always powering ahead

Victorian Transmission System Stakeholder Engagement Group. 2023-27 access arrangement (AA6).

Roundtable 9 – Demand & Supply Final Report. Depreciation. Engagement timeline refresh.

15 September 2021

Acknowledgement of Country

We would like to begin by paying respect to the Traditional Owners of the land on which we meet today and their continuing connection to land, waters and community.

We pay our respect to Traditional Owners, their cultures, and to their elders past and present.

Today's discussion

1	Welcome & Acknowledgement of Country	Start 2.30
2	Recap and feedback on Roundtable 8 • What we heard • Our response and follow-up • Update on stay-in-business capital expenditure forecasts	2.30 to 2.45
3	Demand & supply study. • Final Draft Report from Oakley Greenwood	2.45 to 3.15
4	Decarbonisation & depreciation	3.15 to 3.45
5	Engagement timeline update	3.45 to 3.55
6	Wrap up	3.55 to 4.00

Note that the meeting will be recorded to assist updating issues register.
Video will not be distributed outside of APA.

Purpose of today's discussion is to inform, consult, involve.
We do encourage your views and feedback as we work through some complex issues.

Follow up from Roundtable 8

What we heard	Our response
Demand & Supply Study	
From 2028 why is 100% gas flowing from North to South?	• AEMO is forecasting declining production in southern states.
Iona Storage capacity is being increased to 570TJ. Will this help to alleviate supply issues.	• Yes for peak demand but not adequate for seasonal storage. Storage still needs to get gas supply from somewhere.
Storage is not a public good and whether it is available to cover a shortfall is dependent on who controls extraction rights on that occasion.	• Yes agree. These are commercial arrangements. APA does not have visibility of these arrangements with Iona.
How does wellhead gas cost play into these scenarios on a delivered cost basis into Victoria?	• In the analysis for SWP 570TJ – because it is for security of supply, the cost of gas does not get considered. (In the longer term, the market will decide).

Oakley Greenwood will be presenting findings today.

Follow up from Roundtable 8

What we heard	Our response
South West Pipeline	
Do we need SWP capacity increase? Key theme emerging is whether its appropriate to invest using long lived assets for what may be a short term supply issue.	• At the 29 July 21 capital workshop, Lochard Energy announced that it had reached FID on Iona storage expansions to deliver 570TJ/day. While its still under consideration, our position is to propose investment to meet committed project of Iona 570TJ capacity to support security of supply (under Rule 79). • APA will need assurance that the assets will not be subject to redundancy provisions and that the asset lives for depreciation are shortened. • APA will be proposing a fixed principle so that redundancy provisions do not apply to SWP investment.

Follow up from Roundtable 8

What we heard	Our response
South West Pipeline	
If the SWP investment is not made, there is a risk of gas prices reaching Value of Lost Load (VOLL) of $800/GJ. A few days at VOLL would cover the cost of the SWP expansion. Its not only Lochard, there is also Otway and Port Campbell.	• SWP capacity investment is being proposed for security of supply reasons.
If SWP proposed capital expenditure is approved, would it be an increase in injection tariffs.	• Yes. As we discussed at R4 suppliers pay injection tariffs and retailers pay withdrawal tariffs.
Range of questions about Rule 80 pre-approval.	• Our latest thinking. We propose to lodge a three-part Rule 80 application with the trigger contingent on proposed projects meeting FID. (2 x LNG import terminals; Further Iona expansion beyond current 570TJ).

Follow up from Roundtable 8

What we heard	Our response
Acceleration depreciation impacts on tariffs	
On the question of accelerating assets - say in 2035, will APA be happy operating for no return. Example given - currently, negotiating with a pipeline whose assets are fully depreciated - there is no reward in it for them - no profit - therefore they are shutting it down.	• We do not propose to depreciate to zero until 2050. Even so, if things change there is flexibility to change the depreciation profile.
You are shifting costs between users over time- and those users change - so it as a reallocation of wealth. Also - compressor unit costs are not entirely sunk/stranded as opposed to the discussion which assumes they are.	• Intergenerational fairness has been raised before. It is a principle that is consistent with our latest thinking to commence accelerating depreciation earlier rather than later. • **Scott will be presenting further consideration of asset lives and depreciation**.

