AEMC

RULE

Australian Energy Market Commission

DRAFT RULE DETERMINATION

NATIONAL GAS AMENDMENT (DWGM DISTRIBUTION CONNECTED FACILITIES) RULE 2022

PROPONENT

Victorian Minister for Energy, Environment and Climate Change

31 MARCH 2022

INQUIRIES

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ABOUT THE AEMC

The AEMC reports to the Energy Ministers' Meeting (formerly the Council of Australian Governments Energy Council). We have two functions. We make and amend the national electricity, gas and energy retail rules and conduct independent reviews for the Energy Ministers' Meeting.

SUMMARY

1 The Australian Energy Market Commission (AEMC or Commission) has made a more preferable draft rule (draft rule) that amends the National Gas Rules (NGR) to include distribution connected facilities within the Victorian declared wholesale gas market (DWGM) framework.

2 The draft rule is designed to incorporate distribution connected facilities on an equivalent basis to existing transmission connected facilities. However, some modifications have been made to reflect that these facilities are connecting to materially different networks when compared to the transmission network.

Background and rationale

3 On 8 September 2021, the AEMC received a rule change request from the Victorian Minister for Energy, Environment and Climate Change (the proponent) seeking to amend the NGR to facilitate the participation of distribution connected production and storage facilities in the Victorian DWGM.

4 Under the current arrangements, only facilities connected to the declared transmission system (DTS) are allowed to participate in the DWGM. The proponent considers that enabling the participation of distribution connected facilities in the DWGM, so that supply and demand are scheduled regardless of location in the system, would expand but be consistent with the current market design.

5 Distribution connected facilities may include but are not limited to, hydrogen, biomethane and renewable gas facilities. Currently, these low emissions gas resources are more readily able to connect to a declared distribution system (DDS) due to physical compatibility constraints with the DTS.

6 Elsewhere, distribution connected facilities are able to participate in gas markets. For example, the rules governing the Short Term Trading Markets (STTM) in Sydney, Adelaide and Brisbane have recognised distribution connected facilities since their establishment in 2010.

Features of the more preferable draft rule

7 From 1 October 2023 (commencement date) distribution connected production and storage facilities will be able to register and directly participate within the DWGM, being treated as much as possible on an equivalent basis to the existing transmission connected facilities. This will incorporate these facilities in the most transparent way to the market, with minimal impact on existing market participants and will maintain the existing DWGM market principles.

8 The key aspects of the draft rule are:

- A new registration category has been created to cover distribution connected facilities. Gas injected from the facilities will be bid into the market and scheduled through the existing process.

- Distribution networks do not schedule flows like the flows for the DTS and as such, the way facilities are operated will be far more dependent on network conditions. Therefore, the Commission has taken a flexible approach to scheduling distribution injections, with the distributor being responsible for assessing facility constraints on its network and developing a methodology for managing these. AEMO takes this methodology and applies it transparently through the market schedules, with the flexibility to decide how these constraints are applied through the schedules.
- Distribution injection points will be allocated to entry capacity certificates zones, with any registered market participants allowed to participate in the auctions and secure capacity certificates that can be used to manage scheduling risk during during periods of pipeline congestion. This retains the design of the new regime that was introduced in March 2020 and will commence on 1 January 2023.[1]
- Once the gas is injected in a DDS, new arrangements are needed to manage the transfer of title from the injecting party to the withdrawing party. The draft rule provides for a new clause to manage the transfer of title for injections into a declared distribution system and its associated interactions with the settlement process.
- The existing rules that govern the participant compensation fund, allocations and determination of fees payable to AEMO, default notices and market suspension, and threats and interventions have been extended to capture distribution connected facilities.
- The connections framework for distribution connected facilities will rely on the *Pipeline interconnection principles* developed by Energy Ministers.[2] This will provide a consistent connection framework for all pipelines while providing flexibility to distributors while the industry develops.
- The draft rule allocates gas quality monitoring responsibilities to distributors in their networks, strengthens the approvals and compliance framework for entities monitoring gas quality and provides greater clarity on gas quality monitoring equipment requirements.
- The metering calibration requirements have been extended to include distribution injection points. The draft rules also strengthen the compliance and enforcement framework for metering installations and enhance the transparency of market settlement outcomes.

Benefits of the more preferable draft rule

9 The more preferable draft rule is broadly consistent with the intent and the changes proposed in the rule change request. Through extensive consultation with stakeholders and further analysis, other areas that were not identified in the original request have also needed to be addressed.

10 Having regard to the issues raised in the rule change request, the Commission is satisfied that the more preferable draft rule is likely to better contribute to the achievement of the

1 AEMC, *DWGM improvement to AMDQ regime*, final determination, March 2020.

2 The *Pipeline interconnection principles* form part of a draft legal package developed by Energy Senior Officials that was published in September 2021 and is currently pending Energy Ministers' approval and the South Australian regulatory amendment process.

national gas objective by affording a number of benefits. The draft rule:

- maintains the fundamentals of the current market design, promotes the existing efficiency of the market, provides targeted and proportionate change and minimises implementation complexity
- promotes stability, transparency and clarity of roles and responsibilities
- is flexible and adaptable to technological innovation and a changing market and regulatory environment
- promotes safety, reliability and security of supply.

Implementation

11 Under the draft rule, the new framework will commence on 1 October 2023. As a consequence of the draft rule, AEMO will be required to update its procedures and systems to enable the inclusion of distribution connected facilities into the DWGM. Existing procedures should be updated no later than six months before the commencement date, and new procedures no later than three months before the commencement date.

Interaction with the Review into extending the regulatory frameworks to hydrogen and renewable gases

12 The DWGM rule change is being undertaken concurrently with the AEMC *Review into extending the regulatory frameworks to hydrogen and renewable gases.* While the rule change request does not explicitly target the integration of hydrogen and renewable gas blends, its focus on allowing distribution connected facilities to participate in the DWGM has implications for enabling hydrogen and renewable gas to be injected into gas distribution networks in Victoria.

Consultation

13 The Commission welcomes submissions on this draft determination and the more preferable draft rule by **19 May 2022**.

CONTENTS

1 THE RULE CHANGE REQUEST

On 8 September 2021, the Victorian Minister for Energy, Environment and Climate Change (the proponent) made a request to the Australian Energy Market Commission (AEMC or Commission) seeking to amend the National Gas Rules (NGR).

The rule change proposal seeks to amend the NGR to allow the participation of distribution connected production and storage facilities in the Victorian Declared Wholesale Gas Market (DWGM).

Further information on the DWGM can be found in chapter 2 of the consultation paper, which was published in October 2021.[3]

The issues raised in the rule change request, the rationale and the solutions proposed by the proponent are discussed in detail in chapters 3 to 7.

1.1 The rule making process

On 21 October 2021, the Commission published a notice advising of its commencement of the rule making process and consultation in respect of the rule change request.[4] A consultation paper identifying specific issues for consultation was also published. Submissions closed on 2 December 2021. The Commission received ten submissions as part of the first round of consultation.

The AEMC also held a stakeholder workshop on 14 December 2021 to discuss stakeholder views on facilitated gas markets, including the DWGM.

The Commission considered all issues raised by stakeholders in submissions and feedback provided at the workshop. They are discussed and responded to throughout this draft rule determination.

On 12 January 2022, the Commission published a notice under s. 317 of the National Gas Law (NGL) to extend the publication date of the draft determination to 31 March 2022. The Commission considers that this extension is necessary due to the complexity of the issues raised in the rule change request.

1.2 Consultation on the draft rule determination

The Commission invites submissions on this draft rule determination, including the more preferable draft rule by **19 May 2022**.

Any person or body may request that the Commission hold a hearing in relation to the draft rule determination. Any request for a hearing must be made in writing and must be received by the Commission no later than **7 April 2022**.

Submissions and requests for a hearing should quote project number **GRC0062** and may be lodged online at www.aemc.gov.au.

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3 AEMC, *DWGM distribution connected facilities*, consultation paper, 21 October 2021.

4 This notice was published under 308 of the NGL.

Where practicable, submissions should be prepared in accordance with the Commission's guidelines for making written submissions.[5] The Commission publishes all submissions on its website, subject to a claim of confidentiality. Please clearly mark any sections of your submission that you consider containing confidential material.

If you have any questions about this project, please contact:

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- Daniela Moraes on (02) 8296 0607 or daniela.moraes@aemc.gov.au

5 This guideline is available on the AEMC's website www.aemc.gov.au

2 DRAFT RULE DETERMINATION

This chapter outlines:

- the Commission's draft rule determination
- the rule making test for changes to the NGR
- the assessment framework for considering the rule change request
- the Commission's consideration of the draft rule against the national gas objective
- the interactions with the *Review into extending the regulatory frameworks to hydrogen and renewable gases*.

2.1 The Commission's draft rule determination

Having considered views expressed by stakeholders in submissions and undertaken further analysis on the likely benefits of the proposed rule change, the Commission has determined to make a more preferable draft rule to address the issues identified in the rule change request. The more preferable draft rule is broadly consistent with the intention and changes proposed in the rule change request. However there are some additional issues covered in the draft rule, and some variation in how the policy intent of the rule change proposal is given effect.

The more preferable draft rule made by the Commission is published with this draft rule determination. The key features of the more preferable draft rule are set out as part of our summary of reasons in section 2.4.

The draft rule is a more preferable rule because the rule change request did not specifically outline all the changes that should be made to the NGR to facilitate distribution injections. The rule change request did outline a number of preferred solutions for some issues presented, however, the Commission has not implemented all the preferred solutions exactly as presented, with the differences being as follows:

- The decision for scheduling and setting the market price differs from the proponent's proposed solution. The proponent had suggested that distribution network injection constraints should be excluded from the pricing schedule, consistent with transmission network injection constraints. The Commission has given AEMO the flexibility to determine how constraints impacting distribution connected facilities are managed to ensure that the lowest cost gas is delivered.
- The rule change request outlined that the rules should be updated to ensure distribution injections are covered by the metering accuracy rules. During the Commission's analysis of the metering rules, a number of other changes were identified to ensure that the rules enable distribution connected facilities and remain fit for purpose.
- The rule change request proposed amending the rules to include distribution injections in gas quality standards and gas quality monitoring arrangements. It did not outline all the changes that should be made to the gas quality rules. Gas quality is a key issue for this rule change request given the prospect of gases other than natural gas being injected into distribution networks. During the Commission's analysis, a significant number of

changes were identified to ensure the rules establish a comprehensive framework for gas quality related responsibilities and obligations, and address potential issues for DTS operations and settlement arising from the injection of gases other than natural gas in declared distribution systems.

- Several other sections of Part 19 of the NGR have been amended to enable distribution injections to be facilitated in the most efficient manner. These are outlined in section 2.4 and their respective chapters.

Further detail on the more preferable draft rules for the issues above can be found in chapters 3 to 7. The Commission's reasons for making this draft determination are set out in section 2.4.

Further information on the legal requirements for making this draft rule determination is set out in Appendix A.

2.2 Rule making test

2.2.1 Achieving the NGO

The Commission may only make a rule if it is satisfied that the rule will, or is likely to, contribute to the achievement of the national gas objective (NGO).[6] This is the decision making framework that the Commission must apply.

The NGO is:[7]

> to promote efficient investment in, and efficient operation and use of, natural gas services for the long term interests of consumers of natural gas with respect to price, safety, reliability and security of supply of natural gas.

2.2.2 Making a more preferable rule

Under s. 296 of the NGL, the Commission may make a rule that is different (including materially different) to a proposed rule (a more preferable rule) if it is satisfied that, having regard to the issue or issues raised in the rule change request, the more preferable rule will or is likely to better contribute to the achievement of the NGO.

In this instance, the Commission has made a more preferable rule. The reasons are summarised below.

2.3 Assessment framework

In assessing the rule change request against the NGO the Commission has considered the following criteria:

- **Market efficiency:** which consists of allocative, productive and dynamic efficiency.
  - **Allocative efficiency:** whether the rule change enables market prices that facilitate the allocation of gas to their highest-valued uses.

6 Section 291(1)of the NGL.
7 Section 23 of the NGL.

  - **Productive efficiency:** whether the rule change enables operational signals to facilitate dispatch of the least-cost mix of gas supply to meet demand. This involves considering whether production or storage facilities would be treated consistently in dispatch independent of whether they are directly connected to the distribution network or the transmission network.
  - **Dynamic efficiency:** whether the rule change minimises barriers to entry and promotes efficiency in Victorian gas services, including investment in production or storage facilities as well as investment in the distribution and transmission systems to meet gas demand over time.
- **Innovation:** Do the proposed changes facilitate innovation in the development of gas production, storage, transmission and distribution facilities and the provision of gas services to end-users.
- **Implementation considerations**: Are the proposed changes targeted, fit for purpose and proportionate to the issues they are intended to address. Do the proposed changes provide the stability and transparency in regulatory arrangements to enable consumers, market participants and investors, to make efficient decisions. This involves considering whether and how distribution-connected facilities can be incorporated into the existing market design without introducing excessive complexity.
- **Safety, reliability and security of supply:** Whether the rule change promotes efficient investment in, and efficient use of, natural gas services with respect to the safety, reliability and security of gas supply.
- **Decarbonisation:** Whether market arrangements will enable the decarbonisation of the energy market.

2.4 Summary of reasons

Having regard to the issues raised in the rule change request and during consultation with stakeholders, the Commission is satisfied that the more preferable draft rule will, or is likely to, better contribute to the achievement of the NGO than the current arrangements as the draft rule:

- allows for direct injections by distribution connected facilities into the DWGM thereby promoting allocative, productive and dynamic efficiency in the provision of these services to consumers
- provides targeted and proportionate change at least cost
- promotes stability, transparency and clarity of roles and responsibilities
- incorporates distribution connected facilities into the existing market design without additional complexity
- is flexible and adaptable to technological innovation and a changing market and regulatory environment
- promotes safety, reliability and security of supply.

2.4.1 The draft rule allows for direct injections by distribution connected facilities into the DWGM

The inclusion of distribution connected facilities in the DWGM maintains the fundamentals of the current market design, expanding the existing rules to cover a new participant rather than introducing a new market or new market rules.

The Commission's recommended rules give effect to this expansion primarily through changes to bidding and gas scheduling rules to include injections at the distribution level.[8]

The Commission's draft rule creates a new definition for a DDS injection point and expands bidding rules to require bids to be submitted for injections at DDS injection points and these bids to be scheduled in the market. As a result, these facilities can be bid and scheduled into the market in an open and transparent manner, on an equivalent basis to existing facilities injecting gas into the DTS.

The demand forecast in the DWGM is a key input to the scheduling process. Currently, injections at the distribution level are not contemplated in compiling the demand forecast. The Commission's draft rule amends the demand forecast arrangements to capture the impact of any distribution injections.[9]

The new rules for capacity certificates, which commence on 1 January 2023, do not currently contemplate injections at the distribution level. The Commission's draft rule expands these new rules to include DDS injection points as part of capacity certificates zones.[10]

The expansion of the existing market and market rules to cover new participants is in the Commission's view likely to promote the transparent and effective trade of gas within Victoria, and thereby promote allocative, productive and dynamic efficiency in the provision of natural gas services to consumers in Victoria. By including distribution connected facilities in the market, pricing and operational signals are provided to facilitate the least cost mix of gas supply to meet demand, including new sources of supply at the distribution level. The rule removes the existing barrier to entry into the market for distribution connected facilities, promoting efficient investment in these facilities over time. The draft rule also aligns the DWGM with the STTM markets where injections by distribution connected facilities are accommodated under existing rules.

2.4.2 Implementation considerations with respect to the draft rule

Targeted and proportionate change at least cost

The draft rules are targeted and proportionate to the issues they are intended to address. New terms and new obligations on market participants are avoided unless they are deemed necessary to achieve the objectives of the rule change.

The Commission's draft recommendation for a new registration category, rather than using existing categories, allows requirements for new facilities to be tailored to those facilities.

8 See rules 200, 206(1), 207 and 209 of the draft rule.
9 See rule 208 of the draft rule.
10 See rules 200 and 327B of the draft rule.

Imposing new obligations on existing facilities is avoided as much as possible through this change.[11]

Similarly, recommended changes to the participant compensation fund are targeted to incorporate the new facilities without introducing prohibitive costs either to new participants or existing facilities in the DWGM.[12] The participant compensation fund is managed by AEMO and used to pay compensation to market participants for scheduling errors as determined by the dispute resolution panel. Payments into the fund are based on withdrawals from the DTS. The introduction of distribution connected facilities can reduce the amount of gas withdrawn from the DTS. Expanding the compensation fund to include DDS withdrawals ensures that costs of the scheme are recovered across the DTS and DDS. Given the small size of distribution connected facilities, they would only need to pay a small sum. As such contributions to the fund are preserved but the cost impact on distribution connected facilities is proportionate to their role in the market.

Stability, transparency and clarity of roles and responsibilities

The draft rules are intended to provide clear roles and responsibilities for market bodies and market participants, both for existing and new facilities. This clarity is intended to provide the stability and transparency in regulatory arrangements to enable consumers, market participants and investors to make efficient decisions.

The Commission's draft determination for a new registration category provides for a clear delineation of obligations on AEMO and distributors when a facility connects into a DDS.[13] It also provides existing market participants with confidence that they are not being impacted by any change in the responsibilities put on new registration categories.

