APA
Australia's energy infrastructure partner

South West Pipeline Expansion Proposal

Business case

17 October 2025

Acknowledgement of Country

At APA, we acknowledge the Traditional Owners and Custodians of the lands on which we live and work throughout Australia.

We acknowledge their connections to land, sea and community.

We pay our respects to their Elders past and present, and commit to ensuring APA operates in a fair and ethical manner that respects First Nations peoples' rights and interests.

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1. Executive summary

APA VTS Australia (Operations) Pty Limited is proposing to augment the South West Pipeline (SWP) on the Victorian Transmission System (VTS) to meet peak day requirements predicted by the Australian Energy Market Operator (AEMO).

Our proposal involves the installation of two compressor stations on the SWP.

Table 1-1 Project overview and business case

Problem description	AEMO's Gas Statement of Opportunities (GSOO) and Victorian Gas Planning Report (VGPR 2025) have predicted a shortfall in gas supplies in the Victorian Transmission System (VTS) to meet winter demands from 2028. Winter 2028 will see tight supplies sufficient to meet system demand but with limited surplus for Gas Powered Generator) GPG operations. The situation will worsen in winter 2029 when gas supplies will not be sufficient even to meet system demand. Projects are needed to address AEMO's predicted shortfalls in gas supply and peak day capacity on the VTS.
Description of project	The supply shortfall predicted in AEMO's GSOO and VGPR 2025 is driven by declining gas supplies, particularly in Gippsland region and the retirement of Longford Gas Plant 3 in 2028. This will create a gap in both seasonal and peak day supply. While the system demand is forecasted to fall with declining industrial and domestic demand, AEMO is forecasting a significant rise in GPG demand from winter 2028, following the planned closures of the Eraring coal power station in 2027 and the Yallourn coal power station in 2028. The maximum GPG demand is forecast to increase from 250 TJ/d in 2025 to 528 TJ/d in winter 2028 and 572 TJ/d in winter 2029. There are several projects which are currently being developed to increase gas availability to the VTS, but only Lochard Energy has reached Financial Investment Decision (FID).[1] In July 2024, Lochard Energy achieved FID to develop the Heytesbury production and storage facility (HUGS Project). The HUGS Project will increase the Iona Underground Gas Storage Facility's (Iona) injection capacity from 570 TJ/d to 615TJ/d by 2027. Lochard Energy advised APA that there is potential to increase the Iona injection capacity up to 670 TJ/d, pending FID in 2027. There may be also more gas available

[1] For clarity, Squadron Energy completed physical mechanical construction of the Port Kembla Energy Terminal (**PKET**) in December 2024. Jemena has completed construction of a pipeline lateral that connects the PKET to the Eastern Gas Pipeline (**EGP**). However, the Höegh Gallion, the Floating Storage and Regasification Unit (**FSRU**) leased to Squadron Energy, was deployed to Egypt in July 2024, on an interim charter from AIE and Höegh Evi. No public announcement has been made on a firm timeline of how long the Höegh Gallion will remain in Egypt or when it will be deployed to Port Kembla. While the PKET can supply up to 500TJ/day, AEMO's 2025 GSOO (p70) identifies that the southbound capacity of Jemena's EGP is 200 TJ/day, expandable to 325 TJ/day, pending expansion of the VicHub connection point.

	from the Otway producers but those volumes are subject to nominations between the VTS, Mortlake power station and SEAGAS pipeline. Currently, the SWP limits any additional gas available from the Iona and Otway producers above 523 TJ/d. Other proponents that can increase gas supply to the SWP but have not achieved FID are the floating LNG Terminals such as Viva, Vopak and Venice (South Australia). The expansion solutions to enable gas to be receipted by the LNG terminals are different for each case. Looping and/or compression may be required to increase capacity on the SWP and on Brooklyn Lara Pipeline (BLP), depending upon gas volumes and the connection location on the SWP. APA is submitting a Rule 80 Application which covers the following: Expansion of the South West Pipeline (SWP) to 615 TJ/d based on the increase in Iona injection capacity to reduce the risk of winter peak day shortfall arising from the forecasted Gippsland gas production decline in the VTS from winter 2028. Expansion of the SWP to 615 TJ/d unlocks domestic gas available from Iona for peak day system security. Non-discriminatory daily access to this capacity is managed by AEMO through the operation of the Declared Wholesale Gas Market. Securing early land access and approvals avoids delays in further expansion of the SWP and BLP once other gas supply sources become available.
Options considered	Option 1: Do Nothing. Option 2: Install 2 new compressor stations at Irrewillipe and Stonehaven on the SWP. **(preferred)** Option 3: Install looping on the SWP **(alternative)**.
Proposed Solution	The project will be delivered as follows: Installation of compression at Stonehaven and Irrewillipe by winter 2028. APA has already secured land for a single unit compression at both sites. With both compressors installed at Stonehaven and Irrewillipe, Iona injection capacity into the SWP can be increased to 615 TJ/d, unlocking the gas available from Iona. Works around the Winchelsea compressor station configuration would also be required to allow the two existing units to run in parallel configuration (currently configured for series configuration).