Updates on capex forecasts

Stay in business capex forecasts

- Latest SIB forecasts indicate investment of $145 million required compared to $83 million presented in April at R5
- Some of the main reasons for this are
  - An increased focus on asset integrity which is increasing investment on inline inspections - pigging and the unpiggables program
  - Safety measures for high consequence areas
  - New obligations under that Security of Critical Infrastructure (SOCI) obligations
- We will present more information at Roundtable 10

Security of Critical Infrastructure obligations

- The Security of Critical Infrastructure Amendment (2020) Bill when passed (expected late September) significantly increases the obligations and effort required by APA to maintain compliance.
- SOCI obligations are far reaching and impact
  - Physical security
  - Cyber security (impacting Information Technology, Operational Technology
  - Personnel security
  - Supply chain.
- We will present more information at Roundtable 10.

Oakley Greenwood

Victorian DTS Stakeholder Forum

APA
September 2021

www.oakleygreenwood.com.au

Overview

Impact of known factors affecting supply and demand

Likely preferred investments

Impact of known changes not otherwise included in 2021 GSOO

Industrial closures

- Altona's closure (pivot to an import terminal)
- QENOS' reduction in operations (closure of ~50% of operations)
  - Combined affect is **~7.24TJ/day (peak)** and **2.28PJ (annual).**

