



APA submission

- **AEMC & AEMO Reviews into Extending the Regulatory Frameworks to Hydrogen and Renewable Gases**
- **AEMC rule change to extend the Declared Wholesale Gas Market to distribution level facilities**

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Mr James Tyrell
Senior Advisor
Australian Energy Market Commission (AEMC)

Mr Harrison Gibbs
Advisor
AEMC

Gas Wholesale Consultative Committee (GWCF)
GWCF_Correspondence@aemo.com.au

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RE: APA Submission to the AEMC and AEMO reviews on extending hydrogen and renewable gases into the regulatory framework and amendments to the Declared Wholesale Gas Market

Thank you for the opportunity to comment on the AEMC and AEMO reviews into the changes necessary to accommodate hydrogen blends and renewable gases in the national framework. The AEMC's rule change process to extend the operation of the Victorian Declared Wholesale Gas Market (DWGM) considers similar issues, and therefore this submission also responds to that process.

APA is an ASX listed owner, operator, and developer of energy infrastructure assets across Australia. Through a diverse portfolio of assets, we provide energy to customers in every state and territory on mainland Australia. As well as an extensive network of natural gas pipelines, we own or have interests in gas storage and generation facilities, electricity transmission networks, and over \$750 million in renewable generation.

The hydrogen industry is in its infancy and it is unclear how it will evolve. Businesses like APA are investigating opportunities to repurpose natural gas pipelines and develop new markets for hydrogen. We broadly support the proposed approach to accommodate hydrogen blends and renewable gases within the national gas framework as outlined in the Energy Ministers' consultation paper *Extending the National Gas Regulatory Framework to Hydrogen Blends and Renewable Gases* (Energy Ministers' Consultation Paper).

It is essential that regulatory arrangements for renewable gas infrastructure are clear and transparent and, where possible, consistent across jurisdictions. This will enable the industry to invest with confidence in new technologies such as hydrogen and support the transition to a low carbon future.

When considering the development of gas markets such as the DWGM and Short Term Trading Markets (STTM), as far as possible there should be competitive neutrality between distribution and transmission connected facilities. This will ensure investment takes place where it makes economic sense and not inadvertently restrict hydrogen developments to a particular area of the gas network.

Our submission below provides views on issues raised by the reviews. As outlined in our submission to the Energy Ministers' Consultation Paper, we favour a gradual approach to the regulation of new gas products that builds on existing regulation. Any proposed regulation should support the development of the market for renewable gases and include adequate consideration of whether the benefits of regulation outweigh the costs.

We look forward to continuing our engagement on these important issues. If you wish to discuss our submission in further detail, please contact Beck Mason, Markets Manager on 0417 490 415 or marketsmanager@apa.com.au.

Regards,

A handwritten signature in black ink, consisting of a stylized 'J' followed by a horizontal line.

John Jamieson
General Manager Market Services
Operations Division

1 Executive Summary

Key points

- Transmission infrastructure will be key in enabling the hydrogen and renewable gases industry to gain commercial scale and should be a focus area of these reviews, even at this early stage of market development.
- Jurisdictional harmonisation is essential to maintaining liquidity in the gas industry and cost-effective services given the interconnectedness of the East Coast gas market.
- APA proposes a consultative approach involving facility operators when jurisdictions consider the introduction of Natural Gas Equivalents (NGEs). It is critical that facility operators maintain discretion as to when and how their assets accept hydrogen blends.
- APA is supportive of inclusion of NGEs in the regulatory framework and production trials for NGEs and proposes a gradual approach to regulation that supports the development of the market for renewable gases.
- When considering the extension of the DWGM to distribution connected facilities, competitive neutrality principles should be adopted to ensure hydrogen investment takes place where it makes economic sense.

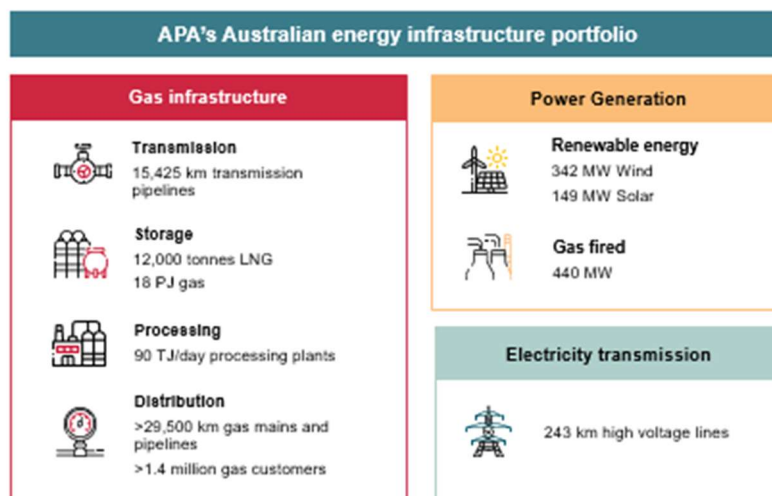
APA is a leading Australian Securities Exchange (ASX) listed energy infrastructure business. Consistent with our purpose to strengthen communities through responsible energy, our diverse portfolio of energy infrastructure delivers energy to customers in every state and territory on mainland Australia.

Our 15,000 kilometres of natural gas pipelines connect sources of supply and markets across mainland Australia. We operate and maintain networks connecting 1.4 million Australian homes and businesses to the benefits of natural gas. And we own or have interests in gas storage facilities, gas-fired power stations.

Our investments also include over \$750 million in renewable generation, making APA the 8th largest renewables investor in Australia. Our high voltage electricity transmission connects Victoria with South Australia and New South Wales with Queensland.

APA is supporting the transition to a lower carbon future. Our ambition is to achieve net zero operations emissions by 2050.

Figure 1



1.1 APA's Pathfinder Program

Our Pathfinder Program is a key enabler in our pathway to our ambition for net zero operations emissions by 2050. Through Pathfinder, we will help unlock energy solutions of the future and develop opportunities to extend our core business. APA has a number of existing projects and partnerships underway that are at the forefront of the hydrogen industry's development.

Pathfinder's initial focus is on clean molecules, off-grid renewables and storage. Our first Pathfinder project is seeking to enable the conversion of around 43-kilometres of the Parmelia Gas Pipeline in Western Australian into Australia's first 100 per cent hydrogen-ready transmission pipeline and one of only a few existing gas transmission pipelines in the world.

This project, which is being delivered in partnership with Future Fuels Cooperative Research Centre and Wollongong University, carries enormous significance for APA and the entire industry. It will create a significant opportunity for the development of a hydrogen hub in Western Australia. More broadly, the results will support decision-making as to the potential for APA's other gas infrastructure assets to be hydrogen-ready.

APA has also joined a consortium of Australian and Japanese energy players in an effort to establish Queensland's largest green hydrogen project. Through our Pathfinder program, we joined Stanwell and Japanese companies Iwatani Corporation, Kawasaki Heavy Industries, Kansai Electric Power Company and Marubeni to commence a detailed feasibility study into the development of a large-scale green hydrogen project in Central Queensland. The project proposes to export green hydrogen to Japan and supply large industrial customers in the Central

Queensland region to support emissions reduction for the domestic industry. When built, the proposed green hydrogen project will be the largest in Queensland – commencing production in the mid-2020s, the project would scale up to over 3,000 MW of electrolysis capacity by the early 2030s.