	APA notes that the SWP expansion solution to 615 TJ/d is designed to mitigate peak day shortfalls from winter 2028 and is the first step in unlocking more gas supply into the VTS. There may not be sufficient gas supply availability into the VTS to adequately cover seasonal shortfalls over time without additional gas from new gas supply projects.
Consistency with the National Gas Rules (NGR)	APA VTS considers that the proposed solution meets the conforming capital expenditure criteria of NGR Rule 79. The South West Pipeline investment is required for integrity of services, and to maintain the capacity to meet existing levels of demand for services, hence the capital expenditure is justified as conforming capital expenditure.
Stakeholder engagement	APA VTS has had regular engagement with stakeholders related to this project for a number of years. The stakeholders affected by this project are: • **Australian Energy Market Operator (AEMO)** • **Victorian Market Participants** • **Lochard Energy** • **Port Campbell producers.** • **Floating LNG Terminals (e.g. Viva, Vopak)** **APA VTS has also engaged with stakeholders on the SWP augmentation options as part of the VTS 2028-32 access arrangement stakeholder engagement process.**

2. Background

2.1 Problem description

The Victorian Gas Transmission System (VTS) is facing a shortfall in gas supplies due to declining gas supplies from Longford.

In 2021, the AER approved a fast-tracked expansion of the SWP for a second compressor unit at Winchelsea compressor station to increase the ability of Iona to inject into SWP to from 468 TJ/d to 530 TJ/d (now 523 TJ/d with the latest demand profile). As Longford supplies continue to decline, the latest AEMO GSOO and VGPR 2025 predictions show that supply shortfalls will occur from winter 2028 with insufficient new production available.

Figure 1 below are extracts from AEMO's VGPR showing the annual and peak day forecast from 2025 to 2029.

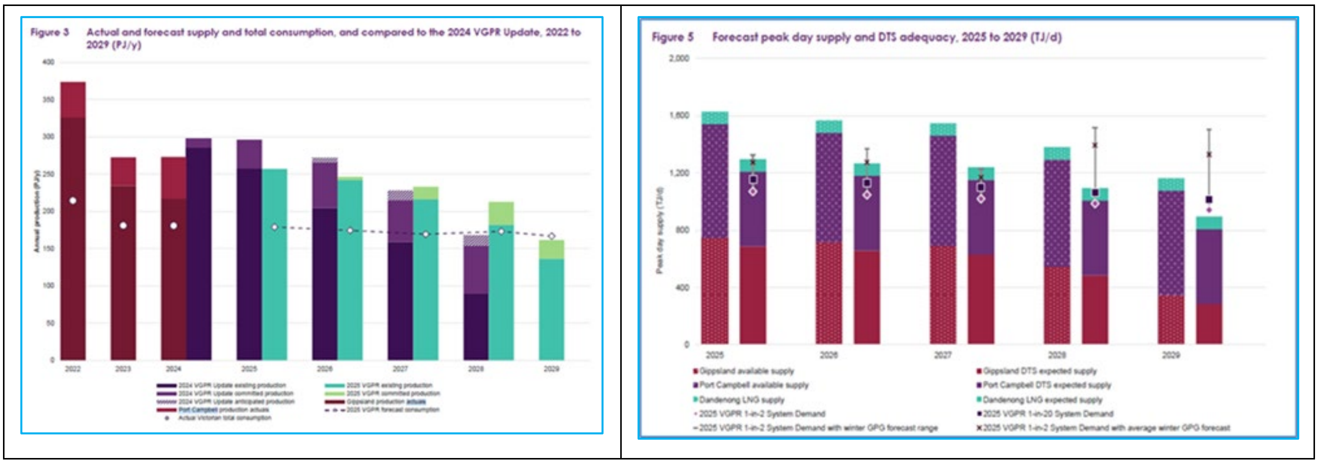


Figure 1: Annual Peak Day Forecast 2025-2029: Source: AEMO Victorian Gas Planning Report 2025, Figure 3 and 5.

AEMO 2025 VGPR predicted **Production outlook** are as follows:

- Longford annual gas supplies will fall by 36% from 198 PJ (2025) to 127 PJ by 2029.
- Port Campbell production will decline by 41% from 59 PJ in 2025 to 35 PJ in 2029.

In terms of expected peak day supply, supply capacity to the DTS (including from storage facilities) will decline by 31% from 1,296 TJ/d in winter 2025 to 895 TJ/d in winter 2029:

- Gippsland supply will decline from 686 TJ/d in 2025 to 285 TJ/d by 2029
- Port Campbell producers and the Iona UGS operator have advised that maximum daily supply capacity will reduce by 8%, from 795 TJ/d in 2025 to 732 TJ/d in 2029. Lochard Energy has achieved FID to increase the capacity of Iona UGS facility by 45 TJ/d, from 570 TJ/d to 615 TJ/d from 2027 with the development of the Heytesbury Underground Storage (HUGS) project. However, gas supplies from Port Campbell and Iona are limited by the South West Pipeline capacity to 523 TJ/d.