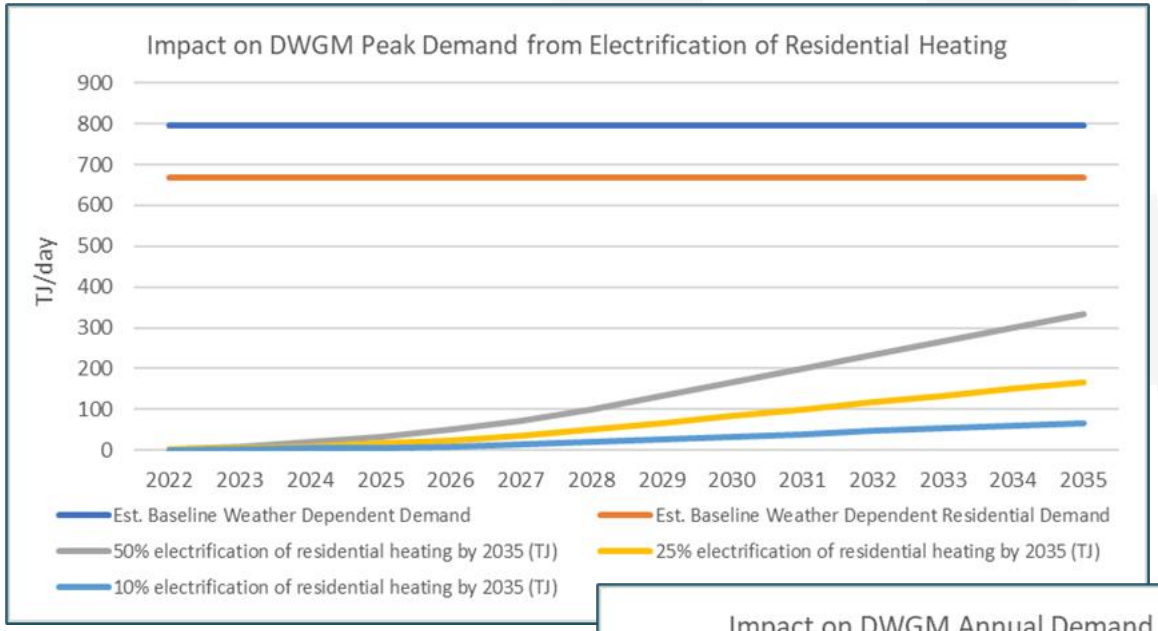
SWQP upgrade

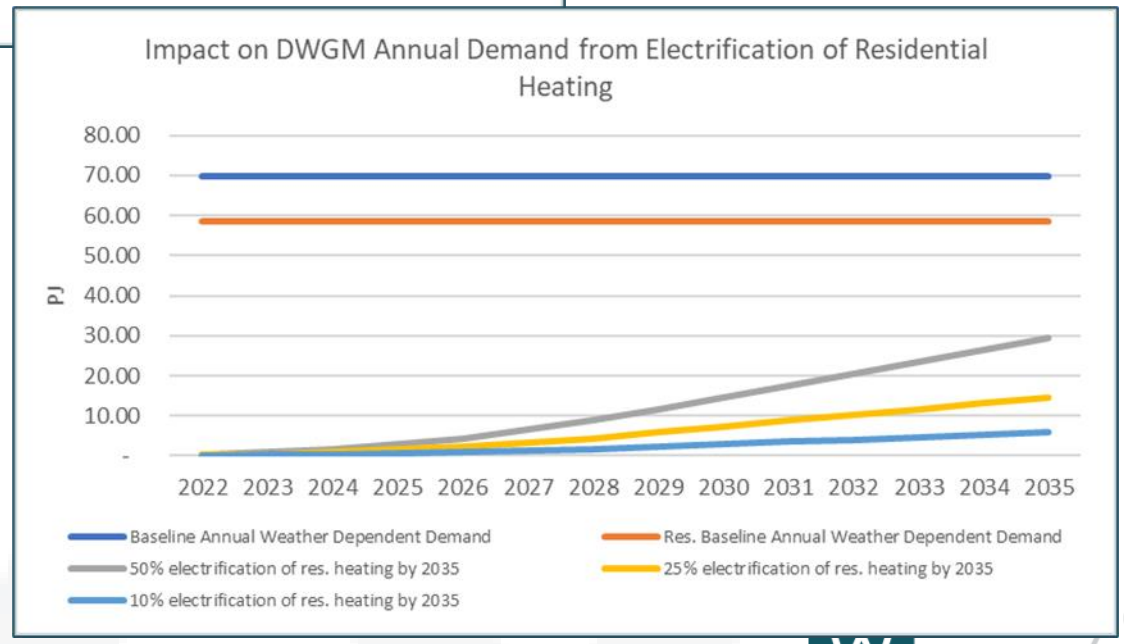
- Increase in capacity, enabling more gas to be transported from QLD to NSW (potentially freeing up capacity that might have otherwise been used to provide gas to NSW, to be pivoted towards supplying other markets, including Victoria)
- Estimated impact is **~100TJ/day**

Potential impact of electrification

- Annual Demand: Up to around 30PJ if 50% electrification of residential heating by 2035
- Peak Day: Up to around 335TJ/day if 50% electrification of residential heating by 2035.

Potential impact of electrification





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Supply Adequacy – Peak Day (TJ/day) and Annual Demand (PJ)

Peak Demand

Key Issue	Impact in 2025 (TJ/Day)	Impact in 2030 (TJ/Day)
Supply Adequacy		
Original GSOO Peak Day Supply Adequacy with PKGT (Southern Mkts)	+273	-308
Peak Day Supply Adequacy after adjustments (Southern Mkts)	**+406.1 to +422.81**	**-92.79 to -9.24**

Annual Demand

Key Issue	Impact in 2025 (PJ)	Impact in 2030 (PJ)
Supply Adequacy		
Original GSOO Supply Adequacy with PKGT (Southern Mkts)	No Shortfall	(65)
Annual Supply Adequacy after adjustments (Southern Mkts)	**No Shortfall**	**-55.4 to -48.08**

Oakley Greenwood

www.oakleygreenwood.com.au

Likely preferred investments over the AA period

Unless the injection capacity from Iona into the SWP, above current SWP capacity, is fully contracted (i.e., or shown to be able to be fully contractable, s.t to increase in SWP capacity), then increased compression on the VN Interconnect is likely to be a more appropriate solution to rely on given the current uncertainty affecting the gas market at present.

This solution has the conceptual advantage:

- Of unlocking the full additional south bound (peak) capacity that is created by APA's expansion of the SWQP/MSP, noting that absent an investment such as this in additional north/south transmission capacity, AEMO's GSOO indicates that flows south bound on the EGP and VNI are at their capacity for a significant proportion of the year;
- Of potentially accommodating more, valuable, flexible seasonal "shaped" gas supplies, to be transported from the larger, more prospective gas outside of Victoria, to help cover monthly winter demand, not just extreme peaks; and
- Of being incremental and flexible, which means its funding is not reliant on the AER accepting the medium to long term forecast needs of the Victorian market, rather the market is able to respond (via contracting for solutions) closer to when the asset may in fact be needed, enabling more (and better) information as to the forecast supply / demand balance in Victoria to be revealed.

