts gas from Iona UGS refill on a one-to-one basis. As the window for refill tightens due to the limited availability of gas, this diversion of capacity increasingly puts adequate refill of Iona UGS at risk. In an environment where there is potential for Laverton North PS to operate more frequently across the summer, adequate summer refill can become more uncertain. One possibility is the curtailment of Laverton North PS to support refill, however this could have significant implications for electricity supply.*

AEMO’s expectation that if the WORM is not built there would be curtailment of existing gas supplies again supports the view that the investment in the WORM would meet the requirements of rules 79(2)(c)(ii) and (iv), as presented by APA.

We also note Figure 17 in AEMO’s 2017 Victorian Gas Planning Report, which is copied below.

Figure 17 Port Campbell supply – demand balance from 2015–20, based on market participant data submissions



This figure shows actual and projected figures for Port Campbell production, and projected flows on various pipelines if there is no investment in the WORM. The constraints on flows of gas from Victoria to South Australia on the SEA Gas pipeline are clearly visible.

The WORM would address constraints on flows of gas from Victoria to South Australia on the SEA Gas pipeline, and this further highlights that user of gas transported on the SEA Gas pipeline are beneficiaries of the WORM and should pay a fair contribution to its costs.

#### 4.2.2. Is the capital expenditure such as would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of providing services

In its supplementary proposal, APA asserts: “Consistent with the requirements of Rule 79 of the National Gas Rules, APA considers that the capital expenditure is such as would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of providing services (Rule 79(1)(a)).” Its supporting evidence for these assertions is in the following statements:

“APA has systems and procedures guiding the development the capital projects from Concept through to the Delivery phase. For most capital projects over \$1m, design and procurement will be carried in-house and the delivery/construction phase will be tendered. If there is a constraint in resources, then the design and procurement could also be tendered out under an EPC Process. APA has preferred third party partners who are drawn upon to supplement any shortfall in engineering resources.”

CCP11 does not accept that APA’s general statement proves that the costs are appropriate. On the other hand, CCP has not delved into detailed costings in the past, and has not done so here either.

APA’s 15 May 2017 Supplementary Capital Expenditure submission states: “The total forecast expenditure on the WORM project is \$126.7m (\$real 2017). This includes \$26.7m of expenditure proposed in the January AA proposal to pre-purchase the easement for the WORM in the forecast period.”

The size of the proposed capital expenditure represents an increase in APA’s Regulated Asset Base of more than 10%, and the risks of the project will remain with consumers over the long term. It is therefore essential that construction costs are carefully reviewed by the AER.

It would be prudent for the AER to review critically APA’s detailed costings to determine if the proposed expenditure meets the requirement that it is such as would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of providing services. The AER might perhaps benchmark the proposed construction costs against other service providers (although there is a very small group of suppliers of these services).

#### *Consideration of other options are there besides building the WORM*

APA’s proposal includes consideration of the reconfiguration of the Brooklyn and Winchelsea compressor stations, and explains why this would not provide a long term solution.

APA submitted reconfiguration of the Brooklyn and Winchelsea compressor stations as business case 505 in its original AA proposal, and now states: “The works will take approximately 12 months to be completed and would be in place by summer 2017/18. Hence, it will alleviate risk of shortfall in gas supply from winter 2019. These works are still necessary to manage the capacity shortfall in the refilling of UGS until the WORM is completed and beyond that time.”

Under “Options Considered”, APA states: Several options were considered, which include:

- Option 1: – Do Nothing. Secure WORM Easement (refer Business Case 504) and Reconfigure Brooklyn Compressor Station and Winchelsea Bidirectional Work (as per Business Case 505)
- Option 2: – Full WORM Project

APA presents a cost/benefit analysis, and concludes that Option 2 is the preferred solution.

AEMO has also confirmed its view that the investment in the WORM is required and that other options will not suffice.