AEMO 2025 VGPR predicted Demand outlook shows the following:

- Continued reduction in system demand (Tariff V and Tariff D) resulting from the Victorian Government policies of banning new gas connections and enforcing higher gas connection costs. By 2029, the 1 in 2 winter system demand will fall from 1071 TJ/d to 942 TJ/d, and the 1 in 20 winter peak falling from 1156 TJ/d to 1016 TJ/d.
- From 2028 to 2029, GPG demand is forecasted to increase following the retirement of coal-fired generation Eraring Power Station in August 2027 and Yallourn Power Station in July 2028. This will see an increase in GPG peak demand of 175% to 528 TJ/d and 562 TJ/d in winter 2028 and 2029, respectively.

Both annual and peak day forecasts show a significant shortfall in supply- demand by 2029. In 2028, gas supplies meet system demand but there is limited surplus gas available to support high GPG demand and will result in gas supply for GPG being curtailed. The situation will worsen in 2029 when there is a significant shortfall in supply to meet both system demand and GPG on the system peak day. The use of alternative resources (such as electricity demand response, alternative secondary generation fuels, and stored energy in electrical storage) will be needed to maintain reliability.

APA is proposing the expansion of the SWP to mitigate impending peak day shortfalls forecasted from winter 2028.

2.2 Expanding the South West Pipeline

The South West Pipeline (SWP) is a bi-directional pipeline that is used to supply gas from the gas plants at Port Campbell, including the Iona Underground Storage facility, to Melbourne. The SWP also transports gas from Melbourne to Port Campbell refilling the Iona Underground Storage reservoirs and flows onto South Australia via the Sea Gas Pipeline. There are currently two compressor units operating in series configuration at Winchelsea.

There are three main gas production facilities at Port Campbell which deliver gas to the Victorian Wholesale Gas market and also to the Adelaide STTM, which are the Otway Gas Plant, Athena Gas Plant and Lochard's Iona gas production and underground storage.

Port Campbell producers and the Iona UGS operator have provided information in the VGPR 2025 that their maximum daily supply capacity will reduce by 8%, from 795 TJ/d in 2025 to 732 TJ/d in 2029. Note that the gas availability is shared between the VTS, South Australia and Mortlake power station.

- The Otway Gas Plant has an injection capacity of 205TJ/d and is connected to the APA VTS, SEAGas Pipeline and the Mortlake pipeline that supplies the Mortlake Gas Powered generator.
- Athena Gas Plant has currently a capacity of 20 TJ/d and is targeting a supply of up to 90 TJ/d from 2028, subject to FID and execution. The gas will be for domestic use and part of the gas could supply the VTS.
- Lochard Energy's Iona underground storage facility has a standing injection capacity of 570TJ/d. Lochard Energy's Heytesbury Underground Storage project is currently underway which will increase their Iona Underground Storage capacity of 24.4 PJ by 1.8 PJ in Stage 1. Lochard has reached FID to increase their injection capacity from the storage facility from the current 570 TJ/d to 615 TJ/d from 2027. In Stage 2, a further increase up to 670 TJ/d is planned, subject to FID in 2027, with production targeted for winter 2029.

Currently, Iona injection into the VTS is limited to 523 TJ/d due to the capacity of the SWP. Any additional gas from the Port Campbell production would not be able to be transported through the SWP without expansion.

There are several projects currently being developed to increase gas availability to Victoria, such as Viva and Vopak LNG Import Terminal, Golden Beach production and storage. However, these projects have not achieved FID at this stage. Port Kembla LNG Terminal (PKGT) has been constructed in 2024. The LNG terminal is not expected to begin operations until at least 2027, though with no firm volumes and a committed date to supply gas. In this Rule 80 submission, APA only considers the projects which have reached FID and have committed gas supplies in this assessment. At this stage, only the Lochard's injection to 615 TJ/d has reached FID for 2027.

APA is proposing in a Rule 80 submission augmentation to the SWP to increase Iona's injection capacity into the VTS from 523 TJ/d to 615 TJ/d.

2.3 Basis of SWP capacity expansion

The capacity assessment of the SWP Expansion was conducted using the APA-AEMO Common Model and based on the modelling guidelines agreed between APA and AEMO.[2]

The basis of the supply-demand balance which APA used to assess the SWP Capacity Expansion is as follows:

Table 2-1 Basis of Supply-Demand Balance for Capacity Assessment

	Flow	Basis/Refence
SUPPLY	TJ/d	
Gippsland	285	VGPR 2025 Supply prediction in 2029 Refer to Appendix B
Iona Injection	615	615 TJ/d - Lochard injection capacity from 2027.
Culcairn	180	Maximum historical flow from Culcairn. Required to achieve supply-demand balance on winter peak day to meet system demand and a minimum level of GPG.
Total Supply	1080	
DEMAND		
System Demand	1016	VGRP Prediction from Gippsland for a 1 in 20 winter peak day in 2029. Refer to Appendix B
GPG	60	Maximum GPG that can run on the peak day with the gas supply available.
Fuel Gas	4	
Total Demand	1080	

The assessment to expand the SWP capacity is based on the 2029 supply-demand forecast when Gippsland supplies would be at its lowest in the 2025-2029 forecast period, hence a worst case scenario (refer to Appendix B).