APA, Pilot Energy and Warrego Energy have partnered to investigate opportunities in Western Australia to commercialise and deliver low cost hydrogen as part of a newly established consortium. The consortium's Mid West Blue Hydrogen and Carbon Capture and Storage (CCS) feasibility study will look at blue hydrogen technology, locations for production, and opportunities to commercialise and distribute low-cost blue hydrogen. The feasibility study will also assess the potential use of the Cliff Head oil project and other reservoirs across the broader Perth Basin to store the carbon dioxide.

Not only is APA's Pathfinder Program a key enabler in APA's efforts to achieve net zero operations emissions by 2050, it will also enable APA to be a key partner and contributor with strong capabilities in Australia's burgeoning hydrogen industry.

1.2 Victorian Transmission System State-Wide Hydrogen Blending

APA has proposed to test Victoria's high pressure gas transmission system to safely blend hydrogen as part of its Victorian Transmission System access arrangement submission to the Australian Energy Regulator (AER) submitted 2 December 2021. The proposal, which would test 39 sections of the Victorian network under pressurised hydrogen conditions, is to understand the suitability of Victoria's transmission system for hydrogen blending as well as any potential future works required to safely accommodate hydrogen.

APA is at the forefront of informing the transition of transmission infrastructure to hydrogen ready in the absence of Australian standards for this conversion. It is vitally important to undertake a technical safety assessments such as this, to inform the conversion of gas infrastructure, at the same time as governments progress reforms to the National Gas Law.

1.3 APA Network Services' Facilitating Hydrogen

Through our gas distribution services, APA owns, manages and operates local distribution networks that deliver gas to around 1.5 million households and businesses in South Australia, Victoria, Queensland, country New South Wales and the Northern Territory. We do this via our owned and operated Tamworth, NSW and Darwin, NT networks, 20% ownership interest and operatorship of the Allgas network, South East Queensland and operation of networks on behalf of Australian Gas Networks (Australian Gas Infrastructure Group company).

Australian Gas Networks (AGN) is a leader on hydrogen in distribution projects with hydrogen parks in progress in Gladstone, Murray Valley and South Australia. APA is

working with AGN to support the supply from these projects through the distribution networks within our operational arrangements.

1.4 Submission Structure

Our submission to the Policy Paper is structured as follows:

- Part A - APA's key perspectives of issues raised in the AEMC and AEMO consultation papers.
- Part B – APA's responses to the questions raised in the AEMC consultation paper *Review into Extending the Regulatory Frameworks to Hydrogen and Renewable Gases*.
- Part C – APA's responses to the questions raised in the AEMC consultation paper *National Gas Amendment (DWGM Distribution Connected Facilities) Rule 2022*.
- Part D – APA's responses to the questions raised in the AEMO consultation paper *Extending the National Gas Regulatory Framework to Hydrogen Blends & Renewable Gases: AEMO Consultation Paper on the Procedures*.

2 PART A – Key issues

2.1 Incorporation into National Gas Frameworks

The hydrogen and renewable gases industry is in its infancy and it is unclear exactly how it will evolve. Businesses like APA are proactively investigating opportunities to repurpose natural gas pipelines, build production facilities and develop markets for hydrogen and renewable gases. We support the proposed approach to accommodate hydrogen blends and renewable gases within the national gas framework through the term 'natural gas equivalent'.¹

The term NGE makes it clear that only gases suitable for consumption in existing natural gas appliances are covered within the regulatory framework. This will help resolve ambiguity about whether hydrogen blends and renewable gases fit within the regulatory framework.

2.2 Burgeoning hydrogen industry & regulation

Whilst APA supports a certain regulatory framework to assist the development of new industries, including hydrogen, we are also conscious of not developing a rigid legislative framework or regulatory oversight at its infancy until we better understand its characteristics as a commercial operation at scale. APA supports a framework that allows flexibility as the industry evolves and is agnostic as to where the industry develops. Rules and procedures can be augmented to suit industry and government strategy and applied on a holistic perspective so as to maintain competitive neutrality, liquidity and ease of movement gas molecules across East Coast gas markets.

APA has provided a submission to the Energy Ministers' Consultation Paper that outlines our views on regulatory coverage of this burgeoning industry. In summary, we broadly support the proposed approach to accommodate hydrogen blends and renewable gases within the national gas framework as outlined above, though we propose a more gradual approach to the regulation of new gas products such as hydrogen, consistent with the [European Regulators' recommended position](#), that:

- supports the development of the market for renewable gases and
- adopts a gradual approach to economic regulation if there is evidence of market failure and the costs of imposing regulation do not outweigh the potential costs.

Whilst APA advocates for gradual and prudent approach to economic regulation, we do see a role for regulatory oversight on technical and safety aspects of hydrogen

¹ Please refer to the AEMC consultation paper for definitions.

transport and consumer protections. This will ensure confidence in the supply of and use of hydrogen and renewable gases.

An aspect for consideration within the regulatory framework is how the national framework provides signals to support the evolution towards lower carbon based products or compensates facility operators for the costs of transitioning. For instance, where shippers wish to transport NGEs or a jurisdiction introduces a percent blend, there will be a capacity impact and possible de-rating on existing pipeline infrastructure, given hydrogen is three times the volume of natural gas for the same energy content. Consideration will need to be given on regulated pipelines as to how this cost is recovered through the regulatory framework or the facility operator appropriately compensated.

Similarly, fuel gas is not included in the operating cost of regulated pipelines within the Victorian Declared Transmission System (DTS) and is provided by shippers in kind. Compressors form part of the regulated asset base and as such facility owners must demonstrate that both operating and capital costs are the most efficient outcome for customers. There is currently no category for consideration of environmental benefits such as lower-carbon alternatives. Hydrogen as a fuel is currently more expensive than natural gas. Since there is no Government policy that mandates the use of lower-carbon alternatives, higher operating costs associated with hydrogen as a fuel may be borne on the facility owners and not included for cost recovery on regulated assets.

2.3 Ring Fencing

Energy supply and infrastructure services are undergoing continuous change and challenges to reduce cost, be competitive and diversify to capture opportunities. Existing energy companies that have capabilities, knowledge, expertise and infrastructure in energy that can be leveraged to develop hydrogen supply quickly, with ease and potentially at lower cost should not be discouraged. Ring fencing provisions already exist within the national gas framework and are utilised by companies such as APA to participate in renewable energy generation and energy transportation.

The renewable gases industry is very much in its infancy and it is not yet clear how it will evolve. Flexibility in ring fencing arrangements may be required to support the development and commerciality of renewable gas projects and blending.

2.4 Jurisdictional Harmonisation

Australia's east coast transmission pipeline infrastructure has evolved into an interconnected grid from Darwin in the north to Tasmania in the south. These pipelines do not stop at the jurisdictional border. A fundamental enabler of this interconnected network is a national standard gas specification (AS 4564). For blended streams of gases, if jurisdictions were to now determine the gas specification independently,

including differing tolerance levels, introduce blends at different times or have different tolerances in sections of the system, this would impact liquidity, restrict movement of molecules between regions and impede facility operators' ability to operate the grid with certainty and is likely to increase costs. If a pipeline is built and dedicated between a supply source and demand point (e.g. hydrogen export terminal) and not interconnected with the grid, it makes sense for this pipeline to have differing gas specifications.