The draft rule also includes a new definition for declared distribution system, which is aimed to exclude distribution systems that are either not directly connected to the DTS or are not connected to a wider network. This distinction is intended to provide a clear delineation in roles and responsibilities between networks that will be covered by DWGM arrangements and those that will not be covered by DWGM arrangements, but will still be addressed by recommended changes under the hydrogen review.[14]

The Commission has made a new rule to address the title and transfer of gas in the DDS.[15] The current framework does not address the transfer of title to gas when it is injected into a DDS. This transfer of title is essential to allow for the co-mingling of gas at the distribution level. The new rule seeks to replicate the approach to allocating title to gas in the DTS, in the DDS, but without changing or expanding AEMO's role as the system operator.

The connections framework currently covers connections to the DTS, but not the DDS. The Commission's draft rule, therefore, points to the *Pipeline interconnection principles* as the DDS connections framework. The principles will provide a consistent connection framework

11 See rule 135A of the draft rule.
12 See rules 225(4) and 225(5) of the draft rule.
13 See rule 135A of the draft rule.
14 See rule 200 of the draft rule.
15 See rule 220A of the draft rule.

for all pipelines while providing broad obligations to distributors as the industry develops. A transitional rule will also be in place until the *Pipeline interconnection principles* are included in the NGL and the NGR. The draft rule is intended to provide stability and clarity as the industry grows.

Existing rules in relation to default notices and market suspension do not currently contemplate distribution connected facilities. The Commission's draft rule provides for suspension notices to be used in relation to injections and withdrawals from the DDS, given that they will be scheduled in the DWGM.[16]

Incorporating a new participant into the existing market design without additional complexity

The draft rule is designed to incorporate distribution connected facilities into the existing market design without introducing additional complexity. Existing frameworks are leveraged as much as possible. The Commission's draft rule extends the metering framework to distribution connected facilities.

The draft rule incorporates metering installations for DDS injection points and transfer points between distribution systems under various accuracy requirements,[17] strengthens the compliance and enforcement framework for metering installations and enhances the transparency of market settlement outcomes.[18] It also allows connected parties to elect to provide their own metering installations without requiring agreement from the relevant network service provider.[19] The draft rule reduces the frequency at which the metering calibration requirements in AEMO's procedures must be reviewed.[20] This helps to lower the administrative and regulatory burden on AEMO without having a significant impact on market participants.

2.4.3 The draft rule is flexible and adaptable to technological innovation and a changing market and regulatory environment

Flexibility, adaptability and innovation

The draft rules are flexible and adaptable to the different circumstances that may prevail in each network, the different speeds of development and commercial arrangements. The industry is in its early stages and is likely to change with the development of Victoria's gas substitution roadmap and the development of the hydrogen production industry.

Distribution connected facility constraints may be essential for managing gas quality on the distribution network. The Commission considers that a solution needs to be flexible enough to account for changes in the industry as it grows. The Commission has recommended an operational coordination arrangement between AEMO and the applicable distributor to help determine constraints that need to be reflected in market schedules.[21] This arrangement

16 See rules 259 and 260 of the draft rule.
17 See rule 299 of the draft rule.
18 Rule 293 of the draft rule.
19 See rule 292(2) of the draft rule.
20 See rule 299(3) of the draft rule.
21 See rules 200, 317A and 317B of the draft rule.

gives the distributor responsibility for determining constraints for distribution connected facilities. The process fits within the existing scheduling timeframe imposed on AEMO for creating and publishing the operating and pricing schedules and will be subject to the existing economic efficiency principles within the rules for determining operating and pricing schedules.

Further, in relation to the data necessary for determining constraints in market schedules, the Commission considers that the data required for the safe operation of a DDS is likely to vary in each network. The Commission has made a draft rule that provides a high-level framework for sharing data between distributors and AEMO, allowing for the specific arrangements to be negotiated between the parties.[22]

Decarbonisation

The Commission has made a draft rule that supports the decarbonisation of Victorian wholesale and retail gas markets. Injections of renewable gases including hydrogen blends, biomethane and other renewable gases are facilitated at the distribution level. Investment in facilities that are targeted at supplying lower emissions fuels into natural gas networks at the distribution level is facilitated by the rule.

Decarbonisation is enabled by the rule irrespective of government targets in relation to renewable gases and renewable gas blends. However, where governments decide to introduce renewable gas targets, mandates or objectives, the implementation of these targets is enabled by the draft rule.

The draft rule, however, is technology-neutral. Injections at the distribution level are enabled for all facilities, including storage facilities supplying natural gas or natural gas equivalent blends into the market. Under the draft rule, a distributor and a connecting party can agree a gas specification for a DDS injecting point that does not meet the standard gas quality specifications, if all affected participants agree.[23] This will facilitate the connection of facilities that are injecting gas blends or gases other than natural gas.

2.4.4 The draft rule promotes safety, reliability and security of supply

The draft rule promotes efficient investment in, and efficient use of, natural and renewable gas services with respect to the safety, reliability and security of natural gas supply.

The draft rule achieves this through the extension of existing frameworks to connections at the distribution level, providing clear roles and responsibilities through rules and procedures that are flexible to changing market requirements.

In relation to gas quality monitoring, the Commission has determined that responsibility for gas quality monitoring in the DDS, on a system-wide basis, is best left with distributors, as each distributor is already responsible for gas quality in accordance with its gas safety case under the *Gas Safety Act (Victoria) 1997*. This is consistent with the principle of risk being

22 Rule 317A of the draft rule.

23 See rule 287A of the draft rule. Once the alternative specification is agreed, it must be complied with rule 289A of the draft rule.

allocated to those parties that are in the best position to manage risk. Responsibility for gas quality monitoring at market injection points and the DTS is left with AEMO.

In addition, in order for distributors to meet their gas quality monitoring responsibilities under the *Gas Safety Act (Victoria) 1997*, the Commission has made a draft rule that requires AEMO to share information on gas quality for specific transfer points between the DTS and a DDS.

The Commission has also added a new definition to the rules of a responsible gas quality monitoring provider.[24] This new definition refers to the registered participant or service provider that is responsible for providing the gas quality monitoring arrangements for injection points or other points on a declared system. This provides the flexibility for a market participant to elect to take on this role.

The Commission has made a draft rule that requires AEMO to make gas quality monitoring procedures that set out requirements for gas quality monitoring at the transmission and distribution level.[25] The draft rule will promote a consistent approach to gas quality monitoring at all market injection points, including DDS injection points and points where gas flows between distribution systems. The Commission considers that procedures should be used as they are flexible and can be changed as requirements evolve over time. The procedures will include information such as standard gas quality specification, equipment required for gas quality monitoring systems and contents required in gas quality monitoring plans.

Market participants will also be required to inject gas only at points with approved gas quality monitoring arrangements and to contribute a proportionate share of costs in establishing and maintaining gas quality monitoring arrangements.[26] The Commission has made a draft rule that enables connected parties to elect to provide their own compliant gas quality monitoring systems on their assets.[27] The Commission considers that giving connected parties the ability to take responsibility for gas quality monitoring will promote efficient investment.

In relation to gas quality standards and specifications, the Commission has made a draft rule that allows distributors to agree gas quality standards for distribution connection points that are different to the standard gas quality specifications, by agreement with the connecting party and other affecting participants.[28] It also enables distributors to accept off-specification gas if it is deemed necessary to ensure the safety, security and reliability of the DDS.[29]

The NGL and existing rules give AEMO wide powers to maintain system security including directing market participants to do any reasonable act or thing that AEMO believes is necessary for the circumstances. The Commission's draft rule provides for registration of distribution connected facilities and so, as registered participants, the operators of these facilities will be subject to the existing rules related to threats and interventions.[30] The draft

24 See rule 200 of the draft rule.
25 See Subdivision 3.1 of Division 3 of the draft rule.
26 See rule 289F(2) of the draft rule.
27 See rule 289C of the draft rule.
28 See rule 287A of the draft rule.
29 See rule 289A(3) of the draft rule.
30 See rule 343(1) of the NGR.

rule also includes distribution connected facilities in the rules providing for registered participant claims in respect of the application of market interventions.[31] Similarly, the rules providing for compensation arising from the application of an administered price cap have been extended to distribution connected facilities.[32]

31 See rule 344(2) of the draft rule.

32 See rule 350 of the draft rule.

3 MARKET OPERATIONS

This chapter covers issues surrounding the operation of the DWGM, such as registration categories, offering and bidding gas in the market, demand forecasting, scheduling application of constraints and the allocation of capacity certificates used for tie-breaking.

This chapter outlines:

- each of the issues outlined above and in the consultation paper
- stakeholder feedback to these issues
- the Commission's analysis of the issues
- the Commission's position on the issues.

3.1 Registration categories

Rule 135A of the NGR covers all the categories of registered participants that participate in the DWGM, which includes the following:

Table 3.1: Registration categories

REGISTRABLE CAPACITY	DESCRIPTION	RULE
Declared transmission service provider	The service provider for the declared transmission system	135A(a)
Distributor	The service provider for a declared distribution system	135A(b)
Producer	A producer that injects natural gas into the declared transmission system	135A(c)
Market Participant — Producer	A producer that buys or sells natural gas in the declared wholesale gas market	135A(d)
Storage provider	A storage provider whose storage facility is connected to the declared transmission system	135A(e)
Market Participant — storage provider	A storage provider who buys or sells natural gas in the declared wholesale gas market	135A(f)
Interconnected transmission pipeline service provider	A service provider for a transmission pipeline that is connected to the declared transmission pipeline	135A(g)
Transmission customer	An end-user that withdraws natural gas from the declared transmission system	135A(h)
Market Participant — transmission customer	An end-user that: • buys natural gas in the declared wholesale gas market; and • withdraws natural gas from the declared transmission system	135A(i)
Market Participant —	An end-user that:	135A(j)

REGISTRABLE CAPACITY	DESCRIPTION	RULE
distribution customer	• buys natural gas in the declared wholesale gas market; and • withdraws natural gas from a declared distribution system	
Market Participant — Retailer	A retailer that sells natural gas that has been transported through the declared transmission system	135A(k)
Market Participant — Trader	Any other person that buys or sells natural gas in the declared wholesale gas market	135A(l)

Source: See rule 135A of the NGR.

For a facility to be able to participate within the DWGM it must be a registered participant under the NGR.

3.1.1 Proponent's view

The NGR does not provide a registration category for a distribution connected facility.

The proponent identified two possible solutions that could solve this problem:[33]

1. Introduce new facility types for distribution connected facilities.
2. Expand the existing definitions for the facility types (producer, storage provider, market participant producer and market participant storage provider) to include distribution connected facilities.

The proponent indicated that the existing definitions should be expanded to include any distribution connected facility and that it considers this option would automatically flow through the rules. In its view, this would reduce the number of updates required when compared to creating an entirely new participant category.

3.1.2 Stakeholder views

The Commission received a mixed response from stakeholders with views ranging from expanding the existing registration categories, creating a new category and no preference in the approach.

AusNet and APA supported expanding the existing definitions to include distribution connected facilities, with AusNet not supporting either of the two proposed alternative solutions.[34] Alinta and ENGIE supported expanding the definitions, expressing that it is likely to be less complex and more efficient than creating a new category.[35] Alinta specifically raised that a new participant category may increase overall entry costs and the intricacy of the framework.

33 Rule change request, p. 6.
34 Submissions to the consultation paper: AusNet, p. 5. APA, p. 28.
35 Submissions to the consultation paper: Alinta, p. 3. ENGIE, p. 4.

Origin's preference was to establish a new category given that distribution connected facilities are likely to have different characteristics than the existing large supply sources injecting into the DTS.[36] In its view, this difference could impact the manner that the facilities participate in the market, with a separate category allowing any specific requirements or arrangements required for distribution connected facilities to be transparently applied.

AEMO and AGIG did not express a preference towards expanding the existing definitions or creating a new registration category. AGIG stated that the key outcome should be that distribution connected facilities can participate in the DWGM, with the structure of the rules ensuring that distribution connected facilities with different facility characteristics to those connected to the DTS are recognised in the rules.[37]

AEMO noted that a new registration category may be useful if distribution connected facilities are subject to different rule requirements than transmission connected facilities, so these differing requirements could be readily differentiated.[38]

AEMO provided an example where the distribution connected facilities are only subject to a subset of the rules for scheduling, in which case having a separate registration category would make it clear what rules and procedures apply to each type of producer. However, if the rule requirement were largely similar for a producer regardless of the connection location, AEMO considered that the existing registration categories would be fit for purpose and could be expanded to cover distribution connected facilities.[39]

AEMO also raised a question on whether facilities that inject hydrogen directly into a distribution system should be captured as producers, given they are supplying energy into the market.[40] AEMO considered that it is currently unclear if direct injection would be covered as a producer given the definition of natural gas and the proposed NGL changes in the *Review into extending the regulatory frameworks to hydrogen and renewable gases.*[41]

Another issue identified by AEMO was how blending facilities and their operators are treated. In the future, multiple primary gas production facilities could sit behind a common blending facility that injects the natural gas equivalent into the market.[42] These blending facilities would also withdraw gas from the network in order to create a natural gas equivalent and as such differ from the current concept of a natural gas producer.[43] AEMO pointed out the potential that both the blending facility and the primary gas production facility would need to be included in the registration framework if they are required to participate in the market.

36 Origin, submission to the consultation paper, p. 2.
37 AGIG, submission to the consultation paper, p. 4.
38 AEMO, submission to the consultation paper, p. 4.
39 Ibid.
40 With direct injections the blending would occur within the network or at another facility.
41 AEMO, submission to the consultation paper, p. 4.
42 See explanation of natural gas equivalent and primary gas below.
43 The current definition of producer under rule 200 of the NGR describes a person that injects gas into the DTS.

BOX 1: GAS BLEND, NATURAL GAS EQUIVALENTS, PRIMARY GAS AND COVERED GASES

On 20 August 2021, Energy Ministers agreed that the national gas regulatory framework should be amended to bring hydrogen, biomethane and other renewable gases blends within its scope.

In the first consultation paper published in October 2021 by Jurisdictional Officials, the term 'natural gas equivalents' was used to refer to low-level blends and renewable gases that are suitable for consumption in existing natural gas appliances. Officials have refined their approach in the second consultation paper published in March 2022, with three new terms introduced:

- *primary gas*, which means natural gas, hydrogen, biomethane, synthetic methane or a gas prescribed by the Regulations for the purpose of the definition
- *gas blend*, which means primary gases that have been blended together
- *covered gas*, which means a primary gas or a gas blend, or a gas or blend of gases prescribed as a covered gas in a participating jurisdiction by local regulation of the participating jurisdiction.

A natural gas equivalent will be a form of covered gas.

Throughout this paper, there may be references to blended gas or hydrogen that may be injected into the DDS. The blended gas referenced within this paper is taken to mean a natural gas equivalent when is it supplied to customers, but could be any covered gas when it is injected (for example, a high level blend that is then commingled with natural gas in the pipeline so that customers receive a natural gas equivalent). Any direct hydrogen injections would be equivalent to a primary gas direct injection.

Source: Energy Ministers, *Extending the national gas regulatory framework to hydrogen blends & renewable gases*, consultation paper, 21 October 2021.
Note: For further details on the refined approach proposed by Officials, please refer to Energy Ministers, *Extending the national gas regulatory framework to hydrogen blends & renewable gases*, consultation paper, 31 March 2022.

3.1.3 Analysis

The Commission considers that AEMO's role as the system operator of the DTS needs to be evaluated when assessing how best to register a distribution connected facility. AEMO as the system operator of the DTS has a number of operational obligations for facilities that are connected to the DTS as well as the operation of the DTS itself.

If the existing registration categories were expanded to include injections from distribution connected facilities, then there would need to be additional drafting changes in the rules to ensure a clear separation of responsibilities from AEMO and the distributor. Further analysis on the legal responsibilities between the distributors and AEMO is found in section 6.4.2.

The requirements and standard operation of distribution connected facilities are likely to be materially different to that of the existing facilities already connected to the DTS. A separate registration category would allow existing participants certainty that the requirements for

their facility have not changed, as well as make it easier for new entrants to see the requirements for connecting into a DDS.

Registration categories are also being consulted on as part of the *Hydrogen Review*, with consideration being given to amending the NGR to refer specifically to blending facilities. This is due to the characteristics of blending facilities being different to typical production facilities in that they also require the withdrawal of gas in order to produce the blend.

3.1.4 Commission's position

Given the analysis above and stakeholders' feedback, the Commission has made a draft rule to create a separate registration category for distribution connected facilities.

This approach was selected because it provides a clear delineation between the obligations of AEMO and the distributor. This also gives certainty to existing market participants that they are not being impacted by their registration category being expanded to include distribution connected facilities.

To achieve the above, the Commission has introduced two new registration categories under rule 135A of the NGR:

1. distribution connected facility operator: a person who injects gas into a DDS at a DDS injection point from a storage facility, production facility or blend processing facility
2. Market Participant — distribution connected facility operator: a distribution connected facility operator that buys or sells gas in the declared wholesale gas market.

The draft rule also amends some of the registration categories to refer to gas, rather than natural gas, with gas having the same meaning as given in Part 19.[44] This change removes the existing inconsistency between Part 15A and Part 19 of the NGR, and also addresses the gap that would exist within the registration rules if a distributor was to accept the injection of a gas other than natural gas at the distribution level.