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Decarbonisation & Depreciation

Policy environment

- The Victorian Government 2050 net zero target and Gas Substitution Roadmap foreshadow reduced gas usage
- Infrastructure Victoria has opined that "*there is limited scope to repurpose the gas network beyond 2040*" and "*Embedding long-term natural gas use does not align with Victoria's 2050 net zero emissions target*."
- Under the legislated Victorian Government policy there is a risk that the VTS assets will not be in service long enough to recover the value of the assets over what was originally set as their life
  - *The Victoria climate change legislation has changed the VTS economic life*

Given this is a government policy driven change, this impacts the return of prudently invested capital that needs to be recovered from users through VTS tariffs

- The issues that arise:
  - How to recover the prudent and efficient capital invested in the VTS
  - How to facilitate a smooth transition and not cause price shocks in the face of declining volumes
  - How to facilitate intergenerational fairness.

Do you have any comments or suggestions?

Depreciation and the regulatory framework

Assumption inherent in the regulatory framework

- The Australian regulatory framework contains an implicit assumption that the services provided by existing regulated assets will be required in perpetuity.
- When assets reach the end of their economic life, they are assumed to be replaced "like for like" with assets that will provide the same or similar service for another lengthy period.

The consequences of this assumption are:

- The framework includes no provisions for "end of life".
  - there are no provisions to accommodate decommissioning costs or environmental restoration costs.
  - any decommissioning or restoration costs are assumed to be included in the cost of the asset's replacement;
- All capital expenditure is added to the asset class at the standard life of a new asset
  - this tends to extend the composite remaining asset life further.

Indexation

- The capital base is indexed such that when the real value of the decommissioned asset is removed from the capital base and the value of its replacement is inserted, there will be minimal price shocks

Victoria's decarbonisation policy removes this "service in perpetuity" assumption

Consequences of these assumptions

Under the indexed regulatory depreciation framework the return of capital is deferred such that the majority of invested capital is returned to investors (through the depreciation allowance) nearer the end of the asset's economic life (see Figure 1)

This causes the revenue requirement to rise over the life of the asset (see Figure 3)

This is acceptable:

- where the service is assumed to continue in the long term.

This is problematic:

- Where changes to government policy mean that the service is not expected to be provided in the long term; and
- in an environment of declining consumption in response to government policy change.

The regulatory compact presumes that investors are entitled to a return on and of their prudently invested capital

Without this assurance, it will likely freeze further investments in the VTS by APA.

Figure 1

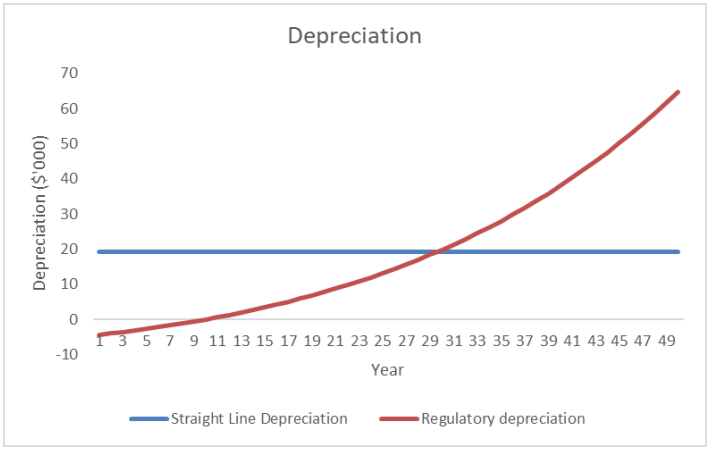


Figure 2

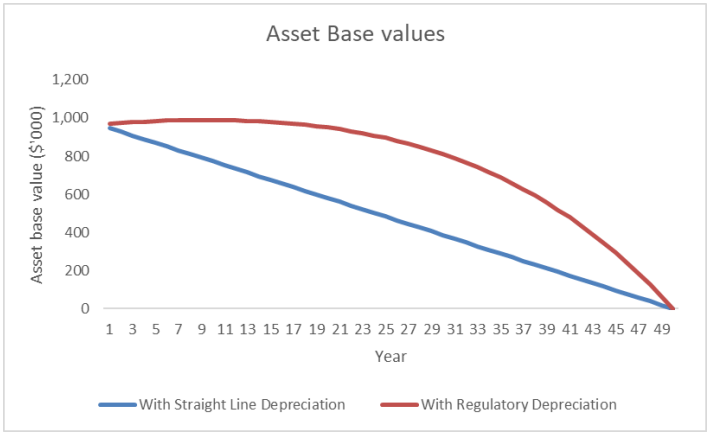
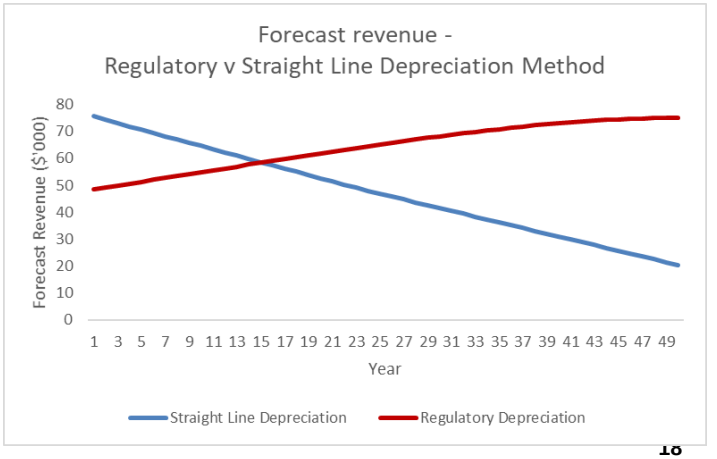