Similarly, for distribution networks, APA advocates standardised gas specifications between distribution networks and transmission networks as part of the integrated grid and gas specifications and heating value consistency between jurisdictional distribution networks. Bespoke requirements add complexity, increase operating costs due to differing system architecture, augmentations and processes by jurisdiction which increases the ultimate cost for consumers. Bespoke requirements also increase compliance burden on companies and the potential for compliance breaches due to complex systems. Businesses such as APA operate at scale, across many markets and in different jurisdictions, and therefore consistency across systems and processes is critical to maintaining cost effective services.

APA proposes active coordination and consultation between Commonwealth, State, Territory and industry representatives with the aim of harmonisation in gas specifications, blend percentages and timing of NGE introduction.

2.5 Operationalising the Proposed National Gas Framework Changes

The AEMC paper proposes that the National Gas Law (NGL) encapsulate hydrogen and renewable gases by amending the definition of natural gas to natural gas equivalents, constituent gases and other gases. The production, transport, storage of NGEs through transmission pipelines would be permissible once the relevant jurisdiction(s) establishes appropriate regulations, grants licences or undertakes other administrative processes to determine a level of blending.

The AEMC paper suggests that jurisdiction could mandate that a pipeline transition to a NGE.² Whilst APA is actively studying hydrogen in existing transmission pipelines and we support the recognition of hydrogen and renewable gases early to facilitate the industry's development, we are concerned about any proposal to 'mandate' transition. It is important that jurisdictions consult and work actively with facility owners prior to authorising or enabling NGEs in existing pipelines. Prior to jurisdictions moving to accept hydrogen blends, facility operators must have determined whether their pipelines can accommodate NGEs or other gases and that all safety and integrity considerations have been satisfied. In effect, facility operators should retain discretion as to when a pipeline facility transitions to accommodate NGEs.

² AEMC, *Review into extending the regulatory frameworks to hydrogen and renewable gases*, Consultation paper, 21 October 2021, p14

Furthermore, a positive obligation should not be placed on facility owners to comply with various aspects of the gas framework (e.g. facilitating connection enquiries) until pipeline operators have determined that the transition is feasible from a technical or integrity perspective and can be managed within the facility operators' contractual commitments with customers. Existing facilities have been built to a certain standard for the product specifications and safety requirements at that time. Automatically altering that standard requires much thought, transition and consideration of cost recovery mechanisms prior to being introduced.

There are many issues that need to be resolved before pipelines can accept NGEs. Some of the unknowns include:

- technical integrity and safety aspects;
- impacts on upstream gas pipeline operations including capacity considerations with hydrogen density and heating values differing from natural gas;
- suitable blending percentages, flow dynamics of NGEs due to different density and potential for concentration of blends;
- scheduling and curtailment arrangements;
- Existing customers' ability to accommodate or technological advances deployed to enable existing customers to accept NGEs within reasonable heating value range (eg. some commercial and industrial (C&I) offtakers may have narrow heating value ranges) or with augmentation to equipment.

2.6 Inclusion in Facilitated Markets

Overall, assuming NGEs will be traded on an energy equivalent basis (e.g. joules), we envisage NGEs will be incorporated into operations and markets as natural gas is today. Some augmentation of equipment or metering will be required at the transmission level, however we consider this will be practical if there is a market for NGEs. Consideration needs to be given to the practicalities of NGEs trading in facilitated markets while the industry is developing so as to not displace or interrupt wholesale markets that are solving for petajoules.

Part C to our submission contains views on a number of issues relating to the proposed changes to the DWGM.

2.7 Flexibility in location of Hydrogen Production & Blending Facilities

APA is supportive of a national gas framework that is agnostic to where and how the industry develops. We suggest that a holistic and end to end perspective is adopted when reviewing the national gas framework, rules and procedures to ensure that the

production, injection, storage and transportation of NGEs is not impeded or disincentivised when transmission pipelines are determined as suitable for hydrogen.

For instance, whilst it might make sense to facilitate hydrogen production trials and blending downstream in distribution networks as the technical parameters of accommodating hydrogen in existing transmission pipelines are still being confirmed, legislation and rules could inadvertently incentivise production and injection within certain areas of the network. For this reason, it is important to consider production and injections upstream of distribution networks, within transmission infrastructure to consider the overall functioning of the wholesale markets including blending tolerances throughout the system, flow dynamics and curtailment, to name a few.

An example of where this might arise is if more liberal blending tolerances and gas specifications are set in downstream networks. In this instance, blending and injection of hydrogen at scale upstream where it could make more economic sense due to close proximity to abundant renewable energy or electricity infrastructure, could be dis-incentivised.

Cost effectiveness could also be a consideration. It may also be more cost effective for NGEs to be located and blended in the transmission system such as in the Victorian Declared Transmission System (DTS) versus the distribution system where a large number of meters may need to be augmented and measured to settle the Declared Wholesale Gas Market (DWGM) with injections directly into the distribution network. It may be more cost effective for consumers to have hydrogen in commercial volumes injected at the transmission level.

2.8 Proposed changes to the DWGM

We broadly support the proposed rule change to enable the participation of distribution connected facilities in the DWGM. This will help facilitate the trial of hydrogen, biomethane and other renewable gases.

When considering amendments to the DWGM operation and settlement arrangements, competitive neutrality principles should be adopted to ensure that facilities are treated the same regardless of where they are located, whether it be on the distribution or transmission network. This will ensure that investment occurs in the most efficient location, rather than due to any differences in regulatory arrangements.

2.9 Blending & Production Facilities

Questions are posed in the consultation papers as to who will build, own and operate the blending facilities. APA believes it is too early to determine whether this would be a NGE production facility, a third party entity or the pipeline operator. The national gas framework should retain this flexibility. Currently, receipting into a pipeline within the national gas standard (AS 4564) is the responsibility of the shipper and managed through contractual agreements. Should this be out of the gas composition

tolerances, this is identified by gas quality monitoring equipment at transmission injection points and is currently managed by the transmission pipeline owner and operator for its impact on downstream customers. This is normal operations for a pipeline system and APA does not envisage different circumstances to manage NGEs. Another organisation managing gas composition in interconnected contract carriage markets and systems over and above the shipper and pipeline operator could create confusion and unwarranted complexity, including potential unsafe gas mixtures/compositions.

Where there are multiple operators of facilities, operating agreements will need to be established if they don't exist already on managing the blending limits as the molecules move through the system. It is APA's view that this can be managed commercially.