The draft rule also allows for a situation where there is more than one facility operator for a distribution connected facility, by allowing one of the group's member to be nominated as the person responsible for performing the obligations on behalf of the group. This is consistent with the approach used in the STTM for multiple facility operators.[45]

The Commission notes that this approach is different to that taken in its recent final determination for *Integrating energy storage systems into the NEM,* which introduced the integrated resource provider participant category.[46] This went some way to moving the registration categories in the NEM to a services-based model, which categorises market participants based on the services that they offer into the market. The Commission notes that a similar approach is not practical with the current DWGM market design due to the different market arrangements between the NEM and the DWGM.

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44 Rule 200 of the NGR defines gas as including natural gas and processable gas.

45 See rule 204A of the draft rule and rule 365 of the NGR.

46 AEMC, *Integrating energy storage system into the NEM,* final determination, 2 December 2021.

3.2 Requirement to submit bids and gas scheduling

It is compulsory for all gas transported by the DTS to be traded through the DWGM. This requires market participants to submit bids and offers to AEMO on a daily basis.[47] AEMO then schedules injections and withdrawals, using bids where submitted and applying the *Gas scheduling procedures*. The provisions in the NGR only account for injections into the DTS and as such, there are no provisions relating to the injection, bidding and scheduling of DDS injections.

3.2.1 Proponent's view

The proponent recommended that all the relevant bidding and scheduling rules be updated to include the ability to submit bids for DDS injections from a distribution connected facility, with the same scheduling rules applied to allow injections into the DDS to be scheduled.

3.2.2 Stakeholder views

The Commission received mixed support from stakeholders on whether distribution connected facilities should be required to submit bids and be included within the gas scheduling process.

AEMO, APA and ENGIE showed support for distribution connected facilities being included within the bidding and scheduling process.[48]

AEMO expressed if DWGM coverage is expanded to include injections from distribution connected facilities then those injections would need to be accounted for in the settlement process. AEMO considered that, at a high-level, there are two options to facilitate this:[49]

1. include distribution connected facilities for bidding as proposed by the proponent.
2. exclude distribution connected facilities from bidding: under this option, distribution connected facilities and the participants injecting gas from these facilities would not directly participate in the market.

In a broad sense, AEMO considered that if there is a long-term view that distribution connected facilities should participate in the market then it may be undesirable to implement the second option in the short-term.[50]

APA supported updating the bidding rules and expanding the scheduling rules to allow distribution connected facilities to bid into the market, ensuring that expanding market arrangements are as seamless as possible.[51]

ENGIE, in principle, supported expanding the bidding and scheduling rules to include distribution connected facilities but noted that there may be issues arising from the injection point or the gas being injected. ENGIE gave an example that the ability to inject a particular

47 AEMC, *Victorian DWGM Background Paper*, 14 March 2019, p. 7.
48 Submissions to the consultation paper: AEMO, p. 5-6. APA, p. 28. ENGIE, p. 2.
49 AEMO, submission to the consultation paper, pp. 5-6.
50 Ibid.
51 APA, submission to the consultation paper, p. 28.

quantity of gas in a distribution system may be more dependent than transmission injections on the demand on the distribution system at the time.[52] This may make it correspondingly harder to accurately forecast quantities in advance. This point is explored further in section 3.3.

AGIG, Alinta and Origin supported expanding the bidding and scheduling process but noted that there may be distribution specific issues that would need to be accounted for.[53] AGIG stated there was merit in expanding the bidding rules for distribution connected facilities, in the same way it occurs for DTS facilities. However, AGIG observed, as with ENGIE above, that the ability for certain distribution connected facilities to forecast how much they can bid into the market will be dependent on the underlying network demand. AGIG additionally noted that hydrogen blending will be very closely tied with demand and there may be gas quality reasons to have it 'first off the rank' in bids, regardless of the bid price.

For scheduling, AGIG noted the same limitations as ENGIE relating to the local demand of the system. The issues outlined within ENGIE's submission are explored further in the draft determination.

Alinta supported updating the bidding and scheduling rules to apply a proportionate level of responsibility and obligation on declared distribution system participants for scheduling purposes. Alinta additionally noted consideration should be given to how the new capacity credits mechanism, to be introduced in early 2023, can be expanded to new entrants. This is explored further in section 3.5.2.[54]

Energy Networks Australia did not support smaller distribution connected facilities being included for bidding and scheduling, on the basis that the cost of compliance with the current requirements would likely outweigh the benefits.[55]

3.2.3 Analysis

Stakeholder submission outlined two common themes when assessing any decision to include distribution connected facilities for bidding and scheduling:

1. the benefits of the obligation should not outweigh the burdens and the interconnection between demand and
2. a facility's ability to inject needs to be adequately captured.

The Commission's response to the concerns about demand and its interaction between how much gas a facility can inject are addressed within section 3.4.

For the two options presented by AEMO, option one requires participants to submit bids to the market for any quantity of gas that they intend to inject directly into the DWGM and have this gas scheduled accordingly. AEMO assumes that the same set of bidding and scheduling

52 ENGIE, submission to the consultation paper, p. 4.
53 Submissions to the consultation paper: AGIG, pp. 2-3; Alinta, p. 3; Origin, p. 2.
54 Alinta, submission to the consultation paper, p. 3.
55 Energy Networks Australia, submission to the consultation paper, p. 2.

rules would apply to distribution connected facilities which would allow the existing procedures and systems to be used without significant change.[56]

The benefits of this option are that it would be relatively easy to implement, using the existing functionality and extending to the distribution connected facilities. Participants under this option would also be able to leverage the DWGM for portfolio and risk management, with the injection bids being published, providing market transparency. AEMO noted that the potential downsides of this approach are that mandatory market participation for distribution connected facilities and participants may lead to potential operational and administrative burdens. These burdens may not be proportionate in terms of the overhead for very small facilities to submit bids.[57]

Option two would have distribution connected facilities not being scheduled in the market and participants would not need to submit bids. The DWGM settlement would continue to only be for amounts withdrawn from the DTS custody transfer meters with distribution injections excluded from the wholesale market settlement.

To facilitate this, adjustments would be needed to the DWGM wholesale and retail settlement to account for any distribution injections. A change would likely be required to the current allocation process as it only contemplates withdrawals from the DTS into a DDS and assumes this withdrawal is the only supply source. AEMO expects that retail allocations would need to be updated to determine the share of withdrawals from the DTS versus gas injected from a distribution connected facility into a DDS, with these quantities allocated to the appropriate participants and settled accordingly.[58]

AEMO notes that the benefits of this approach are that it would possibly minimise the participation burden for distribution connected facilities, with there not being the need to submit bids for quantities of injections. In this option, injecting participants would not be exposed to DWGM risk as the injected amounts are removed from the market settlement, however, AEMO points out that this may also be a downside of the approach. This option was outlined by AEMO as it may be more practical while distribution connected facilities have a small share of supply.

A number of downsides were outlined that would be associated with this approach. As noted above, retail and wholesale allocations would need to be adjusted to reflect the distribution-level injections with AEMO's systems not currently catering for this. This would likely lead to more complex system implementation when compared to option one, but further analysis is needed from AEMO to understand the impacts of this option on its systems. Participants would not be directly participating in the DWGM market and as such would not be able to sell gas or manage their portfolios through the market. This would also limit market transparency for distribution connected facilities and would not scale if these facilities reach a significant share of supply.

56 AEMO, submission to the consultation paper, p. 5.
57 Ibid.
58 Ibid.

The Commission agrees with the arguments put forward by AEMO and considers that option one provides the best outcome. The Commission has engaged in further discussions with stakeholders after the close of submissions to better understand the specific issues relating to the burden for distribution connected facilities being required to bid in and have their gas scheduled in the market. During these discussions, which have included representatives from AEMO, stakeholders were of the view that the current suite of bidding and scheduling rules would not be a material burden for distribution connected facilities.

The benefits of including distribution connected facilities within the bidding and scheduling process are that it will fully bring these facilities into the DWGM market and allow for the option to sell gas through bilateral contracts as well as on the spot market. Additionally, being fully incorporated into the DWGM brings transparency over how distribution connected facilities bid and deliver gas into the market and allow for portfolio risk management through the market, as noted by AEMO in its submission.[59] This option also provides a better avenue for the facilities and the industry to scale up as the market develops.

AEMO outlined in its submission that the implementation options for requiring facilities to submit bids and have their gas scheduled would be easier to implement when compared to not scheduling distribution connected facilities. The downside of this approach, as outlined by AEMO, is that it may involve operational and administrative burdens.[60] Given the further stakeholder response above the Commission considers that the burdens from being required to submit bids and being scheduled in the market do not outweigh the benefits of being included in the market.

The rule change request also raised the possibility of a threshold approach to small facilities, similar to the approach for small facilities in the NEM, where a reduced set of requirements apply. The Commission's response to this is outlined in Appendix C.2.

3.2.4 Commission's position

The Commission has made a draft rule to include distribution connected facilities within the existing set of DWGM bidding and scheduling rules. This will enable distribution connected facilities to inject gas into the market in a way that is open, transparent and on an equivalent basis to facilities already in the market. The Commission considers that this approach will better contribute to the achievement of the NGO, by promoting the efficient operation of distribution connected facilities within the DWGM.

The intent behind the rule change from the Victorian Minister was to facilitate distribution connected facilities to participate in the Victorian gas market, which encompasses the DWGM. This decision reflects the intent of the rule change request.

To achieve the above the draft rules:

- create the following new definitions
  - DDS injection point, meaning a receipt point on a declared distribution network.

59 AEMO, submission to the consultation paper, pp. 5-6.
60 Ibid.

    - market injection point, which means a system injection point or a DDS injection point or both.[61]
- expands the bidding rules such that market injection points are required to submit bids for gas they intend to inject, with these bids being required to be scheduled in the market and following the existing set of bidding rules for the DWGM.[62]

Additional consequential rules have also been updated to reflect this decision, including that injection bids are made in good faith, distribution connected facilities notify AEMO of the gas they intend to inject for the day,[63] and changes to include distribution connected facilities as part of AEMO's data publishing.[64]

Introduction of new definitions

As part of the Commission's draft rule several new definitions, specific to Part 19 of the NGR, have been introduced. Some key new definitions that are mentioned throughout this draft determination are described below:

- **DDS injection point** means a receipt point on a declared distribution system.
- **declared distribution system** means a declared distribution system within the meaning of the *NGL* but does not include a distribution system, or part of a distribution system, that is:
    - not connected directly or indirectly to the declared transmission system; or
    - is indirectly connected to a declared transmission system but by means of a pipeline that does not form part of the declared transmission system.
- **distribution connected facility** means a storage facility, production facility or blend processing facility connected to a declared distribution system.
- **distribution connected facility operator** means a person who injects gas into a declared distribution system at a DDS injection point.
- **distribution constraint** means a constraint in or affecting a declared distribution system at any time as a result of which (having regard to operational requirements relating to pressures) gas flows in any part of the system are or (but for anything done by the distributor) would be restricted, whether the constraint results from the size of any part of the declared distribution system, the operation or failure to operate of any part of the declared distribution system or the extent or distribution of supply or demand in any part of the declared distribution system.
- **market injection point** means a system injection point or a DDS injection point or both.

The addition of a definition for declared distribution system in this draft rule is aimed to exclude distribution systems that are either not directly connected to the DTS or are not connected to a wider network. This distinction is intended to provide a clear delineation in

61 See rule 200 of the draft rule.
62 See rules 207, 206 and 209 of the draft rule.
63 See rules 213 and 219 of the rule.
64 See rule 320 of the draft rule.

roles and responsibilities between networks that will be covered by DWGM arrangements and those that will not be covered by DWGM arrangements.

In Victoria, the Minister for Energy, Environment and Climate Change has the power to 'designate and declare' a distribution pipeline or a transmission pipeline as a "declared distribution system" or a "declared transmission system".[65] Should, in the future, a declared distribution system that is not directly connected to a DTS have the pipelines connecting them declared, and thus become directly connected to a DTS, then such declared distribution system would be covered by the changes in this draft determination.

3.3 Demand forecasts

Market participants that intend to withdraw gas from the DTS must submit a forecast of this demand for each hour of the day. Where required by AEMO, market participants may also have to submit a demand forecast at one or more specified system withdrawal points.[66]

The demand forecast is a key input into the scheduling process, which is explained in more detail in the consultation paper and at a high level in section 3.4.[67]

3.3.1 Proponent's view

Currently, demand forecasts only account for withdrawals from the DTS, and do not include injections into the DDS. Distribution injections will offset the demand required from the DTS, causing an imbalance in this forecast meaning supply and demand would not balance.

The proponent suggested altering the existing demand forecast definition such that it is inclusive of all gas consumed from a declared system, that is both distribution and transmission.[68]

3.3.2 Stakeholder views

The Commission received support from all stakeholders who responded to the demand forecast issue that the forecast should be expanded to include all gas consumed. Stakeholders noted that amending the definition would allow supply and demand to remain equal.[69]

AEMO noted that if distribution connected facilities are scheduled in the DWGM, then the definition of demand would need to be changed to include consumption supplied from those facilities so that injections balance withdrawals.[70] The Commission's decision, as outlined above in section 3.2.4, is to schedule distribution connected facilities in the DWGM.

Conversely, if the facilities were not scheduled in the market, then AEMO considered that the demand definition would remain as it is now, being the gas withdrawn from the DTS. In this

65 The instrument utilised for the declaration is a ministerial order under the *National Gas (Victoria) Act 2008*, Sections 9A and 39.

66 See rule 207 of the NGR.

67 AEMC, *DWGM distribution connected facilities*, consultation paper, p. 7.

68 Rule change request, p. 6.

69 Submissions to the consultation paper: AEMO, p. 7; AGIG, p. 5; AusNet, p. 5; ENGIE, pp. 4-5; Origin, p. 2; Alinta, p. 3-4; AGL, p. 2; Energy Networks Australia, p. 2; APA, p. 28.

70 AEMO, submission to the consultation paper, p. 7.

case, retailers would need to adjust their demand forecasting methodology to exclude the demand supplied from any distribution connected facility. AEMO noted that with this approach, as the number of facilities increases, the lack of transparency could create system security risks and AEMO would likely request site-specific demand forecasts from retailers for each injection location.[71]

AGIG agreed that there was merit in expanding the demand forecast definition to include all gas consumed from distribution and transmission systems within a declared system. The reasoning provided is that this change would allow demand and supply to remain equal, maintaining the supply and demand balance in a clear and transparent manner.[72]

AusNet supported amending the demand definition, noting that demand forecasts for withdrawals may be complex and an alternative may involve calculating forecast withdrawals based on inputs. ENGIE also supported the amendment noting that it would assist in balancing supply and demand, with ENGIE not being aware of any suitable alternatives.[73]

Origin agreed it would be necessary to update the demand forecasting definition, where DDS injections are enabled, to account for those injections and ensure supply/withdrawals from the DWGM balance for scheduling/settlement purposes.[74]

Alinta supported amending the demand forecast definition to include all sources of gas consumed, noting its importance to correctly balance market demand and settlement functions. Alinta noted that ensuring the viability and accuracy of gas metering will be equally important and encouraged the AEMC to work closely with the National Measurement Institute and Standards Australia to develop fit for purpose technical standards.[75]

AGL, Energy Networks Australia and APA all supported amending the demand definition as described in the consultation paper.[76]

3.3.3 Analysis

In assessing the changes required for the demand forecast, two key issues need to be considered:

1. the formulation of the demand forecast
2. the need for distributors to have access to demand data from AEMO.

Ensuring that supply and demand balance is a critical market principle that ensures that the appropriate amount of gas is scheduled into the market. As outlined by AEMO, the decision to amend the demand forecast definition depends on whether the facilities are scheduled into the market.

Given the Commission's decision in section 3.2.4, where facilities are required to submit bids and be scheduled by the market, the demand forecast will also need to be amended.

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71 See rule 208(2) of the NGR.
72 AGIG, submission to the consultation paper, p. 5.
73 Submissions to the consultation paper: AusNet, p. 5. ENGIE, p. 4-5.
74 Origin, submission to the consultation paper, p. 2.
75 Alinta, submission to the consultation paper, pp. 3-4.
76 Submissions to the consultation paper: AGL, p. 2; Energy Networks Australia, p. 2; APA, p. 28.

Stakeholder submissions were in favour of amending the demand definition to include all gas consumed from a declared network, ensuring that supply and demand balance.

Submissions to the requirement to submit bids and gas scheduling outlined the demand for the localised system where a distribution connected facility will be a key input for the gas that can be injected. The direct interaction between this and the ability for a facility to inject within the DWGM schedules is covered in section 3.4.3, however, the demand data may still be of importance for distributors to manage their network.

3.3.4 Commission's position

Given the analysis above, the Commission has made a draft rule that amends the demand forecast to include all gas consumed from a declared network. This decision is in line with stakeholder support for amending the demand forecast.

To achieve this, the Commission has amended the definition of demand, as described under rule 208 of the NGR, to include gas withdrawn from the DDS but excluding amounts that are already covered from DTS withdrawals or specified system withdrawal points. AEMO may also request a demand forecast, if it requires it, from one or more specified DDS withdrawal points. This amendment aims to capture the impact of any distribution injections on the demand forecast.