## 5. Effect on the Regulated Asset Base (RAB)

As mentioned above, the proposed capital expenditure represents a material increase in the RAB. It is primarily investment in pipeline, which has a regulatory asset life of 55 years. Thus the return on this regulated asset and the costs of depreciation will be recoverable from Victorian gas transmission system users long into the future.

With the changes that will happen in electricity and gas markets over this period, there is a significant risk of economic redundancy in future, but there will be ongoing cost recovery.

It is also quite feasible that the key beneficiaries of the investment other than Victorian end-use gas consumers (i.e. Gas Powered Generation, South Australian gas users, and northern gas exports) will not still be users of the Victorian transmission system in place to continue to pay their share of the returns on the investment and the depreciation of the investment over the full regulatory asset life of 55 years.

In this instance, Victorian end-use gas consumers are the 'investors' (or last resort guarantors), and being asked to 'invest' in a project whose economic life could be much shorter than its technical life. In general, this is a challenge to the long term prudence of the investment.

The AER should consider ways of ensuring that all these users still pay their fair share of the costs of the WORM and of the VNI extension while they are still active users of the Victorian transmission system, rather than leave an unfair share of costs to be recovered in the later years from Victorian end-use gas consumers.

## 6. Tariffs

Tariffs are the key way that costs are recovered from pipeline users, and are the way to reflect fair use of system.

In its 15 May 2017 submission, APA states:

*Completion of the WORM project within the forecast period has an impact on tariffs for the period.*

*As the WORM represents a new pipeline, APA VTS established a new asset zone for the WORM in the tariff model for the proposed easement purchase. Once completed, the WORM becomes part of the broader system of pipelines and facilities for gas supply from Iona/Port Campbell to the Hub, and beyond to Northern Victoria. In line with the cost allocation methodology described in the January AA proposal, the WORM expenditure is therefore allocated to all withdrawal zones that use the flow path incorporating the WORM, in proportion to volume. This includes the cross system tariff, as well as withdrawals at Port Campbell (but not, for example, flows to the Western Transmission System that are matched to Port Campbell injections).*

*On average the transport charges for a volume class customer (consuming 60 GJ per annum) in the Metropolitan area will increase by less than 3c/GJ in 2018 compared to APA VTS's January AA proposal. This equates to less than a \$2.00 increase in the annual bill.*

CCP has not in the past reviewed detailed dollar and cent tariff proposals. Rather, as in the past, we emphasise the need to ensure that the beneficiaries of the WORM pay the costs of the WORM through appropriate tariffs. Given that the WORM is primarily needed to fill the Iona storage while also allowing gas to flow to GPG use, those are key withdrawal points where perhaps increased tariffs to pay for the WORM should be focused.

In order to allow stakeholders to assess the tariff impacts, it would be useful if APA set out the impacts of the proposed tariffs on specific segments of end-use gas customers, including metro customers, and customers in the west (including Geelong, Ballarat, and Bendigo).

CCP11 also questions if APA is relying at least in part on revenue from withdrawal from Port Campbell, what does that do over the longer term as Port Campbell declines? Will other users have to pick up the revenue gap? Similarly for Gas Powered Generation: with a volume based tariff, how is volume risk going to be managed? This is significant, given Port Campbell constraints, and likely decline in GPG over time.

CCP11 requests to see a long term cost benefit analysis that addresses these issues and cost allocation in the context of supply and demand risks.

## **7. Conclusion**

CCP11 has found, based on the information available, that there is a case under the National Gas Rules for building the WORM in the coming regulatory period.

CCP11 has also set out its concerns regarding the long-term costs and risks to Victorian end-use gas consumers. This advice to the AER emphasises that the AER should give consideration to how the costs of the investment (return on assets and return of assets) will be recovered over its long regulatory life. CCP11 advises that it is important to ensure that all the beneficiaries of the investment pay their fair share of the costs, and not leave Victorian end-use gas consumers to pick up residual costs that are not recovered from other beneficiaries.