APA has assumed 180 TJ/d flows from Culcairn in order to cover supply-demand balance for the peak day system demand from 2029 with a minimum level of GPG. The VGPR forecast does not include any gas supply available from Culcairn. The import capacity from Culcairn is currently 190 TJ/d. APA notes that the Uranquinty Power Station in NSW consumes part of the gas when in operation. However, there is a significant amount of firm and as-available capacity up to 110 TJ/d, when the power station is running. Historical maximum flows through Culcairn have been as high as 180 TJ/d when the power station was not operating. APA's East Coast Grid Expansion, subject to FID, will firm up the flows from Culcairn.

Sensitivity analyses were also conducted to determine the impact of no Culcairn supply and with additional Gippsland supply (on top of the 285 TJ/d) instead to achieve the supply-demand balance. Commentary on the results is detailed in Section 4.4.

The solution proposed in this Rule 80 submission addresses the peak day supply capacity by accessing the available gas from Iona to reduce the winter peak day supply-demand shortfall from 2028.

[2] Reference: "Guidelines for the Determination of the Victorian Gas Declared Transmission System Capacity", Rev 5.4

3. Risk assessment

The National Gas Rules lists the following justifiable methods for Capital Expenditure;

> 79(2) Capital expenditure is justifiable if:
> (c) the capital expenditure is necessary:
> (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 Gas Safety Act (Part 2 (ESV), Section 9, Objectives of ESV under this Act are:

> (a) to ensure the safety of the conveyance, sale, supply, measurement, control and use of gas; …

and Part 3 (Gas Safety), Section 32 General duties of gas companies:

> A gas company must manage and operate each of its facilities to minimise as far as practicable—…
>
> (c) the hazards and risks to the safety of the public and customers arising from—
>
> (i) interruptions to the conveyance or supply of gas; and
>
> (ii) the reinstatement of an interrupted gas supply."

As the Gas Industry Act and the Gas Safety Act imposes obligations on network operators and owners that relate to the continuity of gas supply, it is APA's belief that all points therefore to justifying Capital Expenditure required to ensure gas supply to VTS customers are maintained.

The following risks have been assessed:

- **Construction.** The project is of routine nature to APA VTS. The risk is mainly related to factors that are outside APA VTS control, particularly land heritage issues and delays due to weather conditions.

- **Technical.** All construction work would be completed by technically proven contractors, to APA VTS's engineering design and specifications. All construction processes are overseen by APA VTS.

- **Operation**. The facilities will be operated in accordance with APA VTS's standard management practices for assets of this type. APA VTS has a suitably qualified and experienced workforce in Victoria to perform this type of operation.

- **Regulatory**. This investment should be regarded as justified under Rule 79(2)(c)(iv) and therefore is conforming capital expenditure.

4. Options considered

Several options were considered to increase the Iona injections into the VTS as follows:

4.1 Option 1 – Do Nothing / No Capital Expenditure Option

APA does not submit any capital expenditure for any expansion on the SWP.

There will be insufficient gas availability from winter 2029 for both 1-in-2 and 1-in-20 peak days to meet system demand in 2029. There would be a risk of higher shortfall with un-forecasted demand increases in Gas Powered Generators (GPG) and unplanned supply restrictions.

4.2 Option 2 – Compression

Option 2 proposes the installation of new compressor stations at Stonehaven and Irrewillipe to increase Iona injection capacity from 570 TJ/d to 615 TJ/d. Refer to Appendix C for the configuration of the expansion.

Table 4-2 Installation of Compression

Augmentation	Iona Injection Capacity (TJ/d)	SWP Capacity (TJ/d)[3]	Capital Expenditure ($m)	Completion	Commentary
Install 10 MW compressor at Stonehaven	615	600	$195.3m	Winter 2028	Installation of Compression at Stonehaven APA already owns the land at Stonehaven.
Install 10 MW compressor at Irrewillipe					Installation of a compressor at Irrewillipe. APA has already secured land at Irrewillipe.
Reconfiguration of Winchelsea compressor station for parallel operation.					Winchelsea compressors are currently configured for series configuration. However, with more flow through the compressor station due to the expansion, the units will need to be reconfigured to operate in parallel.

Option 2 is the preferred option which has the least cost of the augmentation and an earlier completion schedule compared to Option 3 (looping only option).

Total capital expenditure for the project is $195.3m. Operating costs to operate the two new compressor stations, estimated to be $0.60 m per annum.

The construction of the two compressor stations and reconfiguration of the Winchelsea compressor station is scheduled to be completed by winter 2028.

Given the localised nature of the compressor stations, and existing APA ownership of the land at Stonehaven and Irrewillipe, it is unlikely that an EES will be required. The obligations to the Pipelines Act will be sufficient in assessing the environmental and social risks of the project.