The Commission also considers that given the tightly interrelated nature of demand and distribution connected facilities' abilities to inject, appropriate information-sharing provisions between AEMO and the relevant distributor are also required.

The data that may be required for the safe operation of a DDS is likely to vary for each network, both in the nature of the data and the time in which it is needed by the distributor.

Given this variability, the Commission has made a draft rule that provides a high-level framework for data sharing between distributors and AEMO, allowing for the specific arrangements to be negotiated between the parties. This process is tightly integrated with the Commission's position relating to the gas scheduling arrangements and the draft rules will be specified in section 3.4.4.

3.4 Gas scheduling

This section covers the issues surrounding the determination of the market price, through the pricing schedule and operating schedule. This chapter outlines:

- the issue to be addressed
- stakeholders' feedback on the issues
- the Commission's analysis
- the Commission's position for the issues.

3.4.1 Issues and proponent's view

Determination of market price

The market price is determined by AEMO through its production of pricing schedules that specify injections and withdrawals of gas to be made each day. This must be done in a way that minimises the cost of satisfying the expected demand for gas on that gas day.[77]

The current provisions under the NGR only consider DTS connected facilities, so it is not clear how distribution connected facilities would fit under the existing constraint equations.

The two options outlined by the proponent in the rule change request to address this issue were:

1. not include distribution network constraints in the pricing schedule and instead treat the facilities consistently to other network injection constraints
2. include these constraints within the market price and pricing schedule, as this is equivalent to treating the distribution injections as a negative demand where withdrawal constraints are included in the pricing schedule.

The proponent also questioned whether a distribution connected facility limitation, such as blending constraints, should impact the market price. The proponent recommended that any distribution network injection constraints should be treated consistently with other injection network constraints, and as such not be included in the pricing schedule.[78]

Operating schedules

Operating schedules set out each market participant's hourly gas injections and withdrawals at each injection and withdrawal point, taking account of transmission pipeline constraints, linepack distribution, system limits on pressure and gas flows.[79]

The current operating schedule as produced by AEMO requires that injection side transmission constraints, that are internal to the DTS are included,[80] such as the physical capacity of the DTS.[81]

When gas is injected at the distribution level, this gas may be of a different composition to that already in the system. Distributors may wish to impose constraints on the quantity of these gases that can be injected, to maintain the correct gas quality of gas delivered to customers, and these constraints may depend on demand at the time and the blended composition already in the distribution system.

If this is to occur, it is unclear whether the blending constraint would be treated as a network constraint or if it should be included in the operating schedule.

The proponent did not indicate a preferred solution but suggested three potential solutions:[82]

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77 See rule 221(4) of the NGR.

78 Rule change request, pp. 6-7.

79 See rule 215 of the NGR.

80 Transmission constraints affecting withdrawals were introduced into the pricing schedule through the AEMC's *DWGM simpler wholesale price* final rule in March 2020.

81 See rule 215(2) of the NGR.

82 Rule change request, p. 5.

1. Maintain the existing design and have the distribution networks manage the constraint issue outside of the DWGM, which may cause market deviations.
2. Expand the definition to allow distribution network constraints that impact distribution supply sources to be included within the operating schedule.
3. Introduce a new type of constraint for distribution connected facilities that is managed by the gas scheduling process.

3.4.2 Stakeholder feedback

Determination of market price

Stakeholders generally agreed that distribution connected facilities' constraints should be treated consistently with transmission injected facilities and excluded from the pricing schedule. However, some stakeholders expressed that there may need to be specific considerations given to distribution connected facilities.

APA, AGIG and ENGIE supported that distribution connected facilities should be treated consistently with transmission or other injection network constraints and should not be included in the pricing schedule.[83]

Origin also stated that applicable constraints for distribution connected facilities should be treated on an equivalent basis to existing supply-side constraints. This being including these constraints in the operating schedule and not the pricing schedule.[84]

Origin put forward that this approach would ensure that the costs associated with scheduling out of merit order injections and/or withdrawals to accommodate distribution connected facilities' constraints are allocated on a causer pays basis and not reflected in a higher ex-ante market price. This approach, in Origin's view, would support market transparency and likely improve AEMO's ability to manage gas quality in impacted distribution networks through the scheduling process. This may be important in the context of managing the aggregate impact of multiple injection facilities.[85]

AEMO considered that this issue is only relevant if distribution connected facilities are included, that is, scheduled, in the DWGM. Given the Commission's position above in section 3.2.4, this issue is relevant. AEMO gave three examples of constraint scenarios that would be likely to apply to distribution connected facilities:[86]

1. a facility-level constraint affecting the ability of the facility to inject into the market
2. a distribution constraint related to the capacity of the distribution network
3. a blending constraint required to ensure that gas in the distribution network remains within gas quality specification limits.

AEMO sees that the first scenario is analogous to a supply-demand point constraint in the current market, where these constraints are applied to facilities external to the transmission

83 Submissions to the consultation paper: APA, p. 29; AGIG, p. 3; ENGIE, p. 3.
84 Origin, submission to the consultation paper, p. 2.
85 Ibid.
86 AEMO, submission to the consultation paper, p. 7.

system and the constraints are therefore applied to both the pricing and operating schedule.[87] [88]

AEMO considers that this approach could be applied to distribution connected facilities, for example, if the facility has an operational issue that affects its injection capacity the facility operator would communicate this constraint to AEMO. AEMO would then apply the constraint to the facility injection meter.

In the second and third examples, AEMO refers to constraints that occur on a distribution system. AEMO considers that because distribution flows will not be scheduled by the market and participants will have limited ability to respond to distribution constraints through the DWGM, it may be the simplest option to apply this type of constraint to both schedules. This would be consistent with how external constraints are currently managed in the DWGM, including how facility flows are limited by their accreditation and their operating agreement with AEMO.[89]

Conversely, AEMO outlined that if these constraints are only applied in the operating schedule, then they would potentially create uplift charges and ancillary payments if higher-priced injections are scheduled in the operating schedule, required to offset the reduction in injections caused by the distribution constraint. The uplift charges that could be incurred due to this are not locational, so it would be unclear how this approach would provide a meaningful signal for participants to respond in an efficient manner.[90]

AEMO outlined that, in general, the rules could provide a high-level framework for constraints including rules around information flow with the *Gas scheduling procedures* used to specify the constraint scenarios and how the constraints are applied to the schedules.

AusNet agreed that in most cases that distribution connected facilities should be treated consistently with transmission injection facilities. However, AusNet noted that if distribution connected facilities are provided by distributors as a regulated or ancillary service or where the materiality of gas injections is less than 1 GJ there may need to be exemptions in the scheduling requirements.[91]

Alinta indicated its in-principle agreement to treat distribution connected facilities on an equivalent basis to transmission connected facilities but without further details could not confirm their position at this stage.[92]

Operating schedules

Stakeholders broadly agreed that the existing DWGM design should be maintained with distribution networks managing the constraint issues outside of the DWGM.

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87 *"AEMO may apply SDPCs to reflect contractual, physical and operating constraints for facilities that are external to the DTS to system injection points and system withdrawal points. These are applied to both pricing schedules and operating schedules."* AEMO, *Wholesale market gas scheduling procedures (Victoria)*, 31 March 2020.

88 Longford gas plant is an example of this type of facility.

89 AEMO, submission to the consultation paper, p. 7.

90 Ibid, p. 8

91 AusNet, submission to the consultation paper, p. 5.

92 Alinta, submission to the consultation paper, p. 4.

AEMO agreed and noted that as it is not proposed that flows in individual distribution systems will be scheduled by the market, distributors would need to manage constraints on a distribution connected supply source within their own networks. However, the distributors would need to, where appropriate, provide information to AEMO on the constraints to be applied to the distribution connected facilities.[93]

AEMO addressed that an important issue to resolve is who would be responsible for communicating the constraint to AEMO. As the constraint would not be applied to the distribution network itself AEMO would only need to understand the impact on net injections from the impacted distribution connected facility to allow for the constraint to be accurately reflected in the schedules. AEMO posed that the AEMC could create a 'heads of power' in the rules for a new constraint type, that would include information provisions with AEMO's procedures providing detail on how the constraint is managed and applied.[94]

Origin and AGL provided the same reasoning, as described above, where distribution connected facilities should be treated the same as existing supply-side constraints and included in the operating schedule.[95]

AGIG, on the other hand, did not have a clear preference for managing distribution connected facilities within the operating schedule.[96] APA also did not have a firm view on the issue but noted that, as far as possible, there should be competitive neutrality between transmission and distribution connected facilities. Additionally, APA pointed out that the impact of NGEs in the broader Victorian gas system will need to be considered if constraints are managed outside of the DWGM.[97]

ENGIE outlined that it would be preferable to avoid an approach that results in market deviations but noted if alternatives are unworkable then it may be necessary.[98]

Alinta did not support maintaining the existing market design on the grounds of transparency and equal treatment but did support expanding the operating schedule to include distribution constraints. Alinta could not comment on the compliance liability considerations without further details on the technical capability and expected uptake but outlined that compliance activities should be commensurate with the expected number and capability of the distribution connected facilities.[99]

3.4.3 Analysis

In analysing the issues presented for determining the market price and the operating schedule, the Commission considers that a solution needs to be flexible enough to account for innovation for the industry that is at its early stages.[100]

93 AEMO, submission to the consultation paper, p. 8.
94 Ibid.
95 Submissions to the consultation paper: Origin, p. 2; AGL, p. 2.
96 AGIG, submission to the consultation paper, p. 3.
97 APA, submission to the consultation paper, p. 29.
98 ENGIE, submission to the consultation paper, p. 3.
99 Alinta, submission to the consultation paper, p. 4.
100 The industry being facilities injecting directly into a distribution system.

AEMO, as the operator of the DTS, has a number of system operation and market operation functions. The Commission considers that determining constraints for DTS connected facilities falls under its system operator function. For facilities that connect at a distribution level, the Commission does not consider that AEMO should have its functions extended to determining any constraints, or constraint methodologies, for distribution connected facilities.

If AEMO was to have an active role in determining constraints for distribution connected facilities this would be equivalent to taking on a system operator function for the applicable DDS. This would have liability implications for how AEMO and the distributor if there was any breach of gas quality resulting from the mismanagement of a constraint.

Additionally, there are likely to be several local network conditions that need to be accounted for when determining appropriate constraints for distribution connected facilities. This information and network expertise would be best known by the distributor and the Commission does not consider it efficient for the distributor to have to pass network information to AEMO for the purpose of determining constraints.

Given this, the Commission considers that the distributor for the network where the distribution connected facility is located is the most appropriate party to determine any applicable constraints. This is in line with the *Victorian Gas Distribution System Code of Practice,* which has the distributor as the party ultimately responsible for managing the gas in its network and, as such, should have an operational role for any facility that connects to its network.

In determining and applying the constraints within the market the Commission recognises it needs to consider the timeframe imposed on AEMO to collate information from market participants, run its internal modelling for system security and DTS constraints, and publish the schedules to the market.

Using the 6 am schedule as an example of the timeframe AEMO is required to adhere to, market participants can submit bids and offers up until 4.59 am.[101] From 5.00 am until 6.00 am AEMO has to use all valid bids and offers to run the demand forecasting processes, conduct modelling necessary for system security or determining pipeline constraints, incorporate any facility constraints provided by the facility and produce and publish the schedule.

Given this, it is unlikely that AEMO would be able to provide the appropriate data to the distributor for them to determine any applicable constraint for the distribution connected facility and have the distributor communicate this constraint back to AEMO in a way that fits within the existing time frames.

The demand on the local declared distribution system will impact heavily on how much gas a distribution connected facility can inject, which is particularly relevant for facilities injecting natural gas equivalents. Using a hydrogen blend as an example, the blending limit may be a fixed percentage by volume.[102] This implies that to determine how much renewable gas can

101 See rule 211 of the NGR.

102 The blending limit may vary from network to network and will be determined by the relevant state's safety regulator.

be delivered into a distribution stream, the volume of withdrawals needs to be known. The direct relationship between demand and the ability for the facility to inject will be dependent on each individual facility's configuration, as well as the configuration of the distribution network it is connected to.

The exact level of hydrogen or any other renewable gas will be determined through specific local legislation.

AGIG's Hydrogen Park Murray Valley project is likely going to be directly injecting hydrogen into the distribution system, with blending likely occurring with the gas being withdrawn from the DTS into the DDS.[103] The AEMC understands that the facility has not reached a final investment decision and the exact configuration of how the facility will inject into the DDS may change. However, using the injection method described above as an example, the facility will be very dependent on the overall daily demand as well as the demand on the network throughout the day.

3.4.4 Commission's position

In relation to the pricing schedule, there are two issues to be resolved:

1. whether supply-side distribution constraints should be taken into account (thereby taking a different approach to supply-side transmission constraints) and
2. who should determine and apply supply point constraints, including those that may be required to maintain blending limits.

In relation to the operating schedule, the main question is who should determine and apply supply point constraints, including those that may be required to maintain blending limits.

To address the issues surrounding the determination and application of supply point constraints for distribution connected facilities, the Commission has decided to implement an operational coordination arrangement between AEMO and any applicable distributor.

This arrangement assigns the responsibility to the distributor to determine any applicable constraints for any distribution connected facility injecting gas on its network. With AEMO then applying these constraints in either the operating schedule only or both the operating and pricing schedule. To make this arrangement operationally feasible, a new data-sharing arrangement is required between AEMO and the distributor.

The Commission notes that this approach differs from the proposed solution in the rule change request, where it was proposed that distribution network constraints are not included in the pricing schedule.

Operational coordination between AEMO and applicable distributors

The Commission has made a draft rule to coordinate the management of constraints for distribution connected facilities between the distributors and AEMO.[104] This approach

103 AEMC conversations with AGIG's staff.

104 See rule 317A of the draft rule.

addresses the problem explained above of the timings AEMO must work within and the efficient allocation of responsibility between AEMO and the distributors.

The rest of this section explains how this arrangement between AEMO and the distributors will work.

Creating a methodology

The distributor, where a distribution connected facility connects, is responsible for determining if there is a need to apply a constraint to the connected facility. If the need for a constraint is identified, then the distributor must work with the impacted facility to determine an appropriate course of action.

This course of action will be outlined in a methodology prepared by the distributor, which will specify the inputs, system conditions or anything else the distributor considers reasonable to take account for when determining these constraints. The process for creating the methodologies is outlined in rule 317B of the draft rule, which specifies that:

- the *distribution operation*s *coordination procedures* must set out the arrangements for a distributor to submit a methodology to determine one or more supply point constraints that:[105]
  - apply to an injection point on a distributors network
  - the distributor considers are reasonably required for the operation of its distribution network; and
  - are to be taken into account by AEMO with respect to the economic principles within the operating or pricing schedules.

This methodology will also be subject to the same economic principles AEMO is required to follow in determining the operating and pricing schedules, to ensure that the methodology delivers efficient outcomes.

Dealing with the different types of distribution constraints

Distribution constraints can be fixed (for example a maximum injection limit) or vary with system conditions. In either case, the distributor is responsible for determining these constraints.

Where the constraint is fixed in nature, then AEMO applies this through the standard scheduling process. Where the constraint may vary with system conditions, AEMO will assess the methodology provided by the distributor to ensure that it is technically feasible for AEMO to apply through the schedules. In assessing the methodology, AEMO will test if the methodology imposes an unreasonable cost on AEMO to implement within the scheduling process.[106]

Where AEMO must apply the supplied methodology, AEMO may require data from the distributor. This will be implemented through new data-sharing provisions, as outlined in rule 317A of the draft rule. These provisions are outlined in further detail below.

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105 The *distribution operational coordination procedures* are required as part of Rule 317A of the draft rule.

106 See rule 317B of the draft rule.

- AEMO has the discretion to set out which schedule the constraint is applied to, that is, either only the operating schedule or both the operating and pricing schedules. How AEMO applies these constraints will be subject to the existing obligations under rules 215(1)(c1) and 221(3)(f1) of the NGR for the operating and pricing schedules respectively.
- Where a facility-related constraint arises on an ad hoc basis, such as facility maintenance or an unexpected outage, the distributor needs to communicate with AEMO and AEMO will then apply the constraint in scheduling in the same way as these constraints are managed for DTS-connected facilities.

Because AEMO will be running the operating schedule, the Commission considers it is appropriate for AEMO to apply the constraints, or constraint methodologies provided by distributors, in determining the operating and pricing schedules. The Commission sees that this process fits within the existing scheduling time frames imposed on AEMO for creating and publishing the operating and pricing schedules, as outlined in section 3.4.3.

Curtailment

Given the responsibility of distributors to manage gas quality on their network and the variable nature of distribution network gas flows, the Commission has included powers for the distributor to curtail gas injections into their network. In making the decision to curtail any gas injections the distributor must do so:[107]

- in accordance with the terms and conditions of its access arrangement
- in circumstances where it is permitted by law; or
- in order to mitigate or avoid threats to the reliability of the gas supply, security of their network or public safety.

In the event that a facility is curtailed by the distributor, this information will be conveyed back to AEMO, who will inform the market and make any necessary changes to the current schedules. The process for this sharing of information is expected to be developed through the new data sharing provisions between AEMO and distributors, described in further detail below. The Commission reasonably expects that any variability in a facility's ability to inject will be dealt with through the scheduling process but considers that curtailment is an important tool that distributors should have available.