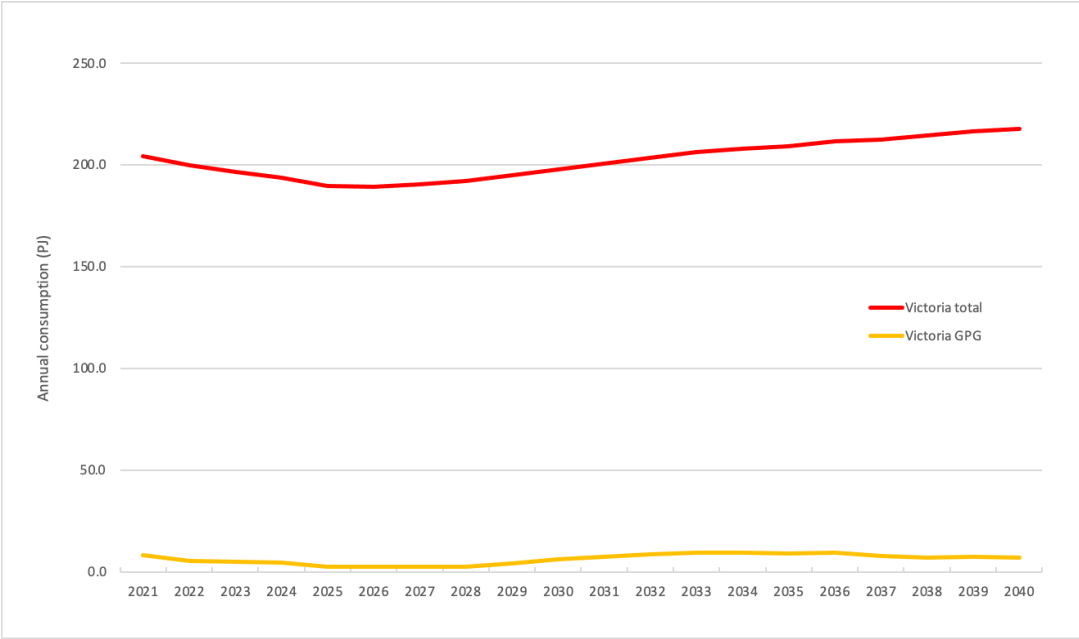
Figure 3



AEMO's forecast is for declining volumes

AEMO March 2021 GSOO

The March 2021 GSOO forecasts flat, or slightly rising volumes out to 2040



AEMO July 2021 IAPR

But AEMO's July 2021 Inputs, Assumptions and Scenarios Report (IASR), based on multi-sectoral modelling, projects significant reductions in gas load:

Net Zero 2050

Residential gas heating remains fairly consistent until it approximately halves in the mid-2030s and is almost entirely electrified in the final years of the horizon.

Interaction of depreciation, revenues, volumes and prices

Under the indexed regulatory depreciation framework the return of capital is deferred such that the majority of invested capital is returned to investors nearer the end of the asset's economic life.

This causes the revenue requirement to rise over the life of the asset.

This problematic in an environment of declining consumption in response to government policy change.