[3] The difference between Iona injection capacity and SWP capacity is approximately 15 TJ/d. Iona injection supplies west to the Western Transmission System (15TJ/d in winter peak conditions) and east towards Melbourne. For example, for the expansion case where Iona injection capacity is increased to 615 TJ/d, the SWP capacity is 600 TJ/d.

4.3 Option 3 - Looping Only

Option 3 details the augmentation looping only to increase Iona injection capacity. The augmentation assumes that Irrewillipe and Stonehaven compressor are not installed. Looping will be based around the Winchelsea compressor station and sufficient to increase Iona injection capacity into the SWP to 615 TJ/d. Refer to Appendix C for the configuration of the expansion.

Table 4-3 Installation of Looping

Augmentation	Iona Injection Capacity (TJ/d)	SWP Capacity (TJ/d)	Capital Expenditure ($m)	Completion	Commentary
Lay 88 km x 500 mm looping around Winchelsea compressor station	615	600	$331.2m	Winter 2029	Looping: 39 km and 49 km upstream and downstream of Winchelsea compressor station. Total Looping: 88 km

Total capital expenditure the looping is in the order of $331.2m.

Due to the pipeline looping length of 88 km, an EES referral is likely to be triggered, as there would be potential clearing of more than 10 hectares of sensitive native vegetation to construct the loops, combined with heritage and social impacts including land access from landowners. There are construction challenges with major crossing such as the Moorabool River and Barwon River along the looping route. Construction cannot commence until the EES is approved which could take up to 3 years. The looping is scheduled to be completed by winter 2029, subject to all regulatory parties turning around approvals by Q1 2028.

One of the benefits of the looping option is that the looping of the SWP has around 50 TJ higher linepack compared to Option 2. However, the usable linepack is only ~2 % greater than Option 2, hence slightly more linepack to manage the high peak hour demands of any future GPG connecting in the SWP location.

APA had considered extending the existing 88 km of looping by an additional 56 km to cover the full length of the SWP of 144 km. This expansion would increase the SWP's capacity to over 700 TJ/day and enhance the system's usable linepack. However, the added length would raise the project cost by at least 50%[4] and increase the risk of not completing the works before winter 2029. To mitigate potential delays in future looping extensions, early works activities on land access and approvals could be initiated earlier (refer to Section 4.5).

Due to the significant higher capital cost and longer schedule of the 88 km looping option compared to Option 2, the looping option is deemed less prudent.

4.4 Sensitivity to Culcairn flow assumptions

There is an interaction between flows from Iona, Longford and Culcairn into the Melbourne. Increasing flows from Culcairn has a greater impact on the capacity of Iona to inject into the SWP, compared to higher flows from Longford.

Sensitivity analyses were conducted to determine the impact of the Culcairn flow assumptions on the SWP capacity. A case of no Culcairn flows was analysed with the 180 TJ/d transferred to Gippsland supply (on top of the 285 TJ/d) to achieve the supply-demand balance.

The results showed:

[4] High level estimate only. APA has not conducted any detailed works to determine the cost estimate of increasing the looping length by another 56 km.

- For Option 2 (Compression only), the Culcairn 0 TJ/d was around 10 TJ/d higher, that is, 625 TJ/d, compared to 615 TJ/d
- For Option 3 (Looping only), the length of loop was around 5 km shorter for the Culcairn 0 TJ/d case.

The lower capacity for the Culcairn 180 TJ/d case is due to the loss in available linepack in the Victorian Northern Interconnect pipeline (VNIE) when transporting higher flows south into Melbourne. For Culcairn 0 TJ/d, there is spare capacity to store intra-day linepack in the VNIE pipeline which results in a higher capacity outcome for the SWP.

The Culcairn 180 TJ/d assumption, while conservative, de-risks the impact of supply sources, particularly when there is uncertainty in the future gas supply receipt points and volumes. For the looping option, land and access approvals has a long timeframe, hence it is prudent to ensure that the looping length covers all supply cases.

4.5 Further SWP Expansion Scenarios

Implementation of Option 2 (new compressors at Stonehaven and Irrewillipe) will bring the SWP beyond its compressed capability, hence requiring looping in its next stages of expansion. Projects such as floating LNG terminals (e.g. Viva, Vopak, Venice) and more production from the Otway producers (including Iona's Stage 2 670 TJ/d expansion) could connect to the SWP to mitigate the seasonal shortfall in gas supply in the VTS from 2029. Which project(s) will achieve FID may be better known by the next Access Arrangement period (2028–2032).

Depending upon the connection point and volumes of gas, most of these projects would each require a different reason and solution for SWP expansion. For example, further SWP looping may be constructed to minimise the back-off impact on Iona injections by a new supply connection downstream of Iona. It could also be required to access additional gas from Otway or from South Australia. Augmentation of the BLP would be required once the volumes from the SWP exceed approximately 770 TJ/d.