The approach outlined above should be flexible enough to account for AGIG's currently proposed facility in the Albury-Wodonga network, as well as other future configurations of distribution connected facilities.

Data sharing provisions

For this approach to be operationally feasible the Commission considers that there needs to be appropriate data sharing arrangements between the distributor and AEMO. These arrangements were also mentioned as part of the Commission's decision in section 3.3.4.

107 See rule 317C of the draft rule.

The data that is required from either party, as well as the manner in which it should be delivered, is likely to be dependent on each facility that connects to a DDS. From this, the Commission has implemented high-level data sharing principles in the rules to allow for the exact information and how it should be delivered to be worked out between AEMO and the distributor.

It is important to note that these data-sharing agreements within the NGR do not form an obligation for AEMO or the distributor to create or install equipment that provides data to either party. The data-sharing agreement is aimed at making reasonably required data that is already produced by either party available to each other for the purposes of operating their respective networks and the market as a whole. The exact drafting of these principles can be found in the new clause added in rule 317A of the draft rule.

3.5 Capacity certificates

The AEMC made a final rule on 12 March 2020 to retire the current instruments of authorised maximum daily quantity (AMDQ) and AMDQ credit certificates (AMDQ cc) with a new capacity certificates regime to begin at the commencement of the next DTS access arrangement period on 1 January 2023.[108]

The Victorian DTS is the only gas transmission system operating under a market carriage model in eastern Australia which means market participants cannot contract for firm capacity on a pipeline. This gives them limited incentive to underwrite capacity as other market participants may 'free-ride' by gaining access to that capacity through the DWGM contract carriage model. The current AMDQ regime provides market participants with physical access rights and financial rights. The physical access rights refer to injection and withdrawal tie-breaking rights and the financial rights refer to partially hedging against congestion uplift charges.

The current regime is complex which makes it difficult for new entrants to understand and use AMDQ. It also includes restrictions to trading AMDQ, does not provide firm capacity rights which reduces the incentive for market-led investment, and conservatively calculates capacity as AMDQ are released for five years or in perpetuity.

The new capacity certificates regime consists of:

- entry capacity certificates that provide injection tie-breaking benefits
- exit capacity certificates that provide withdrawal tie-breaking benefits

The changes do not affect current holders of AMDQ as these expire before the commencement of the new regime on 1 January 2023 and current holders will not receive spill-over rights to capacity certificates. This is intended to ensure a level playing field for existing and new market participants.

The allocation of capacity certificates will primarily occur through capacity certificate auctions run by AEMO. Capacity certificates are for entry or exit within a zone, and under division 4,

108 AEMC, *DWGM improvement to AMDQ regime*, final determination, 12 March 2020.

subdivision 3 of the NGR, AEMO is required to determine the capacity certificates zones and publish these in a register.[109]

AEMO is also required to conduct system capability modelling at least annually to inform AEMO's determination of the types and amounts of capacity certificates available at each auction.[110]

AEMO published its *Impact and implementation report* on 12 January 2022 which determined the draft capacity certificate zones in the DTS.[111] The Northern Zone, South West Zone and Gippsland Zone include both entry and exit capacity certificates while the Melbourne Zone is for entry certificates only.

3.5.1 Proponent's view

The current rules on capacity certificates do not contemplate injections into distribution networks. The proponent's view is that distribution connected facilities should be allocated capacity certificates for tie-breaking rights to ensure they are not preferentially de-scheduled in some circumstances.

3.5.2 Stakeholder views

The majority of stakeholders that submitted views on this topic agreed that distribution connected facilities should be able to participate in capacity certificate auctions.[112] APA and Origin noted the importance of competitive neutrality between transmission and distribution connected facilities so that new facilities can participate on an equivalent basis to other market participants.[113]

Alinta stated that as a general rule of thumb all transmission and distribution connected facilities should be treated equally, however grandfathering and tie-breaking implications of injections closer to consumers should be examined further to ensure the rights of existing incumbents are fairly but appropriately protected.[114]

The Commission notes that this concern has been previously addressed in the *DWGM improvement to AMDQ regime final determination* published in March 2020 to replace AMDQ with the capacity certificates regime. The new regime does not affect current holders of AMDQ cc as the majority of these expire before the commencement of the new regime on 1 January 2023. In addition, the final rule did not convert any legacy holdings of authorised MDQ into capacity certificates in order to ensure a level playing field for existing and new market participants.[115]

109 See rules 327A and 327B of the National Gas Amendment (DWGM improvement to AMDQ regime) Rule 2020 No. 1.
110 See rule 328 of the National Gas Amendment (DWGM improvement to AMDQ regime) Rule 2020 No. 1.
111 AEMO, *DWGM enhancement — Capacity certificate zone register*, impact and implementation report, 12 January 2022.
112 Consultation paper submissions: AEMO, p. 8; AGIG, p. 3; Alinta, p. 4; AusNet, p. 5; Origin, p. 2; ENGIE, p. 3, APA, p. 29.
113 Consultation paper submissions: Origin, p. 2; APA, p. 29.
114 Alinta, submission to the consultation paper, p. 4.
115 AEMC, *DWGM improvement to AMDQ regime*, final determination, 12 March 2020.

AusNet stated that in principle it supports capacity certificates being extended to distribution connected facilities, however until the scale of production from distribution facilities becomes material the implementation costs of doing so are not warranted.[116]

AEMO considered that the industry is best placed to comment on whether capacity certificates should be extended to distribution connected facilities for them to manage market risk. However, AEMO's preliminary modelling indicates that distribution networks could be incorporated into the capacity zonal model relatively easily in most regions. AEMO envisages the first proposed distribution connected facility in Victoria, the Hydrogen Park Murray Valley project in Albury-Wodonga, could be incorporated into the proposed Northern Zone. The distribution supply would effectively impact the transmission network as reduced locational demand.[117]

3.5.3 Analysis

As noted in section 3.1.4 and section 3.2.4, the Commission has made a draft rule to include distribution connected facilities as market participants in the DWGM. From this draft rule, they will automatically be allowed to participate in capacity certificate auctions as the auctions are open to all market participants.[118] This may include the facility itself, retailers, traders or market customers that contract directly with the facility.

The Commission considers that the simplest solution is for AEMO to conduct its system capability modelling for entry and exit capacity certificate zones in the DTS as currently planned, with distribution injections being treated as reduced locational demand. This would avoid the complexity of modelling capacity in distribution zones when the market for distribution injection facilities is still in its early stages.

Overall demand for gas is not expected to alter due to the introduction of distribution connected facilities. Therefore, the total amount of capacity certificates available for a zone in the DTS will remain unchanged with the introduction of distribution injections. The only difference will be that a wider range of participants will have access to the same amount of capacity certificates.

AEMO considered the future introduction of distribution connected facilities in its *DWGM enhancement capacity certificates impact and implementation report*, predicting that these facilities will likely connect to the Melbourne Inner Ring Main.[119] AEMO outlined that capacity from the Inner Ring Main would be included in the Melbourne Entry Zone. It originally considered not including a Melbourne Entry Zone and instead including this capacity as part of the Gippsland Entry Zone. Part of the reason for AEMO's final decision to create a Melbourne Entry Zone, was the potential introduction of distribution connected facilities to the Melbourne Inner Ring Main. If this zone was not created, AEMO expected that the Gippsland Entry Zone would require splitting in the future.[120]

116 AusNet, submission to the consultation paper, p. 5.
117 AEMO, submission to the consultation paper, p. 8.
118 AEMC, *DWGM improvement to AMDQ regime*, final determination, 12 March 2020.
119 The Melbourne Inner Ring Main is a pipeline loop from Dandenong to Brooklyn and Keon Park.
120 AEMO, *DWGM enhancement — Capacity certificate zone register*, 12 January 2022.

3.5.4 Commission's position

The Commission's position is to make a draft rule which requires distribution injection points to be allocated to capacity certificate zones.[121] The distribution injection points must be allocated to entry capacity certificates zones.[122]

Other consequential changes to the provisions dealing with capacity certificates replace the term system injection points with the new term market injections points. Market injection points refer to a system injection point or a DDS injection point or both.[123]

121 See rule 327B(1A) of the draft rule.
122 See rule 327B(4) of the draft rule.
123 See the definition of market injection point in rule 200 of the draft rule.

4 MARKET OUTCOMES

This chapter covers issues related to market outcomes, such as title, custody and risk; participant compensation fund; allocations and determination of fees payable to AEMO and default notices and market suspension.

This chapter outlines:

- each of the issues outlined above and in the consultation paper
- stakeholder feedback to these issues
- the Commission's analysis of the issues
- the Commission's position on the issues.

4.1 Title, custody and risk

The NGL authorises AEMO to establish rules for determining the ownership of gas in the DTS.[124] AEMO's *Wholesale gas market ownership rules (Victoria)* establishes that title of gas withdrawn from the DTS passes from the injecting market participant to the withdrawing market participant immediately prior to withdrawal.[125] Title transfers "in the quantities that each market participant is treated to have injected or withdraw" under the applicable provisions in the rules.[126]

Currently, the calculations of title transfers, settlements and transmission use of system (TUoS) charges utilise the same data.[127]

Box 2 below provides an overview of the settlements and TUoS processes.

BOX 2: SETTLEMENT AND TUOS PROCESSES

Settlements

The settlement process involves determining actual imbalances, deviations, trading amounts and settlement amounts in respect of market participants who trade in the market.[a] AEMO facilitates the billing and settlement of transactions between market participants.[b]

As part of the settlement process, AEMO must determine each market participant's scheduled imbalance and deviation.[a]

A market participant's scheduled imbalance refers to the sum of withdrawals scheduled for controllable quantities and demand forecasts less the sum of the scheduled injections as determined by the operating schedule.[c]

124 See section 91BO of the NGL.
125 AEMO, *Wholesale gas market ownership rules (Victoria)*, July 2012, p. 5.
126 Ibid.
127 TUoS charges reflect the cost of delivering gas from injection points to withdrawal points in the DTS.

- scheduled injections include gas injected into the declared transmission system in accordance with bids.[d]

A market participant's deviation refers to a quantity of gas that is the actual imbalance less the scheduled imbalance in a scheduling interval.[c]

- actual imbalance refers to the sum of the adjusted withdrawals less the sum of actual injections.[c]
  - Adjusted withdrawals include net adjusted withdrawals at system withdrawal points and net adjusted withdrawals at distribution delivery points.[e]
  - A market participant's actual imbalance must also be adjusted to consider unaccounted for gas.[f]
  - Actual injections refer to injections by a market participant at system injection points excluding re-injections from distribution pipelines.[c]

TUoS

There are over 120 system withdrawal points in the DTS that allow gas to flow from the DTS into the Victorian distribution networks, to large gas customers, into storage facilities, or to other transmission pipelines. These are supplied by DTS system injection points that allow gas to flow from production fields and plants, storage facilities, and other transmission pipelines.

Each market participant is required to have a valid agreement with the DTS service provider that includes payment of TUoS charges to the DTS.[g] Given that all the gas that reaches a retailer's end-users must have passed through the DTS, retailers pay TUoS based on how much gas was is withdrawn from the DTS.

Source: [a] See rule 234 of NGR.
[b] See rule 232 of NGR.
[c] See rule 200 of NGR.
[d] See rule 206 of NGR.
[e] See rule 235(11) of NGR.
[f] See rule 232(8) of NGR.
[g] See rule 327 of NGR.

Custody, control and risk of loss gas

Once the gas is injected into the DTS, custody of gas passes to AEMO to determine the time and place to transfer the gas.[128] AEMO also has the right to co-mingle the injected gas with other gas in the DTS, which means that each market participant is taken to accept that the gas delivered to it at a system withdrawal point may not be the same gas that the market participant injected, or tendered for injection, into the DTS at a system injection point.

4.1.1 Proponent's view

The proponent's view on title, custody and risk of loss gas focused on arrangements relating to co-mingling provisions and whether these need to be expanded to account for DDS injections.

128 See rule 220 of the NGR.

Distribution connected facilities may inject gas that is a different composition to gas that is already in a DDS. Given this, the proponent has raised that the rules may need to contemplate the co-mingling of gas injected at the distribution level.[129] Additionally, the proponent outlined that further investigation is required to understand if existing rules or legislation already adequately address blending, custody and title within a DDS.[130]

4.1.2 Stakeholder views

In response to the consultation paper, the majority of stakeholders expressed support for changing the rules to manage the title of injections within the distribution system.[131]

Most of these stakeholders suggested that the rules need to change because they only cover title, custody and risk of loss in the DTS. However, AEMO and Alinta also called for further investigation and research.[132]

AEMO recommended further investigation on the interactions between establishing and transferring title and retail and wholesale market mechanisms, such as allocations.[133] Alinta outlined that a series of technical boundaries are necessary to confirm the steps associated with blended gases that are produced, traded, stored and used in the DWGM.[134]

Origin stated that the AEMC should clarify whether the title and custody of gas injected from distribution connected facilities reside with individual DDS service providers, and if so, whether an equivalent version of rule 220(1) of the NGR would need to apply to allow AEMO to give effect to any transfer of title through the scheduling process.[135]

Origin also noted that a detailed assessment is needed to see if the existing rules adequately cover the title of injections within the distribution system.[136] ENGIE also recommended assessing whether the current rules already cover title, custody and risk in the distribution system sufficiently. If they do not, ENGIE is supportive of changing the rules accordingly.[137]

Most stakeholders responded in support of the consultation paper's question on the co-mingling of gas within a distribution system.[138]

AGIG, Alinta and AusNet were supportive of changes to the rules that contemplate co-mingling within the DDS and suggested elements that the DDS co-mingling rules should consider. AGIG noted that it would be reasonable to expand the existing co-mingling provisions or include a similar new provision, that confirms gas consumed by an end user is not necessarily the gas which is injected into the DDS.[139]

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129 Rule change request, p. 6.
130 Rule change request, p. 5.
131 Submissions to consultation paper: AGIG, p. 6; AusNet, p. 6; Alinta, p. 5; AEMO, p. 9.
132 Ibid.
133 AEMO, submission to the consultation paper, p. 9.
134 Alinta, submission to the consultation paper, p. 5.
135 Origin, submission to the consultation paper, p. 3.
136 Ibid.
137 ENGIE, submission to the consultation paper, p. 6.
138 Submissions to consultation paper: AGIG, p. 6; AusNet, p. 6; ENGIE, p. 6; Alinta, p. 5.
139 AGIG, submission to the consultation paper, p. 6.

Alinta stated that co-mingling and the introduction of blended products will change the chemical make up of gas within the distribution system which can impact heating values and retail pricing to commercial and industrial customers and residential customers.[140]

AusNet commented that specific updates may be required to manage co-mingling rules for natural gas equivalent blends in the situation of lower energy blended gas from one area of the DTS going to another DTS or non-DTS area where other retailers have title for the gas.[141]

AEMO considered that distributors are best placed to comment on whether existing arrangements are adequate or whether equivalent rules are required for distribution systems.[142]

AGL commented that currently, the industry does not have sufficient experience and information to consider how the rules may be amended to facilitate the co-mingling of gas beyond current gas specifications.[143]

4.1.3 Analysis

The current framework does not address the transfer of title when it is injected into a declared distribution system. The introduction of distribution connected facilities requires amendments to the rules.

The AEMC considered different approaches to address DDS title transfers.

1. Expand AEMO's role as the system operator of the DTS and DDS
2. Create a new rule that replicates AEMO's ownership rules for the DDS.

The AEMC understands that, subject to AEMO having metering data for DDS injections, the DTS title transfer arrangements can be utilised to deliver the right settlement outcomes regardless of the point of injection.

Expand AEMO's role as the system operator of the DTS and DDS

Expanding AEMO's role would allow AEMO to expand its *Wholesale gas market ownership rules (Victoria)* to establish DDS title transfer rules. This approach creates a single framework for the DTS and DDS title transfers.

However, this approach would require a law change to expand AEMO's role beyond the DTS. AEMO's system operator role is unique to the DTS. Expanding this role to enable AEMO to create DDS title transfer provisions creates inconsistencies between AEMO's role in the DTS and its role in the DDS.

Create a new rule that replicates AEMO's ownership rules in the DDS

An alternative approach explored for DDS title transfers was creating a new rule that deals with title transfers for the DDS. This approach maintains cohesiveness between the title

140 Alinta, submission to the consultation paper, p. 5.
141 AusNet, submission to the consultation paper, p. 6.
142 AEMO, submission to the consultation paper, p. 9.
143 AGL, submission to the consultation paper, p. 2.

transfer arrangements in the DTS and DDS without expanding AEMO's role as the DTS system operator.

The Commission notes that this approach is also consistent with the approach taken in the STTM where title transfer arrangements sit within the rules.[144]

Settlement considerations

The introduction of DDS injections affects some of the elements in the settlement process including the calculations of scheduled imbalance and deviations.

Changes to these sections have been addressed by minor amendments to the definitions used in the settlement rules.[145] More detail is provided in the appendix.

TUoS considerations

Currently, all the gas that a retailer's end-users receive is exclusively supplied from DTS injections. The TUoS charges a retailer pays reflects the amount of gas its end-users receive.