3 PART B – Responses to AEMC questions

Number	Question	Response
1. Scope of the Review		
1.1	Do you agree with the Commission's preliminary position on the scope of this review?	The scope of the review is an appropriate start to a process that is in its beginnings.
1.2	Are there additional areas in the NGR or NERR that should be excluded or included in the current review? If so, why?	The inclusion of future transmission pipeline injections of NGEs should be considered to ensure a holistic review of the market mechanisms. This will assist in fleshing out any issues or constraints in the functioning and interaction of facilitated markets for NGEs as it will likely develop overtime. Consideration should be given, even at this early stage, to the operationalisation of the national gas framework at a jurisdictional level and how harmonisation can be improved. Leaving this to the responsibility of individual jurisdictions without national oversight or consistency will mean the difference between a framework imposing costs and complexities on the existing gas industry or one that standardises and facilitates an ease of transition to NGEs.
2. Assessment Framework		
2.1	Do you agree with the Commission's proposed assessment framework for this review?	No comment.
2.2	Are there any criteria the Commission should or should not consider as part of its assessment framework?	Competitive neutrality between the transmission and distribution network is one criterion that could be considered as part of the assessment framework.
3. Supplier Access to Pipelines		
3.1	Do you think that any additional guidance is required in the NGR to deal with connections by suppliers of natural gas equivalents or constituent gases, or are the new draft interconnection rules sufficient? If you think additional guidance is required, please set out what guidance you think is required.	We consider that the new interconnection rules are sufficient to ensure that sufficient information is available to any new supplier. Bilateral discussions should help resolve any issues that arise.
3.2	Do you think service providers should be required to publish information on where connections by suppliers	In our view, this information should not be published and should be retained within a negotiated framework between the connection proponent and the pipeline facility operator. Pipeline capacity and



Number	Question	Response
	of natural gas equivalents or constituent gases would be technically feasible, or should this just be left to negotiations?	flows is dynamic and depends on many different factors that change regularly depending on injections, withdrawals, seasons, flow direction, maintenance and operating parameters. The size and location of injection will need to be modelled during the connection enquiry process to determine suitable locations within the system, ability to restrict or control flows to customers who cannot accommodate NGE and impacts on other customers.
3.3	Do you think that any specific rules are required in the NGR to deal with the risk that service providers may favour their own natural gas equivalents or constituent gas facilities by curtailing other facilities ahead of their own, or do you think this should be dealt with through ring-fencing arrangements?	In our view, specific rules to deal with curtailment of service providers (or their associates) who are also suppliers of NGEs are not required. Ring fencing arrangements exist already in the national gas framework and are utilised by diversified energy infrastructure companies. Energy infrastructure companies wishing to pursue opportunities in hydrogen or other renewable gases should not be precluded from doing so. As explained in Section 2.3 of our submission, the renewable gases industry is very much in its infancy and it is not yet clear how it will evolve. Flexibility in ring fencing arrangements may be required to support the development and commerciality of renewable gas projects Curtailment mechanisms within facilitated markets may be required as the industry develops at a commercial scale. For example, curtailment may be required where the minimum standard cannot be met or to maintain blending limits downstream within customer tolerance ranges and give producers certainty to supply depending on location of injection. This is independent of ownership of these facilities for ring fencing purposes.
4. Ring Fencing		
4.1	Do you think the ring-fencing exemptions in the NGR should be amended to accommodate trials by service providers? Why?	Yes, the ring fencing exemptions should accommodate trials by service providers. As explained in Section 2.3 of our submission, the renewable gases industry is very much in its infancy and it is not yet clear how it will evolve. Flexibility in ring fencing arrangements may be required to support the development and commerciality of renewable gas projects.
4.2	If so, do you think there should be any limit on the volume service providers should be able to produce, purchase or sell (e.g. up to the unaccounted for gas level)?	At this stage of market development, we do not consider there should be any limit on the volume service providers should be able to produce, purchase or sell. Imposing limits at this stage of market development may challenge project economics and impact market development.
4.3	Do you think any other changes need to be made to the ring-fencing provisions in the NGL or NGR to	No comment



Number	Question	Response
	accommodate natural gas equivalents or constituent gases?	
5. Rules for Scheme Pipelines		
5.1	Do you think Part 9 of the NGR should be amended to provide the regulator with additional guidance on how to assess service provider proposals to transition to natural gas equivalents in those cases where a jurisdiction does not mandate the transition? If so, please explain what changes you think need to be made and why.	Yes, in our view the expenditure criteria within the NGR need to be amended to allow the transition to NGEs, particularly where a jurisdiction has not mandated the transition. For example, fuel gas is not included in the operating cost of regulated pipelines within the Victorian Declared Transmission System (DTS) and is provided by shippers in kind. Compressors form part of the regulated asset base and as such facility owners must demonstrate that both operating and capital costs are the most efficient outcome for customers. There is currently no category for consideration of environmental benefits such as lower-carbon alternatives. Hydrogen as a fuel is currently more expensive than natural gas. Since there is no Government policy that mandates the use of lower-carbon alternatives, higher operating costs associated with hydrogen as a fuel may be borne on the facility owners and not included for cost recovery on regulated assets.
5.2	Do you think Part 9 of the NGR should be amended to clarify how government grants or funding are to be treated for regulatory purposes?	Yes, we can see benefits in clarifying how government grants or funding are to be treated.
5.3	Do you think any of the other rules that will apply to scheme pipelines under the new regulatory framework need to be amended to accommodate pipelines hauling natural gas equivalents or constituent gases?	We agree that rules applying to scheme pipelines under the new framework need to be amended to accommodate pipelines hauling NGEs.
6. Rules for Non-Scheme Pipelines		
6.1	Do you think the arbitration principles applying to non-scheme pipelines should be amended to: a. require the arbitrator to take into account any regulatory obligation that a pipeline may be subject to? b. provide the arbitrator with greater guidance on how to assess proposals by a service provider to transition	APA broadly supports having principles to assist in the arbitration mechanism for non-scheme pipelines where disputes could arise as to the ability of the pipeline to accommodate NGEs, suitable location for injections, gas quality or other issues.



Number	Question	Response
	to transporting a natural gas equivalent where the transition is not mandated? c. clarify how government grants are to be treated?	
6.2	Do you think any of the other rules that will apply to non-scheme pipelines under the new regulatory framework need to be amended to accommodate pipelines hauling natural gas equivalents or constituent gases?	No comment.
7. Pipeline Gas Type Information		
7.1	Do you think service providers should be required to publish information on: a. The type of gas they are licensed to transport in their user access guides and, in the case of scheme pipelines, the access arrangement and access arrangement information? Why? b. Any firm plans to conduct either a trial or to transition the pipeline (or part of the pipeline) to a natural gas equivalent or other gas product? Why?	Due to the interconnected nature of transmission infrastructure, it will be important for interconnected pipelines to have knowledge of when and to what blending specifications trials, pipeline transitions or new NGE producer connections occur, should this impact on an interconnected pipelines' operations. As outlined in section 2.4 of our submission, harmonisation of blending tolerances and timing is important to maintain liquidity throughout the east coast grid, as differences will restrict or redirect gas flows and ultimately impact on markets.
7.2	Do you think this information should also be reported on the AEMC's Pipeline Register?	A central repository on the Gas Bulletin Board for ease of reporting and updates.
8. Extension of the Transparency Mechanisms to Natural Gas Equivalents		
8.1	Except for blending facilities are there any other facilities or activities involved in the supply or use of natural gas equivalents that are not already captured by: a. the BB facilities listed in rule 141 of Part 18 of the NGR?	These categories are currently viewed as sufficient to capture NGEs, however they may require review overtime depending on how the industry evolves to ensure they are fit for purpose.