APA notes there are challenges in anticipating which location and length of looping to plan for, given the current level of uncertainty where new gas supplies will come from and the potential long lead time to secure land access and approvals. Hence it would be prudent to undertake early works activities, such as desktop environmental assessment, ecologists field and threatened species surveys of the entire SWP and BLP (from Lara to Truganina) to later reduce lead times in securing approvals for any future looping, if required.

APA is planning to commence early works for the land access and approvals of the SWP and BLP within Q4 2025. APA acknowledges that new economic gas supplies may connect on the east side of the VTS (i.e. PKGT, Golden Beach) which may not warrant further expansion of the SWP. However, APA is ensuring delays are avoided for connections of any future new gas supplies into the SWP.

5. Cost/Benefit Analysis

The cost/benefit of the SWP Expansion to 615 TJ/d are outlined in the table below.

Table 5-4 Cost/Benefit Analysis

Option	Benefits (Risk Reduction)	Costs
Option 1 Do Nothing Option	No capital expenditure required.	Capex: $0 m Risk of winter peak shortfall of gas supplies in the VTS as Longford continues to decline.
Option 2: Compression at Stonehaven and Irrewillipe (Recommended Option)	APA already owns lands at Stonehaven and Irrewillipe, hence, reducing the time frame to develop capacity. Unlikely to trigger an EES due to localised construction area. The project is scheduled to be completed by winter 2028.	Capex: $ 195.3m Capacity may be reduced if floating LNG terminal connects, depending upon connections point and augmentation solution. Higher operating costs and carbon emissions running additional compressors. However, these units will only operate during winter peak periods, noting that there is only a finite amount of storage within the Iona UGS.
Option 3: Looping 88 km	Less carbon emissions and operating cost compared to compression option. Has 2% more usable linepack for existing/new GPGs compared to Option 2.	Capex: $ 331.2 m Less cost-effective option than Option 2. EES is likely to be triggered, extending the project completion schedule to winter 2029. Capacity may be reduced if floating LNG terminal connects, depending upon connections point and augmentation solution.

APA undertook a cost-benefit analysis on the completion of the WORM in the context of the VTS 2023-28 access arrangement.[5] In that analysis, we calculated an estimated value of domestic customer reliability of $6,175/GJ, based on the AER's 2021 electricity Value of Customer Reliability (VCR). We have updated this analysis using the 2024 industrial VCR.[6] We consider this is a reasonable approach, as gas load curtailment would apply first to gas fired power generation – curtailment of GPG load could result in industrial electricity load shedding.

Applying this analysis to the project yields the following results:

Step 1: Estimate the annual cost associated with building the SWP expansion

Total capital cost of SWP expansion	**$ 195,300,000**		
WACC [per 2023 PTRM]	x 5.55%		
Return on Capital (annual)			10,839,000
Depreciation over	30	years (annual)	6,510,000
Opex (annual) (est)			600,000
Total SWP expansion annual revenue impact per annum			**$ 17,949,000**

Step 2: Estimate a Gas VCR

Victoria electricity VCR (industrial customer)[6]	$ 33.49	/kWh	
Convert to GJ:	÷ 0.0036	GJ/kWh	
Victoria Gas VCR			**$ 9,303 /GJ**

Step 3: Calculate the amount of unserved energy at which the Value of Customer Reliability and the cost of the SWP expansion break even

Total SWP expansion annual revenue impact	$ 17,949,000
Vic Gas shadow VCR	÷ $ 9,303 /GJ
Breakeven unserved energy	**1,929 GJ/year**
	1.9 TJ/year

This analysis finds that the benefit of the SWP expansion project matches the cost of the project at 1.9 TJ/year. If the SWP expansion is not built, and consumption is curtailed, by as little as 1.9TJ, then the cost of the SWP expansion would be the preferable option.

As the SWP expansion allows approximately 80TJ/day of additional gas to be accessed, it is clear that the benefits of this project far outweigh its costs.

[5] See APA VTS - 2023-27 AA revised proposal - Updated costs of WORM - August 2022 – Public https://www.aer.gov.au/system/files/APA%20VTS%20-%202023-27%20AA%20revised%20proposal%20-%20Updated%20costs%20of%20WORM%20-%20August%202022%20-%20Public.pdf

[6] See AER, Values of customer reliability Final report on VCR values, December 2024. We note that the industrial VCR is much lower than the residential VCR ($49.23/kWh). https://www.aer.gov.au/system/files/2024-12/2024-12-18%20AER%20-%20Final%20report%20-%202024%20VCR%20review_0.pdf

6. Consistency with the National Gas Rules

The requirements for justification of conforming capital expenditure specified in Rule 79(2) are as follows:

The capital expenditure must be justifiable on one of the following grounds;

a. The overall economic value of the expenditure is positive, or

b. The present value of the expected incremental revenue to be generated as a result of the expenditure exceeds the present value of the capital expenditure, or

c. The capital expenditure is necessary;

    i. To maintain and improve the safety of services, or

    ii. To maintain integrity of services, or

    iii. To comply with 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 (as distinct from projected demand that is dependent on an expansion of pipeline capacity); or

d. The capital expenditure is an aggregate amount divisible into two parts, one referable to incremental services and the other referable to a purpose referred to in paragraph "c", and the former is justifiable under paragraph "b" and the latter under paragraph "c".