The introduction of distribution connected facilities means that not all the gas that a retailer's end-users receive will be supplied exclusively from DTS injections and adjustments to the figures used for TUoS calculations will be required to reflect this. The amount of TUoS charges a retailer pays should reflect only the use of the DTS and should not result in payment in respect of DDS allocated to the retailer.

AEMO presented different options for the methodology that can be used to calculate TUoS payments to take into account DDS injections. More detail is provided in the appendix.

However, the Commission notes that details on the calculation of TUoS payments sit outside of the rules.

Custody, control and risk of loss gas

Custody, control and risk of gas injected into the DDS are sufficiently addressed in the distributor's access arrangements. No amendments are required to the current custody, control and risk of gas arrangements in the NGR to account for DDS injections.

4.1.4 Commission's position

The Commission's position is to create a new rule that provides for the allocation of title in the DDS.[146]

This provides a cohesive framework for title transfers in the DDS without expanding AEMO's role as the DTS system operator.

As explained above, while DTS title transfer, settlement and TUoS calculations currently use the same figures, separate figures will need to be used when DDS injections are included in bidding and settlement. As a result, AEMO may need to adjust the *Wholesale gas market*

144 See rule 418 of NGR.
145 Division 2, subdivision 6 of the NGR.
146 See rule 220A of the draft rule.

ownership rules (Victoria) arrangements utilised by AEMO to calculate TUoS to deliver the right TUoS and DTS title transfer outcomes.

Changes to the *Wholesale gas market ownership rules (Victoria)* have been addressed in the draft rule in the transitional provisions. Changes to the TUoS calculation arrangements will need to be addressed between AEMO and APA as the service provider for the DTS.

Minor changes to the definitions used in the settlement rules include changes to:

- rule 206 to reflect that AEMO must schedule injections into the DTS, into the DDS at a DDS injection point and withdrawals from the DTS in accordance with bids, and rule 208 to extend demand forecasts to include demand from DDS (to the extent not included in demand forecasts for the DTS). These changes will mean that DDS injections will be accounted for in the calculation of a market participant's scheduled imbalance.
- the definition of 'actual injections' to refer to a new term, 'market injection points'. This new term will cover system injection points and DDS injection points. This change means that DDS injections will be accounted for in the calculation of a market participant's deviation.

4.2 Participant compensation fund

The participant compensation fund is managed by AEMO and is used to pay compensation to market participants for scheduling errors as determined by the Dispute Resolution Panel.[147]

Each market participant who withdraws gas, or whose customers withdraw gas from the DTS is required to pay into this fund. The requirement for funds from each participant is based on a flat rate of $/GJ for each gigajoule of gas withdrawn from the DTS.[148] AEMO deposits the participant compensation fund amounts paid by market participants into the participant compensation fund.[149]

The funding requirement for the DWGM's participant compensation fund for each financial year is the lesser of:

- $500,000
- $1,000,000 minus the amount AEMO reasonably expects to be the balance at the end of the relevant financial year.[150]

Specific elements must be determined in the event of an unintended scheduling result according to the dispute resolution processes:

- the market participants who are to receive compensation
- the amount of compensation each market participant is to receive
- the manner and timing of the payments from the participant compensation fund.[151]

147 See rule 226 of NGR.
148 AEMO, *AEMO Gas market fee schedule 2021-22*, November 2021, p. 1.
149 See rule 225 of NGR.
150 See rule 225 of NGR.
151 See rule 226 of NGR.

When making compensation determinations, the Dispute Resolution Panel is limited in the aggregate amount of compensation that can be paid each year to market participants. The aggregate amount of compensation must not exceed the balance of the participant compensation fund at the time of the determination.[152]

4.2.1 Proponent's view

The injection of gas at the distribution level will reduce the amount of gas withdrawn from the DTS and as such will reduce the payments into the participant compensation fund.

The proponent identified two potential avenues to deal with this issue:[153]

1. Keep the existing framework where transmission usage pays for the participant compensation fund.
2. Expand the mechanism to include all users from a declared network, which would capture the gas injected at a distribution level.

The proponent's preferred solution is to ensure that all producers are included as part of the participant compensation fund and as such the cost recovery mechanism should be expanded to include all users from a declared network.

4.2.2 Stakeholder views

Most stakeholders were supportive of expanding the participant compensation fund cost recovery mechanism to include distribution connected facilities.[154]

For example, Origin and Alinta considered that expanding the cost recovery mechanism would ensure costs are recovered equitably.[155] Alinta recommended that the PCF should consider a producer injecting into a distribution system is equivalently to a producer on the DTS.[156]

AEMO commented that if distribution connected facilities are included in the market then expanding the participant compensation fund cost recovery mechanism to include distribution connected facilities should ensure participants injecting at these facilities are eligible.[157]

AusNet was supportive of expanding the participant compensation fund mechanism subject to a cost-benefit assessment, noting that until the scale of production from distribution connected facilities becomes material, the implementation costs of expanding the mechanism are not warranted.[158]

152 See rule 227 of NGR.
153 Rule change request, p. 8.
154 Submissions to consultation paper: AEMO, p. 9; Origin, p. 3; Alinta, p. 5; APA, p. 30, AusNet, p. 6.
155 Submissions to consultation paper: Origin, p. 3; Alinta, p. 5.
156 Alinta, submission to the consultation paper, p. 5.
157 AEMO, submission to the consultation paper, p. 9.
158 AusNet, submission to the consultation paper, p. 6.

AGIG and ENGIE opposed expanding the cost recovery mechanism arguing that including distribution connected facilities can stifle the development of hydrogen and renewable gas production facilities given the infancy of the industry.[159]

4.2.3 Analysis

As noted above in section 4.2, the purpose of the participant compensation fund is to pay compensation to market participants for scheduling errors.

The Commission understands that the DWGM participant compensation fund's contribution has remained at $0/GJ withdrawn for the last 10 years. Currently, the fund has $3,802,000.[160]

AEMO informed that there have only been two occasions where the DWGM's participant compensation fund was utilised. These occasions occurred in 2001 and 2008.

Market participants that withdraw gas from the DTS are responsible for contributing to the participant compensation fund. These market participants are likely to be retailers given their interaction with the DWGM.

As noted above in section 4.2.1, the introduction of distribution connected facilities can reduce the amount of gas withdrawn from the DTS. Expanding rule 225 to include distribution withdrawals accounts for this and ensures that costs are recovered across the DTS and DDS.

Given that the fee payable to the DWGM's participant compensation fund is based on the quantity of gas withdrawn, distribution connected facilities would only need to pay a small sum given their size.

4.2.4 Commission's position

The Commission's position is to amend rule 225 to expand the participant compensation fund cost recovery mechanism to include all quantities of gas withdrawn from the DTS and DDS.

No changes were required to rules 226 and 227.

4.3 Allocations and the determination of fees payable to AEMO

Where gas is injected or withdrawn by more than one market participant at a single injection or delivery point, the appropriate quantities of gas must be allocated to each market participant for the purposes of settlement and fees. Currently, injection allocations quantities are only contemplated for gas injected into the DTS.

Rules 229 and 230 require market participants to appoint an allocation agent where there are multiple market participants injecting or withdrawing at delivery points or system points in the DTS.[161]

159 Submissions to consultation paper: ENGIE, p. 6; AGIG, p. 6.
160 AEMO, *AEMO Annual Report 2021*, p. 99.
161 See rules 229 and 230 of the NGR.

The allocation agent is responsible for determining the quantity of gas that is to be treated as injected into or withdrawn from the DTS by each of those market participants. For example, if four retailers have contracted for different quantities of gas being injected into the DTS at a single system point, the allocation agent will determine the quantity allocated to each retailer for the purposes of settlement and billing.

4.3.1 Proponent's view

The proponent recommended that injections into a DDS should be allocated to different market participants where multiple market participants inject at a single DDS injection point.[162] Two solutions were put forward:

1. Expanding the definition of what is allowed to be allocated to include injections into a DDS.
2. Treating injections into a DDS as negative demand rather than allocating it to multiple market participants.

The proponent preferred option one, to include distribution connected facilities within the allocation rules so that injections from these facilities can be incorporated in settlement and fee methodologies.

4.3.2 Stakeholder views

Stakeholders were supportive of distribution supply being included in the definition of what gas can be allocated.[163] A common reason mentioned was that it would be simpler to expand the definition rather than treat distribution gas supply as negative demand and revisit the current withdrawal allocation methodology.

For example, AEMO argued that if distribution gas supply is not included in the definition of what gas can be allocated, then an alternative fee framework would need to be considered. If the facilities are not market participants, costs associated with settlement and retail system changes would need to be recovered from participants on an equitable and cost-reflective basis.[164]

Alinta supported the expansion of the definition on the grounds of transparency, fairness and ease of implementation and noted the only reason it should not occur is if it would create a barrier to entry, such as excessive costs.[165]

Similarly, Origin, ENGIE and APA emphasised the importance of selecting the option with the simplest methodology. They see the least complex solution as treating injections into the transmission and distribution networks equally.[166]

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162 Rule change request, p. 6.
163 Consultation paper submissions: AEMO, p. 9; AGIG, p. 4; Alinta, p. 5; AusNet, p. 6; Origin, p. 3; ENGIE, p. 4; APA, p. 30.
164 AEMO, submission to the consultation paper, p. 9.
165 Alinta, submission to the consultation paper, p. 5.
166 Consultation paper submissions: Origin, p. 3; ENGIE, p. 4; APA, p. 30.

4.3.3 Analysis

Expanding rules 228, 229 and 230 to include distribution connected facilities creates consistency across the DTS and DDS.

Given that in section 3.2 a draft rule has been made to expand the current bidding and scheduling rules to include distribution connected facilities, these facilities should be subject to the same allocation rules as the other scheduled participants.

The Commission understands that this is the simplest solution. Including distribution injections within the requirement to allocate gas to multiple participants mirrors the current arrangements for transmission system injection points.

If distribution injections are not allocated and instead treated as negative demand, AEMO's withdrawal allocation methodology would need to undergo a significant redesign. The Commission understands that this is a more complex solution and would impact AEMO's methodology for determining settlement outcomes.

4.3.4 Commission's position

The Commission's position is to amend rules 228, 229 and 230 to enable gas injected into distribution networks to be allocated to multiple market participants.

- Rule 228 refers to the quantities of gas that require allocation, that is, injections into or withdrawals from the DTS.[167] The Commission has made a draft rule to include injections into a declared distribution system within the quantities of gas that must be determined using allocation where there is more than one market participant injecting gas at a distribution injection point.[168]
- Rule 229 refers to injection allocations and the Commission has made a draft rule which replaces references to system injection points with market injection points. The effect is to extend rule 229 to DDS injection points because the new term 'market injection point' encompasses both a system injection point (i.e. injection points on the DTS) and a DDS injection point.[169]
- Rule 230 refers to withdrawal allocations. The rule already requires allocation to be used for distribution delivery points where there are insufficient metering installations installed to enable AEMO to determine the quantity of gas withdrawn at a distribution delivery point by each market participant. However, there were some inconsistencies in the drafting and so the Commission has made a draft rule to clarify that allocation can be used both for withdrawals from the DTS and withdrawals from a DDS.[170]

167 See rule 228 of the NGR.
168 See rule 228 of the draft rule.
169 See definition of 'market injection point' in rule 200 of the draft rule.
170 See rule 230 of the draft rule.

4.4 Default notices and market suspension

Under the NGR several events can be classified as default events, including where a market participant fails to pay AEMO by the specified due date.[171]

Where a default event has occurred AEMO may issue a default notice, immediately suspend the participant or make claim to any credit support held in respect of the market participant.[172]

In issuing a default notice, the current rules give flexibility to AEMO in specifying the conditions applied to the market participant, however, the rules refer to gas withdrawn from or injected into a DTS.[173]

Where AEMO has issued a default notice and the affected market participant has failed to comply with the terms in the notice, AEMO must issue a suspension to the participant.[174] The conditions of suspension that AEMO can place on the market participant relate to the injection and withdrawal of gas from the DTS.[175]

4.4.1 Proponent's view

With the introduction of distribution connected facilities injecting gas, it is unclear if injection can be covered under the restrictions for a default notice and whether there are provisions for the suspension of a market participant.

The proponent suggested that the rules around default notices and market suspension be amended to include distribution connected facilities.[176]

4.4.2 Stakeholder views

In response to the consultation paper, the majority of stakeholders were supportive of expanding the rules to include distribution connected facilities for default notices.[177]

AGIG and APA recommended consistency in the default notice and market suspension rules if they are amended to include distribution connected facilities.[178]

AEMO suggested that the rules for default notices should be expanded if distribution connected facilities are scheduled. If distribution connected facilities are not scheduled, they will not have market exposure and can be excluded from the default notice rules.[179]

171 See rule 251(1) of the NGR for the full list of default events.
172 See rule 251(2) of the NGR.
173 See rule 259 of the NGR.
174 See rule 260(1) of the NGR.
175 See rule 260(2)(c) of the NGR.
176 Rule change request, p. 8.
177 Submissions to consultation paper: AEMO, p. 9; AGIG, p. 6; ENGIE, p. 6; Origin, p. 3; APA, p. 30.
178 Submissions to consultation paper: AGIG p. 6; APA, p. 30.
179 AEMO, submission to the consultation paper, p. 9.

4.4.3 Analysis

Given that in section 3.2 the Commission has made a draft rule has been made to expand the current bidding and scheduling rules to include distribution connected facilities, these facilities should be subject to the same default notice and market suspension rules as the other scheduled participants.

4.4.4 Commission's position

The Commission's position is to make a draft rule that expands rules 259 and 260.

Rule 259 includes provisions for AEMO to specify default notice conditions that are applied to the market participant and rule 260 specifies suspension notice conditions. In both cases, the conditions include but are not limited to restrictions relating to:

- injecting gas, or tendering gas for injection into the DTS
- withdrawing gas, or tendering gas for withdrawal from the DTS.

Rules 259 and 260 will be amended to include injections into the DDS and withdrawal from the DDS.

5 SYSTEM OPERATIONS

The issues surrounding system operations covered in this chapter relate to connection requirements and AEMO's powers of direction with regard to system security.

This chapter outlines:

- each of the issues outlined above and in the consultation paper
- stakeholder feedback to these issues
- the Commission's analysis of the issues
- the Commission's position on the issues.

5.1 Connections framework

Rules 267 to 277 of the NGR cover the connection process to the DTS. These rules include obligations on the declared transmission system service provider, AEMO and the connecting party through the connection process. An overview of these obligations is provided in this section.

Obligations of the DTS service provider

The declared transmission system service provider has a number of obligations concerning connections under the NGR:[180]

- receive and process applications for connections or modifications to an existing connection and enter into a connection agreement with the connected party
- ensure compliance with the NGR from connected parties
- consult with AEMO regarding the operation of the system and any security requirements of proposed connections into the DTS.

The DTS service provider must also consult with AEMO for proposed connections before the submission of the proposed connection agreement for approval by AEMO. For material changes to any information contained in or relevant to an application to connect that the DTS service provider becomes aware of, it must notify the connection applicant in writing of this change.

Once the proposed connection has been approved in principle by AEMO, the DTS service provider must make an offer to connect the connection applicant's pipeline or pipeline equipment to the DTS within 20 business days.[181]

AEMO's obligations

According to the rules, AEMO must review all proposed connections from a system operation and security perspective, establish the system operation and security standards and associated requirements for connections. In doing this AEMO must use reasonable

180 See rules 268 and 273 of the NGR.

181 Or such longer period as the DTS service provider and the connection applicant agree. See rule 273 of the NGR.

endeavours to comply with reasonable requirements from the connection applicant and the DTS service provider related to the commissioning of the connection equipment.[182]

The DTS service provider must submit details of the proposed connection requirements to AEMO, after which AEMO may accept or reject the connection based on its connection approval procedures. Currently, AEMO is only required to assess and approve connections to the DTS, with no specified requirement for DDS connections in the NGR or who is the responsible party for administering connections.

Obligations of connected parties

Rule 270 of the NGR states that each connected party to the DTS must ensure that all connection equipment complies with the requirements and conditions set out in the connection agreement with the DTS service provider. In addition to this agreement, connection applicants must:

- comply with reasonable requests from the DTS service provider in respect of the design requirements of connected equipment
- not make material modifications or additions to connected equipment without consent from the DTS service provider and AEMO
- provide load forecast information to the DTS service provider and AEMO
- allow the DTS service provider to commission connection equipment to the DTS
- notify the DTS service provider of any material change to the information in or relating to an application to connect.

Rule 267 identifies the connection agreements that are covered by the DTS connections framework. Connection agreements to the DTS after the commencement of the DWGM on 15 March 1999 are covered by the DTS connection framework. This arrangement does not alter the terms of connection agreements, contractual rights or obligations, or relieve the parties of contractual obligations that were made before this date.

5.1.1 Proponent's view

The proponent identified a range of options regarding the obligations of service providers, AEMO and connecting parties seeking a connection to the DDS.[183]

Obligations of the declared distribution system service providers

Connections into the DDS are currently not covered in Part 19 of the NGR.

The proponent identified two approaches regarding obligations of the declared distribution system service provider:[184]

1. expand rule 268 to include injection connections to a DDS
2. create new rules (e.g. 268A and 273A) to cover the obligations of a declared distribution system service provider.