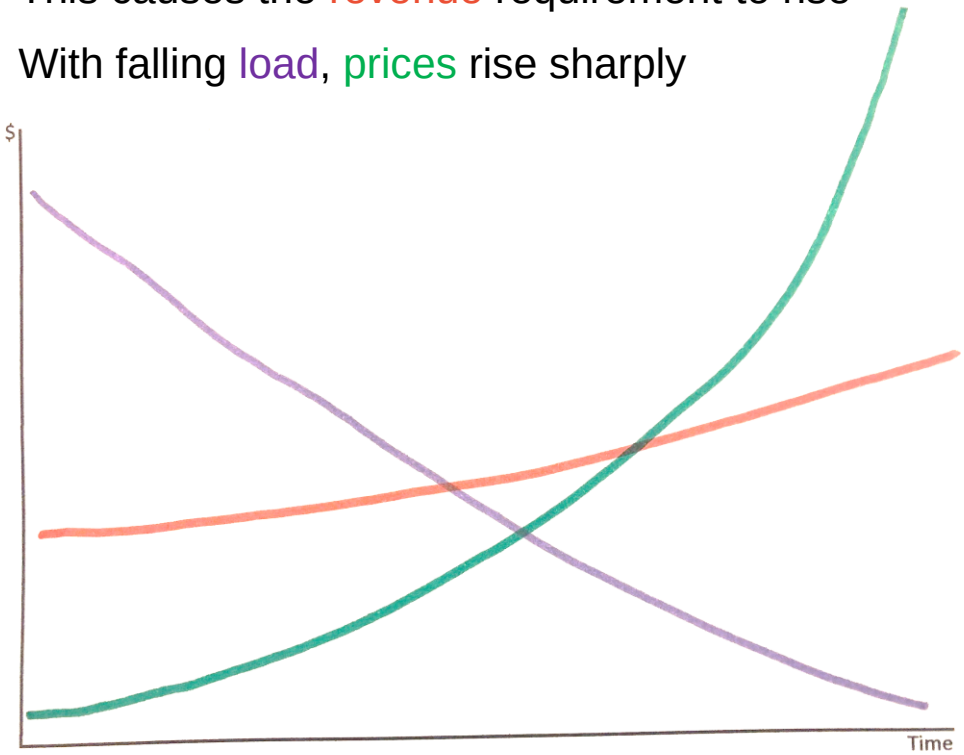
- AEMO now forecasts that half the home heating load will be electrified by the mid-2030s.

Rising revenues ÷ falling demand
= sharply rising prices

Q: What can we do to align the future revenue path with falling demand to keep prices stable?

Regulatory depreciation

- Regulatory Depreciation defers the return of capital towards the end of the asset life
- This causes the revenue requirement to rise
- With falling load, prices rise sharply



Interaction of depreciation, revenues, volumes and prices

Our goal is to create a declining revenue path that will fall in line with volumes, producing stable prices

Under the straight line depreciation framework the return of capital occurs evenly over the asset life.

This causes the revenue requirement to fall over the life of the asset.

This is better an environment of declining consumption in response to government policy change.

- AEMO now forecasts that half the home heating load will be electrified by the mid-2030s.

Falling revenues ÷ falling demand
= more stable prices

Straight line depreciation

- With Straight Line Depreciation, the return of capital occurs evenly over the asset life, resulting in a declining capital base
- This causes the revenue requirement to fall over time
- With falling load, prices remain stable over time

The WOOPS model

As prices increase due to volume falls, there is a risk that the regulated business will not be able to charge prices sufficient to recover its prudently invested capital over the policy-reduced time frame.

This is heavily influenced by the asset life and indexation features of the regulatory framework.

Crew & Kleindorfer suggest that there is a Window Of Opportunity (**WOO**) in which it is possible, through modest early price increases, to return some capital to investors, which would reduce future prices for the regulated service in order for prices to remain stable while volumes fall.

This return of capital must be undertaken early, while the load is large, to reduce the longer term impact to customers. A delay may cause the Window Of Opportunity to have Passed (**WOOPS**)

Our proposal in a nutshell:

Consistent with Crew and Kleindorfer, we propose to:

- start early and start small
  - While the load is still high enough to bear small tariff increases
- reduce existing and new asset lives to 25 years
  - Price impact: approximately 6¢/GJ
- cease indexation of the capital base
  - Price impact: approximately 12¢/GJ

(on a domestic supply tariff in the order of $23/GJ)

and

- To track our direction and progress at each AA Review and adjust accordingly

See Crew, M and Kleindorfer, P, 1992, "Economic Depreciation and the Regulated Firm under Competition and Technological Change", Journal of Regulatory Economics, 4(1), 1992, pp. 51-61.