APA VTS considers that the above presented capital project meets the criteria of Rule 79 that is the project capital expenditure is necessary to maintain integrity of services, and to maintain the capacity to meet existing levels of demand for services, hence the capital expenditure is justified under Rule 79 as conforming for the purpose of its inclusion into the capital base of the APA VTS System, should the project proceed.

7. Cost breakdown

The cost estimates for both Option 2 (recommended) and Option 3 are detailed below in 2025 dollars.

7.1 Option 2: Compressors Cost Estimate

Option 2	2025	2026	2027	2028	2029	Total
Capex	2.6	51.5	106.7	34.5		**195.3**
Opex				0.30	0.60	**0.90**
Total ($m)						**196.2**

Operating cost is estimated to be around $0.60 m per annum after the compressors are installed by winter 2028.

Total Project Breakdown (Option 2 – compression)

	2025	2026	2027	2028	2029	Total
Project Management	0.6	3.4	3.4	1.7		**9.1**
Land & Approvals	0.4	3.1				**3.5**
Design	1.5	7.6				**9.1**
Procurement		34.9	34.8			**69.7**
Construction			63.4	23.7		**87.1**
Commissioning & Handover				7.5		**7.5**
Corporate Overhead	0.1	2.5	5.1	1.6		**9.3**
Total ($m)	**2.6**	**51.5**	**106.7**	**34.5**		**195.3**

7.2 Option 3: Looping Cost Estimate

Option 3	2025	2026	2027	2028	2029	Total
Capex	2.3	14.4	21.1	58.8	234.6	**331.2**
Opex					0.04	**0.04**
Total ($m)						**331.3**

The capital cost for Winchelsea compressor station reconfiguration is included in the cost above and is below $100 k.

Operating cost is estimated to be around $0.07 m per annum after the looping is completed by winter 2029.

Total Project Breakdown (Option 3)

	2025	2026	2027	2028	2029	Total
Project Management	0.5	3.1	3.1	3.1	2.5	**12.3**
Land & Approvals	1.7	10.6	10.6	10.6	50.1	**83.6**
Design			1.9	1.4		**3.3**
Procurement			4.5	40.9		**45.4**
Construction					169	**169.4**
Commissioning & Handover					1.3	**1.4**
Corporate Overhead	0.1	0.7	1.0	2.8	11.2	**15.8**
Total ($m)	**2.3**	**14.4**	**21.1**	**58.8**	**234.6**	**331.2**

7.3 Accuracy of Cost Estimates and Schedule Risks

The estimates presented in this business case are at a Class 5/Class 4 level. These estimate classes and accuracy reflect the short duration of time to address the urgency of securing early approvals, enabling the project to be completed as soon as possible to mitigate supply shortfalls. The estimates have been developed using parametric modelling, with adjustments made for key site-specific factors relevant to this project.

There is greater confidence in the compression-only option (Option 2), with an expected accuracy range of -10% to +20%. This is primarily due to the availability of rate data and clarity around plant sizing. Compressor station procurement and construction costs are informed by quantities and actual or pre-award rates from a similar-sized facility.

In contrast, the pipeline looping option carries more uncertainty, with an estimated accuracy range of -30% to +50%. This reflects potential challenges such as latent terrain conditions, construction obstacles, and variability in land access requirements and biodiversity offsets, which have not yet been assessed. Pipeline looping procurement costs are based on recent actuals ($/tonne), while construction rates have been rationalised using benchmarks from the WORM project. Approvals costs assume similar agency interactions and fee structures as those experienced on WORM. Land access effort has been inferred from land registry data, indicating a high number of stakeholders and potentially lengthy engagement processes. Project Management, Construction Management, Engineering Design, and Commissioning costs are based on typical manning levels and durations aligned with the defined scope of work.

Improving Estimate Accuracy

For both options, estimate accuracy and project schedule can be significantly improved by progressing Front-End Engineering Design (FEED). Specifically for Option 3, engaging specialist consultants (activities per list below) will help refine cost impacts and timelines. Early engagement with landholders, including native title claimants, will also provide greater certainty around land access costs and effort (primarily around construction area disturbances). Upfront Engineering would confirm process conditions, equipment sizing, piping layout, and support civil design through geotechnical and site surveys. A market exercise should then be conducted to validate key equipment procurement and construction costs.

Reducing Schedule Risks

For the Looping option, the key constraint lies in securing access and approvals. Key activities (from now to February 2026) to enable the project to meet the scheduled timeline.

- Desktop surveys for native vegetation and ecological disturbance
- Threatened species field surveys
- Biodiversity and environmental offset studies
- Noise assessments and modelling
- Early scoping for expected EES and EPBC referrals
- Early engagement with landowners and native time claimants
- Geotechnical investigations
- Further options screening and scope refinement
- Early engagement with long-lead item vendors
- Brownfield site assessments to identify potential long-lead issues.