Number	Question	Response
	b. the DWGM registration categories in rule 135A of Part 15A of the NGR?	
8.2	If the information to be reported by facilities involved in the production, transportation, storage, compression and or use of natural gas equivalents is to be based on the information reported by their natural gas counterparts, are any amendments required to reflect differences in the physical characteristics of these facilities compared to natural gas facilities for: a. the Bulletin Board reporting obligations in Part 18 of the NGR? b. the GSOO content in rule 135KB of Part 15D of the NGR? c. rules 323-324 in Part 19 of the NGR? d. the compression and storage reporting obligations in Part 18A of the NGR? e. the price information to be published by the AER in proposed rule 140B in Part 17 of the NGR?	As outlined in our response to the Energy Ministers' Consultation Paper, we are concerned about the proposal to extend the national gas framework for both NGEs and other gas products to 'related facilities and activities'. This term covers competitive facilities and activities from exploration and production through to retail supply. In September 2021 Energy Ministers published a draft legislative package to give effect to the Gas Pipeline Decision Regulatory Impact Statement (Gas Pipeline DRIS) published in May 2021. The draft legislative package contained provisions extending the publication of individual prices to competitive markets without a transparent assessment of whether this is in the long-term interests of customers. The Hydrogen and renewable gases industry is in its infancy. While some level of transparency is important to support the development of the market, the expansion of the NGL into competitive markets could have unintended consequences and the potential costs of doing so should be carefully evaluated. Reporting obligations should only be imposed if there are clear benefits from doing so and reporting obligations don't pose a significant burden on industry.
8.3	Should blending facilities be treated as production facilities for the purposes of the Bulletin Board, GSOO and VGPR, or should specific reporting obligations be developed for these facilities? Why? If you think specific reporting obligations are required, what should these be?	If blending facilities are similar to existing pipeline operations and activities whereby they take natural gas flows and blend these with hydrogen flows from a producer or manage other compositions to get it within the gas specification, whether this be directly in the pipeline flow or adjacent to the main pipeline flow, this should not trigger specific reporting obligations. Nor should it be treated as a production facility and therefore subject to other unrelated obligations.
8.4	Are there any other gaps in the NGR that have not been identified that would need to be addressed if the five transparency mechanisms were to be extended to natural gas equivalents? Why? If you think there are	No comment.



Number	Question	Response
	other issues, what are they and what amendments are needed?	
9. Extension of the Transparency Mechanisms to Constituent Gases		
9.1	Do you think the following transparency mechanisms should be extended to the facilities and activities involved in the supply of constituent gases as part of the initial rules package or should the application of one or more be deferred until a later process? Why? a. the Bulletin Board b. the GSOO c. the VGPR d. the compression and storage terms and prices e. the AER's gas reporting functions.	Refer to APA's response to questions in section 8 above.
9.2	If you think the transparency mechanisms should be extended as part of the initial rules package: a. What facilities do you think need to be captured? b. Do you think the facilities and activities involved in the supply of constituent gases should be subject to equivalent reporting obligations as their natural gas counterparts, or are some modifications required to reflect differences in the physical characteristics of these facilities?	Refer to APA's response to questions in section 8 above.
9.3	Are there any other gaps in the NGR that have not been identified that would need to be addressed if the transparency mechanisms were to be extended to constituent gases? Why? If you think there are other	No comment.



Number	Question	Response
	issues, what are they and what amendments are needed?	
10. Trading Natural Gas Equivalents in the Facilitated Markets		
10.1	Do you think natural gas equivalents should be traded through the facilitated markets, or outside of the facilitated markets?	Overall, assuming NGEs will be traded on an energy equivalent basis (e.g. joules), we envisage NGEs will be incorporated into operations and markets as natural gas is today. Some augmentation of equipment or metering will be required at the transmission level, however we consider this will be practical if there is a market for NGEs. Consideration needs to be given to the practicalities of NGEs trading in facilitated markets while the industry is developing so as to not displace or interrupt wholesale markets that are solving for petajoules. Part C to our submission contains views on a number of issues relating to the proposed changes to the DWGM.
10.2	What do you consider are the implications of these two options, in terms of required regulatory changes, costs of implementation and potential market inefficiencies?	See Part C of this submission for views on this issue in the context of the DWGM rule change.
11. Facilitated Market Registration Categories		
11.1	If natural gas equivalents are to be integrated into the facilitated markets, are new registration categories required to accommodate facilities and participants involved in the creation of these products, including through the injection of blends into the distribution system?	Yes, in our view distribution connected production facilities should be treated consistently with production facilities connected at the transmission level. If blending facilities are a function of existing pipeline operations and activities whereby they take natural gas flows and blend these with hydrogen flows from a producer or manage other compositions to get it within the gas specification, this should not trigger specific reporting obligations or be subjected to separate registration category.
11.2	If flows associated with distribution-connected blending facilities are not scheduled in facilitated markets, are new registration categories required for blending facilities and associated participants or can they be exempted from registration?	APA supports information via registration on connected NGE facilities, production quantities and gas quality to assist with system operations and maintaining gas quality limits for those facilities supplying via facilitated markets.
12. Unaccounted for Gas in the Facilitated Markets		



Number	Question	Response
12.1	Do you think initial trials involving the injection of natural gas equivalents into the distribution system should be accommodated by amending jurisdictional arrangements for UAFG?	No comment.
12.2	If so, how will this impact the operation of the matched allocation mechanism (as used by the distributor in the Sydney STTM hub)?	No comment.
12.3	What changes would be required to UAFG arrangements in the DWGM?	No comment.
13. Settlement Issues in the Facilitated Markets		
13.1	If distribution connected blending facilities are not integrated into the facilitated markets, what settlement issues may arise?	No comment.
13.2	If distribution injections and corresponding end use consumption need to be excluded from settlement, how should excluded consumption be treated? What factors might affect this?	No comment.
13.3	If distribution connected blending facilities are integrated into the facilitated markets, are settlement issues in the STTM likely to be relatively straightforward to resolve? Why?	No comment.
13.4	How should facilities exempted from registration, or that fall below a materiality threshold, be treated under settlement arrangements in the facilitated markets?	No comment.
14. Metering and Heating Values in Facilitated Markets		
14.1	Does the NGR restrict distributors' ability to calculate heating values in different parts of the distribution	The billing of most gas customers across the distribution networks operated and managed by APA occurs on the basis of energy consumed. Pressure and temperature components of the algorithm are fixed, with volume of gas and heating value the variable components. APA considers zonal measurement of

Number	Question	Response
	system to accommodate the different uses of natural gas equivalent gases in the facilitated markets?	heating values to be a more appropriate billing methodology for gas customers than the current state-wide heating value approach. Accurate measurement of the heating value via flow weighted volume analysis will result in greater accuracy of energy consumed at the customer site level if it can be accurately measured at a zonal level. Move to blended heating value zones or further disaggregated mesh blending zones would impact on metering and billing systems. APA proposes consistency and harmonisation between heating value methodologies and metering between markets, ensuring cost efficiency of systems and process for energy infrastructure operating in multiple markets.
14.2	Are amendments required to the NGR to facilitate the determination of more granular heating values and any other matters relating to the metering provisions for the DWGM?	See response to 14.1 above.
15. Gas Specification in the Facilitated Markets		
15.1	In relation to the STTM, do you think Part 20 of the rules should be amended to clarify that AS 4564 – 2005 can be augmented or replaced to accommodate blending in certain parts of STTM distribution systems? Are any other changes required, including to accommodate impacts on connected transmission pipelines?	APA supports consistency in gas specification across the East coast Grid between markets and between the transmission and distribution systems. Any augmentation or customisation of blending limits between distribution and transmission systems or within systems will create additional complexity to already complex markets, impact liquidity and free movement of molecules.
15.2	In relation to the DWGM, do you think Part 19 of the rules should be amended to give AEMO (or another party) the ability to directly determine the gas specification on distribution systems?	See response to 15.1 above.
16. Blending Constraints in the Facilitated Markets		
16.1	Who should be responsible for the creation of natural gas equivalent blends and ensuring that these remain consistent with a revised gas specification?	APA believes it is too early to determine whether this would be a NGE production facility, a third party entity or the pipeline operator. The national gas framework should retain this flexibility. Currently receipting into a pipeline within the national gas specification (AS-4564) is the responsibility of the shipper