There is much we do not know

We do not know:

- The speed at which demand will fall in response to the policy initiatives;
  - Such as encouragement to electrify, discouraging reticulation of new developments
- The rate of decline in gas consumption
- The role of hydrogen and its scope to use existing gas infrastructure in the future

But we do know:

that decarbonisation, *mandated by government policy*, presents a risk that customers will experience sharp price increases as decarbonisation progresses

- We know approximately the destination we need to reach, and the time frame in which we need to reach it
  - We propose to start on the journey in a small way, and track our progress at each AA review
  - There will be opportunity to revisit these decisions over the course of the journey

Questions and comments?

Stakeholder engagement timeline update

Engagement timetable (what we've done so far)

VTS stakeholder engagement key activities and dates			
Date	**Activity**	**Topics**	**IAP2 spectrum**
Phase 1 - Setting the scene			
28/10/2020	Consultation	2023-27 access arrangement - engagement plan. Draft for comment	Consult / Involve
28/10/2020	Roundtable 1	Setting the scene, about APA, VTS and the regulatory landscape & draft engagement plan	Inform/ Consult
18/11/2020	Consultation	APA draft Reference Service Proposal circulated for comment	Consult / Involve
25/11/2021	Roundtable 2	Declared wholesale market exit and entry capacity certificates (presentation by AEMO) & reference services draft proposal	Inform/ Consult
10/02/2021	Roundtable 3	APA asset management framework & strategic issues influencing VTS asset management plan	Inform/ Consult
Phase 2 - Getting to the detail - revenue requirements, tariffs and access arrangements			
16/03/2021	Roundtable 4	Introduction to regulatory building block and VTS tariff structures	Inform/ Consult
14/04/2021	Roundtable 5	Overview of 2021Victorian Gas Planning Report; and first look at capital program for VTS	Inform/ Consult
13/05/2021	Issues Paper	Capital program	Involve
19/05/2021	Roundtable 6	AEMO presentation on VGPR. Demand forecasts.	Inform/ Consult
16/06/2021	Roundtable 7	Capital program update & first look at operating expenditure Pigging the Unpiggable: An asset futureproofing initiative	Inform/ Consult/ Involve
29/07/2021	Capital Issues Workshop	Workshop to describe on drivers and decision-making for capital expenditure and engage of issues of concern to stakeholders	Inform/ Consult/ Involve
18/08/2021	Roundtable 8	Capital issues - continuing discussion. Demand and Supply study, South West Pipeline and Depreciation,	Inform / Consult/ Involve
26/08/2021	Information session	Hydrogen: Why it is important to explore options to repurpose the VTS for hydrogen	Inform/ Consult/ Involve
15/09/2021	Roundtable 9	Demand & Supply Final Report, depreciation again, Transformation & Technology, Stay in business update	Inform / Consult

Engagement timetable (going forward there will be more opportunity for interaction)

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Phase 3 - Putting the plans together			
6/10/2021	Roundtable 10	How you have influenced our draft proposal. First look at the revenue requirements - capital and operating expenditure forecasts, impact on tariffs.	Inform / Consult
8/10/2021	Consultation	APA release APA VTS early consultation document	Involve
13/10/2021	Roundtable 11	Early consultation proposal - Q&A session	Involve
11/10/2021 to 22/10/2021	Consultation	Opportunity for one on one meetings with stakeholders	Involve
3/11/2021	Placeholder	Follow-up on any outstanding issues	Involve
8/11/2021	Consultation	Submissions to APA on early consultation document	
17/11/2021	Roundtable 12	How you shaped our thinking on the VTS regulatory proposal	Involve
1/12/2021	Submission	APA VTS regulatory proposal submitted to AER	
9/12/2021	Feedback session	Post lodgement review and feedback on VTS engagement	Involve
TBA	Further roundtables	Proposed during the regulatory process	

First Look proposal consultation document

- We also sent out an outline of the First Look proposal consultation document
- Its intended to be easy to read and intended to focus on matters of interest to stakeholders
- Your comments on what you'd like to see in the First Look document would be welcome.
  - (email comments to Scott and me).

Wrap up

- **Next step** - Roundtable 10 proposed for Wednesday 6 October at 2.30 to 4.30 AEST

- We will cover
  - Stakeholders' influence so far
  - Capital expenditure forecasts
  - Operating expenditure forecasts
  - Revenue requirements
  - Impact on tariffs

Thank you for participating,...
Stay safe…

See you in October

For further information

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