182 See rules 269, 272, 275, 276 and 277 of the NGR.
183 Rule change request, p. 9.
184 Ibid.

The second option was the proponent's preferred solution regarding the obligations of the declared distribution system service provider. The new rules 268A and 273A would be specific to a declared distribution system service provider to clearly distinguish who is responsible and what they are responsible for.[185]

Obligations of AEMO assessing and approving connections

Currently, AEMO is only required to assess and approve connections to the DTS, with no specified requirement for DDS connections in the NGR or who is the responsible party for administering connections. To address this issue the proponent identified two possible options:

1. have AEMO play an active role in the assessment and approvals of distribution injection connections
2. have the process managed by the distributor with AEMO only being informed as a market operator to manage the registration and scheduling processes.

The proponent considered that the distributor is best placed to be the main facilitator of the connection process to their network, with AEMO involved for any market operation issues.

Obligations of connected parties

The obligations for connected and connecting applicants under the rules only cover connections to the DTS and the associated obligations for those parties. The proponent's identified approach and preferred solution regarding the obligations of connected parties was to amend the rules to include distribution connected facilities to ensure compliance with the requirements of the connection agreement.[186]

Application of the connections framework and potential legacy issues

The proponent also identified an issue regarding the application of the DTS connections framework. Connections under Division 3, Subdivision 1 of the NGR cover participants who connected into the DTS after 15 March 1999[187] and do not contemplate any facilities that would connect to the DDS. The proponent noted that there could be legacy issues with different requirements for different facilities if changes to the connection rules or procedures need to retrospectively apply to all existing connections.[188]

The proponent's identified approach and preferred solution regarding the application of the DTS connections framework was to amend rule 267 to cover distribution injections with transitional arrangements. The transitional arrangements would not come into effect immediately for existing connections and would acknowledge potential legacy issues. No draft transitional wording was provided with the rule change request.

185 Rule change request, p. 9.
186 Ibid.
187 Ibid.
188 Ibid.

5.1.2 Stakeholder views

Most stakeholders were supportive of extending the connection framework to include connections to the DDS.[189] AEMO suggested a consistent framework that reflects the different obligations of parties depending on whether the connecting applicant is connecting to the DTS or DDS.[190] Origin was in favour of expanding the DTS connection framework to include distribution injections, however, noted that changes should not materially impact connection agreements associated with existing facilities connected to the DTS.[191]

On the other hand, AGIG and ENGIE opposed extending the connection framework and noted that the DTS connection's framework should not be expanded as there may be technical issues with the connection of renewable gas facilities.[192]

Party responsible for assessing and approving connections into the distribution system

In response to the consultation paper, the majority of stakeholders pointed to the distributor as the party who should be responsible for assessing and approving connections into the DDS.[193] AEMO and AusNet noted that the distributor is the best suited to assess and approve connections to the DDS as the asset owner and operator.

AGL and APA pointed to AEMO as the party that should be responsible for assessing and approving connections into the DDS. APA suggested that the process for assessing and approving connections into the distribution system should be as consistent as possible with the process for transmission connections.[194]

The majority of stakeholders noted that the distributor is the most appropriate party to facilitate connections into a DDS and suggested that AEMO should not have an active role but should be informed on the DDS connection process.[195]

- AGIG and APA were of the view that AEMO should not have an active role in assessing and approving distribution connected facilities but should have visibility through the registration process and be informed as the market operator to manage registration and scheduling.[196]
- AEMO suggested that it should only be involved in receiving data, market registration and data connectivity.[197]
- AusNet and ENGIE mentioned that the distributor has the necessary information and understanding of the physical characteristics of their system to undertake the connection assessment and are the most appropriate party to do so.[198]

189 Stakeholders include AEMO, AGL, AusNet, APA and Origin.
190 AEMO, submission to the consultation paper, p. 10.
191 Origin, submission to the consultation paper, p. 3.
192 Consultation paper submissions: AGIG, p. 7; ENGIE, p. 7.
193 Stakeholders include AEMO, AGIG, AusNet and ENGIE.
194 APA, submission to the consultation paper, p. 31.
195 Stakeholders include AEMO, AusNet, AGIG, ENGIE and APA.
196 Consultation paper submissions: AGIG, p. 8; APA, p. 31.
197 AEMO, submission to the consultation paper, p. 10.
198 Consultation paper submissions: AusNet, p. 7; ENGIE, p. 7.

Origin was generally supportive of adopting an approach that is consistent with the existing framework applied to DTS connections where distributors are responsible for facilitating a distribution connected facility connection applications and AEMO is responsible for approving connections with regard to system operations and security issues.[199]

Stakeholders had diverse views regarding the obligations for distributors. AEMO, Alinta and APA suggested a consistent framework for DTS and DDS connections.

- Alinta suggested that obligations for distributors should mirror those for DTS service providers where it is possible.[200]
- AEMO mentioned that a framework for connection and registration would be beneficial. However, it would need to acknowledge that different parties would have different responsibilities depending on whether a distribution or transmission network is being connected to. If the rules provide the guidance for this high-level framework, the details could then sit within the *Wholesale market connection approval procedures (Victoria)*.[201]

However, AGIG argued that the draft interconnection rules of the NGR provide rights, responsibilities and obligations of the distributors which appears to be sufficient.[202]

Obligations of connected parties

In response to the consultation paper, the majority of stakeholders were supportive of expanding the rules to enforce compliance from distribution connected facilities with their connection agreements.[203]

- ENGIE noted that to the extent necessary to ensure a safe and secure gas system, the existing obligations should be applicable to distribution connected facilities.[204]
- APA argued that the rules for connection agreement compliance should be expanded to distribution connected facilities to ensure there is a level playing field.[205]

AGIG, on the other hand, suggested that the draft interconnection rules of the NGR provide rights, responsibilities and obligations of the connecting party which appears to be sufficient, with no further changes to Part 19 required.[206]

5.1.3 Analysis

Rules 267 to 277 of the NGR cover the connection process to the DTS. The connection process to the DDS is not addressed within Part 19 of the NGR. The AEMC considered different approaches to address DDS connections in the rules.

1. expand the DTS connection framework
2. utilise the *Pipeline interconnection principles*.

199 Origin, submission to the consultation paper, p. 3.
200 Alinta, submission to the consultation paper, p. 8.
201 AEMO, submission to the consultation paper, p. 11.
202 AGIG, submission to the consultation paper, p. 7.
203 Stakeholders include AEMO, AusNet, ENGIE, Origin, Alinta and APA.
204 ENGIE, submission to the consultation paper, p. 8.
205 APA, submission to the consultation paper, p. 31.
206 AGIG, submission to the consultation paper, p. 8.

Expand the DTS connection framework

Expanding the DTS connection framework would require expanding rules 267 to 277 of the NGR. This approach for DDS connections would create one framework within the rules for connections to the DTS and DDS.

However, due to AEMO's role as the DTS system operator, the current DTS connections framework includes unique obligations on AEMO, the DTS service provider and the connecting party.

The Commission notes that AEMO does not have a role as a system operator in the DDS. Expanding the DTS connections framework to include the DDS connection process would require specific carve-outs depending on whether a connecting party seeks to connect to the DTS or a DDS.

The current DTS framework also contains strict process and timing obligations on the DTS service providers and AEMO which reflect their respective roles in relation to those connections. At this stage, it is unclear what the process and timing will be for DDS connections. For example, the interaction with Energy Safe Victoria processes may need to be taken into account, as may connection obligations under the *Gas Distribution System Code of Practice* made by the Essential Services Commission and applicable to distributors in Victoria. The Commission considers that the *Pipeline interconnection principles* process allows a flexible framework for connection procedures to evolve as the industry develops.

Utilise the Pipeline interconnection principles

An alternative approach explored for DDS connections was using the *Pipeline interconnection principles* which form part of a draft legal package developed by Energy Senior Officials and that was published in September 2021.

The objective of the *Pipeline interconnection principles* is to create a consistent pipeline connection framework for all pipelines and provide broad requirements for service providers.[207]

The draft legal package that includes the *Pipeline interconnection principles* consultation stage has been finalised and is currently subject to Energy Ministers' approval and the South Australian regulatory amendment process. The new measures within the draft legal package are expected to take effect in 2022.[208]

Box 3 below provides an overview of the new *Pipeline interconnection principles*.

207 Energy Ministers, *Improving gas pipeline regulation Proposed legal package to give effect to the Decision Regulation Impact Statement,* consultation paper, September 2021, p. 39.

208 Ibid, p. 5.

BOX 3: PIPELINE INTERCONNECTION PRINCIPLES

In May 2021, Energy Ministers published the *Decision regulation impact statement, Options to improve gas pipeline Regulation (Decision RIS)*. Under the agreed reforms set out in the Decision RIS, service providers will be required to comply with the *Pipeline interconnection principles* set out in the NGR.

This is because, under the current gas regulatory framework, potential exercises of dynamic market power where service providers can block competition from other service providers are not effectively addressed. For example, scheme pipeline service providers are prohibited from preventing or hindering access. In contrast to scheme pipelines, non-scheme pipelines are not prohibited from preventing or hindering access.

The NGR amendments will insert a new Part 6 that will set out the *Pipeline interconnection principles*. The rules in this new part will provide for:

- Any person to interconnect with a pipeline where it is technically feasible, consistent with the safe and reliable operation of the pipeline and the person is prepared to fund the development of the interconnection in its entirety.
- A request to interconnect to be subject to the same negotiation framework and dispute resolution mechanism as that applying under the form of regulation the pipeline is subject to.
- The service provider to make sufficient information available to the interconnecting party to enable it to assess the likely availability of capacity to or from the interconnection point.
- The interconnecting party to have the option to build, operate and maintain the interconnection at its own costs, or have the existing service provider do so, subject to the following:
    - If the interconnecting party develops the interconnection, it must do so in accordance with good industry practice and comply with any relevant standards and legislation, and any reasonable technical, safety or reliability requirements required by the existing service provider.
    - If the service provider develops the interconnection, the interconnection fee it charges the interconnecting party must be based on the directly attributable cost of constructing, operating and maintaining the interconnection, including a rate of return calculated in accordance with:
        - for scheme pipelines: the applicable rate of return instrument; and
        - for non-scheme pipelines: a commercial rate of return that is commensurate with the prevailing conditions in the market for funds and reflects the risks the service provider faces in providing the interconnection services.
- Service providers to develop an interconnection policy, which will form part of the user access guide, and set out:

- the interconnection process from application through to the operation of the new interconnection
- the information to be included by the interconnecting party in its application and the information the interconnecting party and service provider are to provide each other during the interconnection process
- links to any of the service providers' policies that are relevant to a new interconnection
- any technical, safety and/or reliability principles or processes the service provider will use to assess an interconnection application; and
- how interconnection fees will be determined and recovered, which must be in accordance with the principles set out above.

Source: Energy Senior Officials, *Improving gas pipeline regulation - Proposed legal package to give effect to the Decision Regulation Impact Statement*, consultation paper, September 2021, pp. 39 - 41; Energy Senior Officials, *Options to improve gas pipeline regulation - regulation impact statement for decision*, May 2021, p. 7.

Application of the connections framework and potential legacy issues

The DTS connections framework currently only applies to connection agreements made after 15 March 1999.

The Commission investigated whether there are any connections that have yet not been modified since the inception of the DWGM.

AEMO was the only stakeholder that responded to the consultation question on whether the separation of connection agreements before 15 March 1999 with those made after still relevant within the NGR. AEMO indicated that there are no longer any facilities connected to the DTS that pre-date 15 March 1999 that have not had a modification.[209]

The AEMC requested APA to verify AEMO's understanding of the number of facilities with connection agreements pre-dating 15 March 1999. APA responded that there is one connection agreement that was executed before 15 March 1999.[210]

After further discussions with AEMO, the AEMC understands that this one connection has already been modified and the agreement is in the final stages of modification and is expected to be finalised prior to the implementation of the final rule.

5.1.4 Commission's position

Taking into consideration feedback provided by stakeholders through submissions and further analysis carried out by the AEMC, the Commission has made a draft rule that relies on the *Pipeline interconnection principles* as the DDS connections framework.

209 AEMO, submission to the consultation paper, p. 10.

210 APA correspondence with AEMC via email, 10 February 2022.

As highlighted by stakeholders, it is important to have a cohesive framework that acknowledges the different responsibilities of the parties involved in the connection process when a connecting party seeks to connect to the DTS or a DDS.

The Commission is of the view that the *Pipeline interconnection principles* will provide a consistent connection framework for all pipelines while providing flexibility to distributors while the industry develops.

This approach also maintains AEMO's role in assessing and approving connections limited to DTS connections. AEMO can request information from distribution connected facilities through the registration process for system operation and security purposes.

In addition, the Commission does not envisage any legacy issues with the current DTS connections framework, nor with the introduction of the new DDS connections framework, which is based on the *Pipeline interconnection principles*. Therefore, the draft rule removes the requirement that the DTS framework only applies to connections after 15 March 1999 by deleting rule 267.

The Commission acknowledges that it is not clear when the *Pipeline interconnection principles* will be included in the rules. However, it is highly unlikely, at this stage, that the timing will align with the final determination of this rule change.

The draft rule, therefore, incorporates a version of the *Pipeline interconnection principles*, based on the published draft rules for the pipelines package and taking into account matters considered as part of the Hydrogen Review. These are included as a transitional rule that will be in place until the *Pipeline interconnection principles* are included in the NGL and the NGR.

5.2 Threats and interventions

If conditions arise where AEMO reasonably considers that there is a threat to system security that is unlikely to subside without intervention, it must intervene taking any measures it believes is necessary to overcome the threat.

The rules give AEMO wide powers to maintain system security including requiring market participants to do any reasonable act or thing that AEMO believes necessary in the circumstances.[211] In the event of an intervention where AEMO requires a registered participant to inject gas into the DTS, that participant may claim compensation if it incurs a loss in doing so.[212]

The rules also do specifically mention the powers available to AEMO for DTS facilities to inject off-specification gas into the DTS if required.[213] With the inclusion of DDS connected injection facilities, it is unclear if the same powers for DTS facilities would be applicable. However, it is expected that the power for AEMO to direct a participant to do any reasonable act or thing would cover the injection of off-specification gas at the DDS level as well.

211 See rule 343(1)(e) of the NGR.
212 See rule 344(1) of the NGR.
213 See rule 343(1)(d) of the NGR.

5.2.1 Proponent's view

Where injection from a DDS connected facility could be directed by AEMO during an intervention, compensation claims would not be allowed given the current definitions in the NGR.

To address these issues the proponent considered two possible options:

1. Expand existing intervention powers in the NGR to allow AEMO to intervene by directing distribution connected facilities. Note some risks need to be explored here if the over-injection of hydrogen has safety implications.
2. Leave the rules as they are and do not allow AEMO to direct distribution connected supply facilities. Note this may create an inconsistency with 91BC which already contemplates AEMO directing any registered participant with regard to a DTS or DDS.

The proponent also indicated that AEMO's powers under the NGR should be consistent with the NGL, allowing AEMO to direct distribution connected facilities. This change would be in line with the existing powers of direction regarding the curtailment of distribution customers.[214]

The proponent did not specify any specific changes regarding compensation claims for DDS injections during intervention events. It is expected that these changes would need to be made to remain consistent with DTS facilities.

5.2.2 Stakeholder views

Expand AEMO's powers to be consistent with DTS connected facilities

Stakeholders were supportive of amending the NGR to give AEMO intervention powers to allow it to intervene by directing distribution connected facilities, in a manner that is consistent with the powers it currently has for the DTS.[215]

However, Alinta argued that, in expanding its powers, AEMO should be obligated to consult with stakeholders on how it intends to use its powers across each system and what tests and the process to justify actions will be implemented. This could be the subject of an AEMO Procedure and separate consultation process, with broader directions set out in the NGR.[216]

Ability to claim compensation for losses incurred for injections required during an intervention

Stakeholders were supportive of allowing distribution connected facilities to claim compensation for losses incurred for injections required during an intervention.[217]

Origin also noted that any gas quality/safety issues that could emerge as a result of AEMO directing the injection of blended gas could likely be more easily managed where AEMO has oversight of distribution connected facilities' gas quality standards and monitoring.[218]

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214 Rule change request, p. 10.
215 Submissions to consultation paper: AGIG, p. 7; ENGIE, p. 7; Alinta, p. 9; AEMO, p. 19.
216 Alinta, submission to the consultation paper, p. 9.
217 Submissions to consultation paper: AEMO, p. 19; AGIG, p. 7; ENGIE, p. 7; Origin, p. 4; Alinta, p. 9.
218 Origin, submission to the consultation paper, p. 4.

Alinta suggested the AEMC consider the probability of an intervention event when determining its position, as, at this stage, it is unclear how and how frequently this could happen.[219]

5.2.3 Analysis

AEMO's current powers of direction under section 91BC of the NGL already allows AEMO to give a written direction to registered participants in respect to the DTS or a DDS. AEMO noted that its procedures should be expanded as it is expected that these facilities will be subject to directions that AEMO may make under the NGL.[220]

The Commission is of the view that distribution connected facilities should be able to claim compensation for losses incurred for injections required during an intervention, consistent with market participants' ability to claim compensation under rule 237 if it incurs a loss as a direct result of injecting the gas into the DTS.