Number	Question	Response
		and managed through contractual agreements with facility operators. APA's view is that this approach will apply equally to NGEs as it does to natural gas and be managed competently by these parties to minimise impacts on other third parties. In addition, consideration may need to be given to scheduling and curtailment mechanisms and how these specifically relate to scheduling of injections to create blended products and maintain blends within the tolerance range. For instance, it may now be that in facilitated markets, the market is not only solving for quantity of supply and price, but also ensuring that a suitable blending tolerance range is scheduled and maintained.
16.2	In the DWGM, should AEMO be given operational control over the distribution system to manage blending constraints? If so, what changes to the rules would be required?	Refer to comments in Part C of APA's submission.
17. Other Identified Issues in the Facilitated Gas Markets		
17.1	Do the identified issues in the NGR and changes required cover all necessary changes to facilitate the trade of natural gas equivalents in the DWGM and STTM?	As stated in response to question 16.1, consideration may need to be given to scheduling and curtailment mechanisms that now specifically relate to blended products and maintaining blends within the tolerance ranges. Similar questions such as how do the NGEs flow through a system and do they congregate in certain areas leading to increased blends in certain pockets and potential for disproportionate curtailment by certain parties, need to be considered.
17.2	Are there any other issues the Commission should be aware of?	No comment.
17.3	Are all of these changes required now for natural gas equivalents? Could some of these changes be made at a later date, or when other gas products are taken into consideration?	No comment.
17.4	Are there any transitional issues?	No comment.
18. Initial Identified Issues in the Regulated Retail Markets		



Number	Question	Response
18.1	Are changes to the retail market registration provisions required to accommodate natural gas equivalents?	No comment.
18.2	Are there any other changes required to the retail market provisions in the NGR to accommodate natural gas equivalents?	No comment.
19. Other Potential Issues in the Regulated Retail Markets		
19.1	Are there any issues the AEMC should consider in relation to the recovery of the cost of the renewable component of the natural gas equivalent from retail customers, for a natural gas equivalent?	No comment.
19.2	Are there any issues the AEMC should consider in relation to retail competition and consumer choice as a consequence of the introduction of natural gas equivalents?	No comment.
19.3	How are these issues impacted by jurisdictional policies in relation to mandated renewable gas targets or mandated green value in a gas stream? Are any changes to the NGR and NERR needed, either now or in the near future, to address any concerns about competition, consumer choice and cost pass through of renewables in the retail market.	No comment.
20. Consumer Protection Framework		
20.1	Do you consider that changes are required to the consumer protection framework to reflect the physical properties of natural gas equivalents compared to natural gas? Specifically: a. Should retailers be required to notify existing customers prior to the transition from the supply of natural gas to a natural gas equivalent that the	No comment.



Number	Question	Response
	customer is now being supplied with the natural gas equivalent and the changes the customer may see in relation to the quantity of gas metered at their premises following the transition? b. Should the model terms and conditions for standard retail contracts and the minimum requirements for market retail contracts be amended to make clear if the supply of gas under that contract is a supply of natural gas or a natural gas equivalent? c. Should retailers who receive requests for historical billing data from a customer be required to state in the billing information provided if there was a transition from natural gas to a natural gas equivalent during the billing history period for which information is requested, and the date at which the transition occurred? d. If the natural gas equivalent to be supplied has a different heating value from natural gas, should there be a requirement for retailers to issue a bill based on an actual meter read for customers with accumulation (non-interval) meters before supply is transitioned to a natural gas equivalent?	
20.2	Are there any other gaps in the consumer protection framework that arise because of the difference in the physical properties of natural gas and natural gas equivalents?	No comment.
20.3	Do you consider that customers should be informed if price variations occur because of the transition to natural gas equivalents?	No comment.
20.4	How should the risks of 'off spec' natural gas equivalents be allocated under the NERL and NERR?	No comment.



Number	Question	Response
	Is the existing allocation of risk for the quality of natural gas appropriate if distributors have responsibility for creating the natural gas equivalent (for example, through the operation of blending facilities)? What is the appropriate mechanism for managing loss suffered by customers as a result of 'off spec' natural gas equivalents?	
21. Regulatory Sandbox Arrangements		
21.1	Is it practicable for a retail customer to opt out of a change of product trial? If not: a. should the definition of explicit informed consent be required to provide information that the customer is unable to opt out of the trial for the period of the trial? b. should the AER have power to extend a change of fuel trial if retail customers cannot practicably opt out of the trial?	No comment.
21.2	Are any changes to the consultation requirements regarding proposed trial waivers for change of product trials needed? For example, on the AER public consultation requirements for change of product trials.	No comment.
21.3	Should amendments be made to specify certain pre-conditions to the granting of a trial waiver for a change of product trial involving the sale and supply of an 'other gas product'? If so: a. should the applicant be required to provide this approval as part of its application for a trial waiver? b. should the rule change proponent for a trial rule be required to provide this approval as part of its request for the rule?	No comment.



Number	Question	Response
21.4	Are there any other gaps that would arise in the proposed regulatory sandbox framework if it is extended to natural gas equivalents, other gas products and constituent gases?	No comment.

4 PART C – Responses to AEMC DWGM Rule Change questions

Number	Question	Response
Assessment framework		
1	Is the proposed assessment framework appropriate for considering the proponents rule change request?	Yes, we support the proposed assessment framework. Innovation and the trial of new technologies will be key to supporting the decarbonisation of the gas network.
2	Are there any other relevant considerations that should be included in the assessment framework?	Competitive neutrality between the transmission and distribution network is one criteria that could be considered as part of the assessment framework.
Facility registration		
3	Should the existing definitions be expanded to include distribution connected facilities?	Yes, we support expanding existing definitions to include distribution connected facilities.
4	Alternatively, should a new participant category be introduced to account for distribution connected facilities?	No comment.
Bids and gas scheduling		
5	Should all bidding rules be updated to allow distribution connected facilities to bid into the market? If not, why?	Yes, we support bidding rules being updated to allow distribution connected facilities to bid into the market. This should ensure that expanding market arrangements to these facilities is as seamless as possible.
6	Should all scheduling rules be updated to allow injections into the declared distribution system to be scheduled? If not, why?	Yes, for similar reasons we support scheduling rules being updated to allow injections into the declared distribution system to be scheduled.
Demand forecasting		
7	Should the demand forecast definition be amended to include all gas consumed from distribution and transmission systems within a declared system?	Yes, the demand forecast definition should include all gas consumed from distribution and transmission systems.