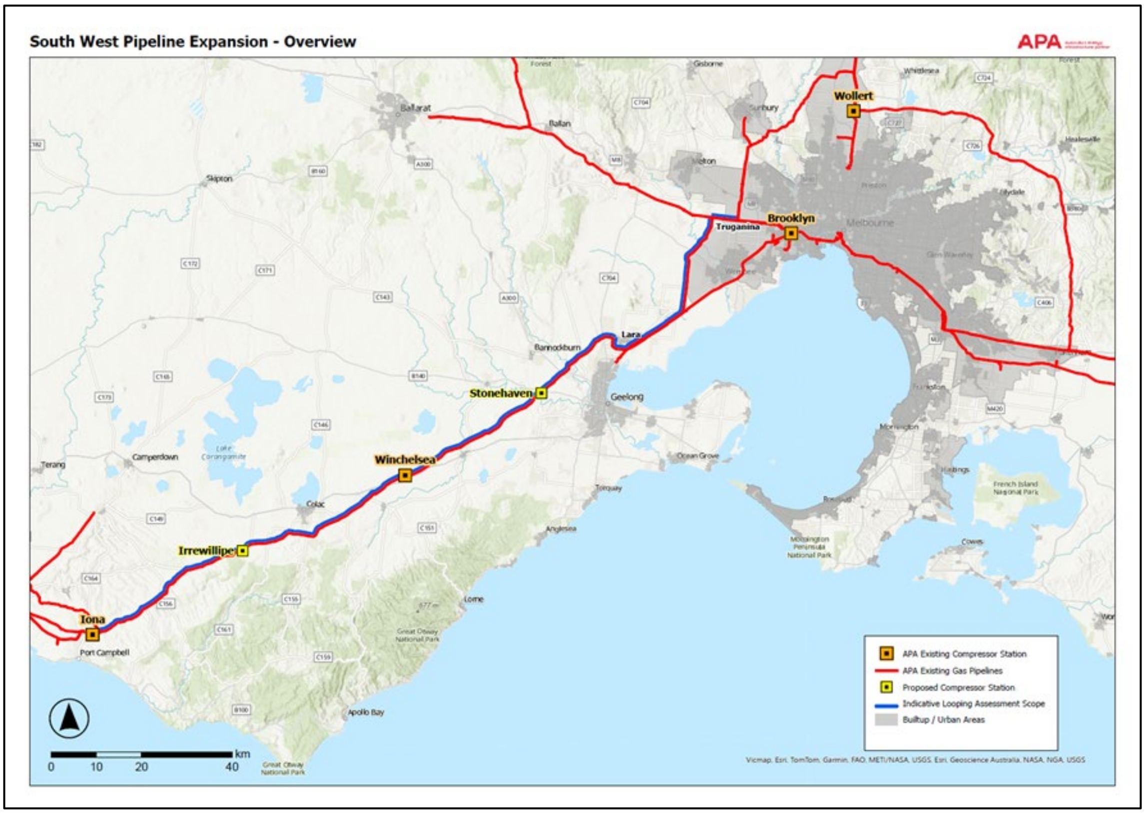
Risks to the project schedule are as follows:

- Loss of seasonal windows for ecological, flora, and fauna surveys, resulting in incomplete or delayed EES and missed gas-on dates
- Exposure to regulatory timelines beyond APA’s control if referral planning is not proactively managed, leading to delays in approvals and missed project milestones.

For the Compression option, the critical path is driven by long-lead procurement.

- Missing the Winter 2028 target due to delayed order placement (early indications suggest compression packages have a 15 –18 month delivery lead time)
- Risk of early procurement of non-fit-for-purpose equipment, potentially requiring costly on-site modifications and failing to meet project objectives.

Appendix A: Location of the SWP and Compressor sites



Appendix B: VGPR 2025 Peak Day Supply and Demand

Extract from AEMO's VGPR 2025 forecast for Peak Day for Supply and Demand

Table 14 Forecast peak day system demand supply adequacy, 2025 to 2029 (TJ/d)

Supply source		2025	2026	2027	2028	2029
Gippsland [A]	Expected [B]	686	657	630	484	285
	Anticipated	0	0	0	0	0
	Total available plus anticipated	686	657	630	484	285
Port Campbell (Geelong) [D]	Expected [E]	523	523	523	523	523
	Anticipated	0	0	0	0	0
	Total available plus anticipated	**523**	**523**	**523**	**523**	**523**
Melbourne	Expected	87	87	87	87	87
Total Victorian supply	Total Victorian expected	1,296	1,267	1,240	1,094	895
	Total Victorian anticipated	0	0	0	0	0
	Total Victorian expected plus anticipated	**1,296**	**1,267**	**1,240**	**1,094**	**895**
1-in-2 system demand		1,071	1,047	1,021	987	942
1-in-20 system demand		1,156	1,130	1,101	1,064	1,016
1-in-2 day surplus quantity with Victorian expected supply		**226**	**220**	**219**	**107**	**-47**
1-in-20 day surplus quantity with Victorian expected supply		**140**	**137**	**139**	**30**	**-121**

Appendix C: Configuration of Expansion Options