Number	Question	Response
8	If not, is there an alternative solution that would maintain the existing NGR gas demand forecast definition?	No comment.
Determination of market price		
9	Should distribution connected facilities' constraints be treated consistently with transmission injection facilities and excluded from the pricing schedule? If not, why?	Yes, in our view distribution connected facilities should be treated consistently with transmission injection facilities.
Operating schedules		
10	Should the existing design be maintained with distribution networks managing the constraint issues outside of the DWGM?	We do not have a firm view on this issue. The impact on NGEs in the broader Victorian gas system needs to be considered if constraint issues are managed outside of the DWGM.
11	Should the operating schedules be expanded to allow distribution constraints within the operating schedule? a. In this case, what compliance liability considerations need to be made for distribution connected facilities?	As far as possible, there should be competitive neutrality between transmission and distribution connected facilities.
12	Should a new constraint type be added for distribution connected facilities that is managed by the gas scheduling process?	We do not have a firm view on this issue. The impact on NGEs in the broader Victorian gas system needs to be considered if constraint issues are managed outside of the DWGM.
Capacity certificates		
13	Should distribution connected facilities be allocated capacity certificates for tie-breaking rights? Why?	As far as possible, there should be competitive neutrality between transmission and distribution connected facilities. For this reason, we consider distribution connected facilities be allocated capacity certificates for tie-breaking rights.
14	What would be the implications of modelling the capacity of potentially a high number of distribution connected injection points?	We don't see any reason why it should not be possible to model a potentially high number of new distribution connected injection points.



Number	Question	Response
Title, custody and risk		
15	Do the rules need to be changed to manage the title of injections within the distribution system?	If the rules are not clear as to whether blending is recognised at the distribution level, then we support amendments to do so.
16	Do the rules need to contemplate the co-mingling of gas within a distribution system? If not, why?	No comment.
Participant compensation fund		
17	Should the participant compensation fund cost recovery mechanism be expanded to include distribution connected facilities? If not, why?	We agree that cost recovery for the participant compensation fund should be expanded to include distribution connected facilities.
Allocation and determination of fees payable		
18	Should the definition of what gas can be allocated be expanded to include gas supplied by distribution connected facilities?	Following the assessment framework, in our view the least complex solution should be chosen. Expanding the definition to include distribution connected facilities appears the simplest methodology.
19	Are there other alternative solutions that would be more effective?	No comment.
Default notices and market suspension		
20	Should the rules be expanded to include distribution connected facilities for default notices? If not, why?	To ensure a consistent playing field, we agree that the rules should be expanded to include distribution connected facilities.
21	Should the rules be expanded to include distribution connected facilities for market suspension? If not, why?	Yes
Application of the connections framework		
22	Should the connections' framework be expanded to cover distribution injections? If not, why?	As far as possible, there should be competitive neutrality between transmission and distribution connected facilities.
23	If so, what considerations should be accounted for in the transitional wording?	No comment.



Number	Question	Response
24	Who should the party responsible for assessing and approving connections into the distribution system?	The process for assessing and approving connections into the distribution system should be as consistent as possible with the process for transmission connections.
25	Is the separation of connection agreements before 15 March 1999 with those made after still relevant within the NGR?	No comment.
Obligations of the declared system service providers		
26	Should the rules be amended to include obligations for DDS service providers? a. Where should these obligations sit in the rules?	Yes, the obligations for DDS service providers should be as consistent as possible with the rules for DTS service providers. We have no preference for where these obligations should sit in the rules.
27	If so, are there any additional considerations that are needed for the declared distribution systems?	No comment.
Obligations of AEMO		
28	Are the declared distribution system service providers the most appropriate party to facilitate connections into the declared distribution system? Why?	As far as practical, rules for the DDS should be consistent with those for the DTS. In this instance, it may be more appropriate for the DDS service providers to facilitate connections into the distribution system. This is because AEMO does not have a responsibility for managing the DDS.
29	Should AEMO have an active role in assessing and approving connections for distribution connected facilities? Why?	No, we do not think AEMO should have an active role in assessing and approving connections for DDS connected facilities, but should have visibility through the registration and scheduling process.
Obligations of connected parties		
30	Should the rules be expanded to enforce compliance from distribution connected facilities regarding their connection agreements?	Yes, to ensure there is a level playing field, the rules for connection agreement compliance should be expanded to distribution connected facilities.
31	Are there any alternative solutions that would be more effective?	No comment.

Number	Question	Response
Gas quality		
32	Who should be responsible for the management of the gas specification within the distribution system?	We do not have a firm view on who should be responsible for management of the gas specification within the distribution system.
33	What is the most appropriate instrument for the gas quality monitoring requirements: a. The rules? b. AEMO guidelines or procedures? c. Another instrument?	Guidelines or procedures are the preferred instrument for setting gas monitoring requirements.
34	Should the declared distribution service providers and Energy Safe Victoria be the parties responsible for continued monitoring of the network and compliance respectively? If not, Why?	Yes, this approach seems reasonable.
35	Should the rules consider alternative gasses, such as hydrogen, within the gas quality monitoring rules?	No comment.
Metering		
36	Should the rules be amended to cover metering accuracy requirements for distribution connected facilities?	Yes, to ensure a consistent playing field, the rules should be amended to ensure that distribution connected facilities are subject to the same rules as transmission connected facilities.
37	Should the rules be amended to allow distribution connected facilities to provide their own compliant metering?	No comment.
38	Are there any other distribution connected facilities metering related issues that should be included in the rules?	No comment.



Number	Question	Response
Threats and interventions		
39	Is it necessary to expand AEMO's powers to be consistent with DTS connected facilities given the broad powers currently in the rules?	Yes, to ensure a consistent playing field, the rules should be amended to ensure that distribution connected facilities are subject to the same rules as transmission connected facilities.
40	Should distribution connected facilities be able to claim compensation for losses incurred for injections required during an intervention?	No comment.
Alternative solution 1 – supply from distribution connected facilities managed contractually		
41	Is there merit in further exploring this proposed solution?	Establishing a 'secondary' market for renewable gases in Victoria is likely to increase complexity and reduce transparency in an emerging market. For this reason we do not consider that this option should be explored further.
42	Are there any aspects of this solution that should be incorporated into the proposed solution?	No comment.
Alternative solution 2 – supply from distribution connected facilities as negative demand		
43	Is there merit in further exploring this proposed solution?	We agree with the proponent that this solution has the potential to add complexity to the DWGM and therefore consider that this option should not be explored further.
44	Are there any aspects of this solution that should be incorporated into the proposed solution?	No comment.
Materiality threshold		
45	Should this rule change consider including a materiality threshold in the rules?	We agree with the rule change proponent that including a materiality threshold in the rules could create market complexity. Any materiality threshold is also likely to influence investor behaviour when deciding on the size or location of facilities.
46	Should a reduced set of bidding requirements be applied to distribution connected facilities that do not meet the current bid size of 1 GJ?	To ensure a consistent playing field, the rules should be amended to ensure that distribution connected facilities are subject to the same rules as transmission connected facilities.



Number	Question	Response
47	Do the rules provide a barrier to bidding quantities of gas smaller than 1 GJ?	No comment.
48	What are the impacts and costs associated with updating the bidding system to accommodate decimal GJ bids?	No comment.
Scheduling intervals		
49	Should this rule change consider changing the current scheduling intervals or is this an issue that should be addressed in a separate rule change process?	We support this being considered as part of a separate rule change process.
Expected costs, benefits and impacts		
50	What are the expected costs associated with the proposed changes for: a. existing market participants? b. new market participants that would fit into the distribution connected facility category? c. AEMO?	We have not attempted to estimate the expected costs associated with the proposed changes although we expect that there may be costs involved. The AEMC should consider the cost effectiveness of the proposed changes as part of its review, including how any increases in costs are borne by market participants and customers.
51	How would these costs be recovered under the existing regulatory framework?	For the Victorian Transmission System, pass through arrangements may be available if the impact on costs is material and a pass-through event has occurred.
52	What are the impacts of the proposed solution and the "do nothing" scenario?	The 'do nothing' scenario could inhibit the growth of the renewable gas market.
53	Is the proponent's assertion that the long term costs of inaction are greater than the costs associated with the proposed solution correct?	No comment.



Number	Question	Response
Impact on contracts market		
54	What considerations need to be given to the contracts market when integrating distribution connected facilities into the DWGM?	No comment.

5 PART D – Responses to AEMO questions

Number	Question	Response
Section 2 - Scope of AEMO's review		
1	Are there any other relevant matters that should be considered in AEMO's review of the Procedures that fall within the scope of the terms of reference?	The inclusion of injection from the transmission system should be considered along with injections in distribution to assess the full impact on the functioning of facilitated markets. In addition, consideration may need to be given to scheduling and curtailment mechanisms and how these specifically relate to scheduling of injections to create blended products and maintain blends within the tolerance range. For instance, it may now be that in facilitated markets, the market is not only solving for quantity of supply and price, but also ensuring that a suitable blending tolerance range is scheduled and maintained.
Section 3 – Declared wholesale Gas Market (DWGM) Procedures		
3.8 – DWGM Distribution UAFG Procedures		
2.	Do you think the approach to determining and allocating distribution UAFG should be changed in the Procedures? If so, what changes to the processes do you think should be made?	Victorian UAFG is currently provided by retailers in accordance with UAFG benchmarks set by the ESCV every 5 years for the distributor Access Arrangements. Consideration should be given to change the provisions allowing the distributor to arrange its own UAFG, either by itself or via a UAFG provider such as occurs in Queensland. This would provide flexibility should a distributor want to provide for some or all UAFG via NGE injection facilities within the distribution network.
3.9 – DWGM General		
3.	Considering this section, the scope of the DDCF rule change and, Attachment A, are there any other matters you think AEMO should consider to facilitate NGEs in the DWGM? If so, please identify the relevant Procedure and explain why a change is required to accommodate NGEs.	Many elements of this developing industry are yet to be determined such as: - the most cost effective injection locations whether in distribution systems or further upstream in transmission - whether sections of the transmission system (particularly for DTS) could be compartmentalised for NGE injections due to the predominate flow dynamics in these sections - the most efficient metering arrangements. All of these aspects need to be worked through and the national gas framework, rules and procedures need to be flexible enough to keep these options open rather than inadvertently direct development a particular way.



Number	Question	Response
Section 4 – Short Term Trading Market (STTM) Procedures		
4.3 – STTM hub definition change framework		
4.	Do you think a more streamlined consultation process should be considered for amendments to STTM hub definitions? If yes, what steps do you think should be involved in such a consultation process?	No comment.
4.3 – STTM market operations		
5.	Do you agree with AEMO's assessment that the STTM market operations do not need to change to facilitate NGEs? If not, what changes do you believe may be required?	If NGEs are measured and transacted on an energy unit basis such as joules, APA doesn't envisage significant changes would be required to STTM operations to accommodate NGEs.
4.3 – STTM administered market states		
6.	Do you consider that threshold for significant constraints for a trading participant to trigger the significant constraints process is appropriate? If not, what would an appropriate threshold be?	To ensure a consistent playing field, we support the same rules being applied to distribution connected facilities as transmission connected facilities.
4.3 – Other areas of the STTM Procedures		
7.	Considering this section and Attachment B, are there any other areas of the Procedures that you consider need to be changed to facilitate participation of NGEs in the STTM? If so, please identify the procedure and explain why changes are required to accommodate NGEs.	Consideration may need to be given to scheduling and curtailment mechanisms and how these specifically relate to scheduling of injections to create blended products and maintain blends within the tolerance range. For instance, it may now be that in facilitated markets, the market is not only solving for quantity of supply and price, but also ensuring that a suitable blending tolerance range is scheduled and maintained.

Number	Question	Response
Section 5 – Retail Market Procedures		
5.3 – Definitions and concepts in the retail market procedures		
8.	Do you agree with proposed potential changes to the terms in table 3? If not, please provide details on which RMP jurisdiction and details about the reason why you don't agree with the proposed changes?	APA agrees that many of the required changes to the RMP are largely definitional – such as injections only coming from transmission pipelines – and the changes will need to cascade down to the specific clauses.
5.3 – Definitions and concepts in the retail market procedures		
9.	Do you think there could be any unintended consequences from amending these terms? If so, please provide details on which RMP jurisdiction, clause reference # and details about the reason why you believe unintended consequences could occur).	The changes would need to include the SA gate point coding. The SAWA Gas Retail Market Systems Interface Control Document will need to be amended to incorporate downstream supplies.
5.3 – Definitions and concepts in the retail market procedures		
10.	Noting the review scope described in sections 2.1 and 5.2, are there any other terms in the RMP AEMO should consider amending to facilitate the participation of NGEs or NGE facilities?	The Queensland RMPs currently define a UAFG provider as ‘... the retailer who provides UAFG in a distribution area for a UAFG year’. The RMPs will need to be amended to accommodate the likelihood distributors may have a preference to use NGE injections to provide for UAFG.
5.3 – Balancing, allocation, and reconciliation		
11.	Do you agree with AEMO's view that the existing obligations and processes in the procedures for determining balancing, allocations and reconciliation will be fit for purpose for NGEs and NGE facilities? If not, please provide details on which RMP jurisdiction, clause reference # and what changes do you consider may be required?	No comment.
12.	Will users and distributors be able to meet their obligations under the procedures to provide AEMO	No comment.



Number	Question	Response
	with information on injections (and withdrawals), if NGE facilities connect to distribution networks? If not please provide details on which RMP jurisdiction, clause reference # and, what issues do you think AEMO needs to consider?	
5.3 – Metering		
13.	Do you agree with AEMO's assessment that the RMP with respect to metering are able to accommodate NGEs? If not, please provide details on which RMP jurisdiction, clause reference # and what changes do you think may be required?	The responsibility for NGE facility metering and the provision of data to STTM and Retail Market systems needs to be clear. Currently, Customer Transfer Meters and owned and operated by the Transmission Pipeline Operator in South Australia and Victoria, but by the Distributor in Queensland.
5.3 – Distribution UAFG		
14.	Do you agree with AEMO's view that the distribution UAFG process in the retail market procedures in NSW and ACT, Queensland and South Australia do not require change to facilitate NGEs? If not, what changes do you believe may be required?	The Queensland definition of UAFG Provider needs to be amended to facilitate the capacity for distributors to be providers of UAFG.
5.3 – General Retail Market Procedures		
15.	Considering section 5.3 and Attachment C, do you believe there are any other matters AEMO should consider in reviewing the RMPs? If you believe there are other matters AEMO should consider please provide details on which RMP jurisdiction, clause reference # and why you believe it may need to be reviewed to accommodate NGEs.	The billing of most gas customers across the distribution networks operated and managed by APA occurs on the basis of energy consumed. Pressure and temperature components of the algorithm are fixed, with volume of gas and heating value the variable components. APA considers zonal measurement of heating values to be a more appropriate billing methodology for gas customers than the current state-wide heating value approach. Accurate measurement of the heating value via flow weighted volume analysis will result in greater accuracy of energy consumed at the customer site level if it can be accurately measured at a zonal level. Move to blended heating value zones or further disaggregated mesh blending zones would impact on metering and billing systems.



Number	Question	Response
		APA proposes consistency and harmonisation between heating value methodologies and metering between markets, ensuring cost efficiency of systems and process for energy infrastructure operating in multiple markets.



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