BOX 4: WHAT CONSTITUTES A SYSTEM SECURITY THREAT IN THE DWGM?

AEMO's *Wholesale market system security procedures* provide general principles applicable to the operation of the DTS in a way that averts or minimises threats to system security, but they do not cover every possible situation. Where a contingency is of such severity that it cannot be managed using the principles and strategies detailed in these procedures, AEMO may be required to implement other elements from the *Emergency Protocol*.

The procedure notes that AEMO aims to operate the DTS in a normal operating state, which is achieved when certain conditions are met. A threat to system security may eventuate if a normal operating cannot be maintained.

- *Notice of threat to system security:* under rule 341(1), if AEMO reasonably believes there is a threat to system security, it must provide Registered participants without delay details of that threat to system security
- *Responses to a threat to system security:* AEMO can respond by implementing various tools: market response, AEMO injecting out of merit order gas in the next operating schedule, publishing ad-hoc operating schedules, directing participants to inject or withdraw gas, curtailment.

AEMO also monitors some operational factors for the purposes of identifying any material deviation from plan or forecast that may cause a potential threat to system security: system pressures, gas flows, forecast and actual supply/demand balance, system and zonal linepack. From these indicators, AEMO determines whether the DTS is trending towards a threat to system security. If it does, an operational strategy to avert or manage the threat will be developed based on the results of computer simulations and operational experience.

Source: AEMO, *Wholesale market system security procedures.*

219 Alinta, submission to the consultation paper, p. 9.
220 AEMO, submission to the consultation paper, p. 19.

5.2.4 Commission's position

Taking into consideration feedback provided by stakeholders through submissions and further analysis carried out by the AEMC, the Commission has made a draft rule to include distribution connected facilities in the relevant rules related to threats and interventions.

The draft rule amends rules 344 of the NGR to read:

> (2) If AEMO intervenes under rule 343 to require a Registered participant who is not a Market Participant to inject gas into the declared transmission system **or a declared distribution system**, the Registered participant:
>
> (a) must be paid for the gas at the applicable market price as if the Registered participant were a Market Participant; and
>
> (b) must pay the declared transmission system service provider **or the Distributor** the tariff determined under the service provider's applicable access arrangement

The draft rule also amends rule 350 to include a declared distribution system with regard to registered participant claims in respect of the application of administered price cap.

The draft rule also requires AEMO to update its *Wholesale market system security procedures (Victoria)* to incorporate the final rule.

6 GAS QUALITY

The Commission considers that the rules relating to gas quality require a comprehensive review to ensure they are fit for purpose for the introduction of distribution connected facilities, and there are no inconsistencies between the transmission and distribution systems. This chapter details the current gas quality framework, stakeholders' views on amending the framework, and the analysis which informed the Commission's position.

6.1 Current arrangements

The DWGM gas quality framework is set out in the following rules of the NGR:

- rule 287 refers to gas quality standards
- rule 288 refers to gas quality monitoring
- rule 289 refers to off-specification gas.

Setting gas quality standards

The definition of standard gas quality specifications in rule 200 refers to the *Australian Standards (AS) 4564-2005*, as added to or otherwise modified by applicable legislation of the Commonwealth or State.[221]

The reference to legislation in the definition captures the *Gas Safety Act 1997 (Victoria)* which contains requirements to maintain gas quality and supply and the *Gas Safety (Gas Safety Case) Regulations 2018 (Victoria)* which contain requirements for testing the quality and odour of gas.[222]

AEMO's *Gas quality standard and monitoring guidelines* are not prescribed in the NGR, however, it acts as a practical centralised document for market participants to refer to.[223] The guidelines capture all requirements under the Australian Standards, Victorian legislation, and other physical asset requirements AEMO needs to ensure gas quality is on-specification in the DTS.

Responsibility for gas quality monitoring

The NGR gives AEMO responsibility for approving gas quality monitoring systems and related plans and specifying points on the DTS where gas quality monitoring systems must be installed by APA in its role as the service provider for the DTS.[224] This is consistent with AEMO's role as the DTS operator and its responsibilities with respect to gas quality under the *Gas Safety Act 1997 (Victoria).*

The NGR does not have any provisions on the responsibility for gas quality monitoring in the DDS. However, each distributor is responsible for ensuring gas quality is on-specification in its network according to the *Gas Safety Act (Victoria) 1997*.[225]

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221 See rule 200 of the NGR.
222 See Part 5, *Gas Safety (Gas Safety Case) Regulations*, 2018.
223 AEMO, *Gas quality standard and monitoring guidelines (Declared Transmission System)*, 6 October 2016.
224 See rule 288(1)(a) of the NGR.
225 Clause 33 of the *Gas Safety Act (Victoria)* 1997.

Off-specification gas

Rule 289 requires market participants to ensure that any gas it injects or tenders to inject into the DTS complies with the gas quality standards, and if it becomes aware that the gas does not comply with the standards it must notify AEMO.[226]

This rule also allows AEMO to accept the delivery of off-specification gas into the DTS if it meets certain requirements, such as being required to ensure the safety of the public or the safety, security or reliability of the DTS.[227]

6.2 Proponent's view

The proponent requested amendments to rules 287 and 288.

Setting gas quality standards

In its rule change request, the proponent recommended expanding AEMO's role to centrally set the standard which all connected parties must comply with, including at the distribution level.[228]

The proponent argued that this would be an efficient outcome rather than having different parties setting different standards which may create confusion for new parties wishing to connect.[229]

Responsibility for gas quality monitoring

The proponent identified three options for gas quality monitoring arrangements in distribution networks:

1. AEMO monitors gas quality at distribution injection points, sets the gas quality standards at the distribution level, and approves gas quality monitoring plans from distribution connected facilities.
2. Distributors monitor gas quality at distribution injection points, AEMO sets the gas quality standards, and distributors include how connected parties will comply with these standards in connection agreements.
3. Distributors monitor gas quality at distribution injection points and create their own injection standards through connection agreements with connected parties.

The proponent noted that option two was its preferred option, where distributors would be responsible for active monitoring given they are the distribution network operator and gas quality monitoring is a system operator function.[230]

By extension of this function, the proponent also recommended that distributors should be responsible for approving gas quality monitoring systems and related plans, in a similar

226 See rules 289(1) and 289(4) of the NGR.
227 See rule 289(5) of the NGR.
228 Rule change request, p. 7.
229 Ibid.
230 Ibid, pp. 7-8.

manner to AEMO's role in the DTS.[231] The proponent also indicated that Energy Safe Victoria should continue to play a compliance role through the gas safety case provisions.

6.3 Stakeholder views

6.3.1 Issues raised in the consultation paper

Responsibility for setting gas quality standards

Most stakeholders were of the view that there should be centrally set gas quality standards at both the transmission and distribution level, although not necessarily uniform standards across the two different systems. These stakeholders understood that AEMO currently sets the standards for the DTS and therefore considered AEMO as best placed to set the standards for the distribution level.[232]

AGIG and AusNet noted that while AEMO should set gas quality standards, distributors and connected parties should reach agreements as to how they comply with these standards through their connection agreements.[233]

ENGIE considered distributors as best placed to manage gas specification within their own networks.[234] APA did not have a firm view on who should be responsible.[235]

Appropriate gas quality standards instrument

Stakeholders agreed that AEMO's guidelines or procedures are the appropriate instruments to set out gas quality standards for both the transmission and distribution systems.[236] A shared view was that the NGR should make high-level references to gas quality standards and monitoring requirements, but the details should be left to AEMO's guidelines or procedures as they are easier to amend and refine over time as the needs of different gases evolve.

AEMO argued that the most efficient outcome would be to have a single Victorian gas quality standard covering all distribution networks and transmission networks as this would provide a single transparent standard for anyone wanting to connect to either the transmission or distribution network.[237]

AEMO proposed that a procedure be created under Part 15B of the NGR, based on its existing *Gas quality standard and monitoring guidelines (DTS),* which then could also cover biomethane and hydrogen connections. AEMO also noted that under the NGR, changes to the document would be subject to consultation and open to collaboration with participants, including asset owners, providing the opportunity to input into its modification.[238]

231 See rule 288(6) of the NGR.
232 Consultation paper submissions: AGIG, p. 6; AusNet, p. 7; Origin, p. 3; AEMO, pp. 11-12.
233 Consultation paper submissions: AGIG, p. 6; AusNet, p. 7.
234 ENGIE, submission to the consultation paper, p. 6.
235 APA, submission to the consultation paper, p. 32.
236 Consultation paper submissions: AGIG, p. 7; Alinta, p. 8; AusNet, p. 7; ENGIE, p. 6; APA, p. 32; AEMO, pp. 11-12.
237 AEMO, submission to the consultation paper, p. 12.
238 Ibid.

Responsibility for gas quality monitoring

There were mixed responses as to which party is best placed to be responsible for gas quality monitoring arrangements in distribution networks.

- Distributors should be the responsible party: AGIG, Alinta, AusNet, ENGIE and APA were supportive of distribution network service providers being responsible for gas quality monitoring in their distribution networks and Energy Services Victoria being responsible for compliance.[239]
- Alternative approach: AGIG put forward an alternative option where distribution service providers could conduct gas quality monitoring in the interim while there are limited distribution connected facilities, and as the market develops the responsibility may be revisited and handed over to AEMO.[240]
- AEMO should be the responsible party: Origin was of the view that AEMO may be best placed to monitor gas quality at the distribution level as it would ensure facilities are treated on a consistent basis across different distribution networks and may improve AEMO's ability to manage gas quality issues through blending constraints.[241]
- No preference: AEMO did not have a preference over whether distribution network service providers or itself should conduct gas quality monitoring at the distribution level, however, did note the former may be more aligned to operational responsibilities while the latter may be more efficient and provide more consistency between distribution networks.[242]

Through further discussions with stakeholders, views expressed in submissions have in some cases evolved which is detailed in the analysis section below.[243]

6.3.2 Other issues raised by AEMO

AEMO raised some additional issues related to gas quality in its submission which it considers should be addressed by this rule change. These additional changes relate to off-specification gas, offline gas quality measurements, the provision of gas quality monitoring systems and compliance with gas quality monitoring plans.

Issues raised by AEMO related to off-specification gas

AEMO made the following request related to off-specification gas:

- Ability to accept off-specification gas: rule 289 enables AEMO to accept off-specification gas where it is necessary to ensure the safety, security or reliability of the DTS. AEMO has requested a similar provision in the NGR for distributors to accept off-specification gas in their distribution networks. It argued that such a provision in the rules would remove the requirement to shut off supply from a distribution connected facility every time there is a

239 Consultation paper submissions: AGIG, p. 7; Alinta, p. 8; AusNet, p. 7; ENGIE, p. 6; APA, p. 32.
240 AGIG, submission to the consultation paper, p. 6.
241 Origin, submission to the consultation paper, p. 3.
242 AEMO, submission to the consultation paper, pp. 11-12.
243 Further discussions were held with AEMO, AusNet and AGIG which resulted in more comprehensive views as outlined in the analysis in Section 6.4 below.

short duration off-specification gas excursion, or the need to conduct a risk assessment to determine whether the gas is safe to accept for every off-specification event. AEMO also suggested that this would provide for transparency and consistency within and across networks.[244]

Issues raised by AEMO related to gas quality monitoring systems

AEMO proposed two rule changes regarding gas quality monitoring systems:

- Provision of gas quality monitoring system: rule 288(1) requires that gas quality monitoring systems be provided by the transmission network service provider at each system injection point and other such points on the DTS. However, AEMO noted this does not reflect current practice in the DTS and has requested that a connected party be permitted to provide its own system if it elects to do so, at either the distribution or the transmission level. AEMO highlighted that distribution connected facilities should be able to provide their own compliant gas quality monitoring systems if they are located near the facility and the connected party elects to do so. In its view, this provision should extend to the DTS for consistency across the DWGM. AEMO argued this may lead to more competitive pricing and is consistent with the approach to the provision of metering installations which can be provided by the network service provider or a connected party.[245]
- Offline gas quality measurements: rule 288(4) specifies the equipment to be included in gas quality monitoring systems but does not include requirements for the measurement of parameters such as compressor oil, mercury and radon which need to be monitored 'offline' rather than by the gas quality monitoring system, by taking samples for testing at a testing facility. AEMO noted that this would be an issue, particularly for distribution connected facilities, as biomethane and biogas have impurities that are different to natural gas and would require offline measurements to ensure gas quality safety. AEMO proposed for offline measurements to be included in AEMO's procedures (as discussed above AEMO suggested converting its *Gas quality standard and monitoring guidelines* into procedures in Part 15B of the NGR) to ensure these measurements become mandatory.[246]

Issues raised by AEMO related to gas quality monitoring plans

AEMO proposed three changes related to gas quality monitoring plans:

- Submission of gas quality monitoring plans from indirect supply sources: under the NGR a producer that is not directly connected to the DTS is not a registered participant and therefore is not required to submit a gas quality monitoring plan to AEMO. AEMO has requested that all production facilities that indirectly supply the DTS or a DDS should be required to submit a gas quality monitoring plan to ensure gas safety in the DWGM. According to AEMO, this would ensure that the party responsible for gas quality monitoring has sufficient gas quality information to ensure compliance.[247]

244 AEMO, submission to the consultation paper, p. 13.
245 Ibid, p. 14.
246 Ibid, p. 13.
247 Ibid, p. 14.

- Compliance with gas quality monitoring plan: AEMO noted that rule 288(6) requires the provider of a gas quality monitoring system to provide a gas quality monitoring plan for approval but does not require compliance with this plan. Currently, the only penalty for non-compliance with an approved plan is curtailment, which is considered by AEMO to be a disproportionate penalty to the act. AEMO requested a mechanism that would allow it to take action aside from curtailment if a facility operator submits a plan that does not meet its requirements. AEMO would like this mechanism introduced at the transmission level and at the distribution level for the party responsible for approving gas quality monitoring plans.[248]
- Responsibility for submitting a plan for online versus offline measurements: rule 288(6) requires the provider of a gas quality monitoring system to submit a gas quality monitoring plan to AEMO for approval. However, the contents of the plan do not require offline gas quality measurements. AEMO has proposed that for offline measurements, a connected party should be responsible for submitting a gas quality monitoring plan as offline measurements require taking a sample and testing the gas quality in a lab, which a network service provider is not best placed to do.[249]

6.4 Analysis

Upon analysing each of AEMO's individual proposed rule changes, it became clear that there are overarching issues with the gas quality framework in Part 19 of the NGR.[250]

Rather than address each proposed rule change individually, the Commission decided that a review of the entire subdivision was more appropriate because addressing each request individually would lead to the replication of known gaps in the rules if they were extended to accommodate DDS injections or, alternatively, inconsistent treatment of the same matters relating to gas quality monitoring as between the DDS and DTS.

This section covers analysis of gas quality specifications and gas quality monitoring. Analysis of gas quality specifications cover the following topics:

- gas quality standards
- off-specification gas.

The analysis on gas quality monitoring covers the following topics:

- contents of gas quality monitoring procedures
- responsibility for gas quality in declared distribution systems
- gas quality monitoring systems
- gas quality monitoring plans
- interaction between gas quality monitoring and the market schedule.

248 AEMO, submission to the consultation paper, p. 16.
249 Ibid, p. 14.
250 See Division 3, Subdivision 4 of Part 19 in the NGR.

6.4.1 Gas quality specifications

The Commission recognises that the rules relating to gas quality standards are not comprehensive and at times can be confusing to participants.[251]

Gas quality standards

As explained above in Section 6.1, under Victorian legislation the responsibility for gas transported through a declared system is on-specification primarily lies with AEMO in the DTS and with distributors in each DDS. Therefore, it is appropriate for AEMO to take responsibility for any variations to the standard applicable to injections into the DTS, as it does under rule 287.

For the same reason, the Commission is of the view that distributors should be responsible for approving any variations to the standard applicable to gas injections into their networks.

AEMO's guidelines supplement the standard gas quality specifications by setting out AEMO's interpretation of how the standard gas quality specifications need to be met in relation to the DTS. The Commission is of the view that these guidelines should become procedures. It is intended that this will promote a uniform application of the standard gas quality specifications in the DTS, while also allowing for the DDS specification to be varied by agreement with the relevant distributor. This is discussed further below.

Off-specification gas

The Commission agrees with AEMO that the introduction of distribution connected facilities means that off-specification gas may, at times, need to be injected into a declared distribution system to ensure the safety, security and reliability of the system or maintain public safety.

The Commission is of the view that distributors are the appropriate party to accept off-specification gas if needed because they are responsible for gas quality in their networks. In addition, distributors should also need to demonstrate that the acceptance of off-specification gas is necessary for the safety, security or reliability of the DDS or the safety of the public.

By adopting this approach, the draft rule would mirror the current arrangements for AEMO in the DTS.[252]

6.4.2 Gas quality monitoring

In analysing whether AEMO or a distributor would be best placed to take responsibility for approving gas quality monitoring arrangements for gas to be injected into a declared distribution system, the Commission considered the following questions related to different gas quality responsibilities:

1. What instrument is most appropriate to deal with gas quality standards and gas quality monitoring system requirements?

251 See rule 287 of the NGR and the definition of *standard gas quality specifications* in rule 200 of the NGR.

252 See rule 289 of the NGR.

2. Who should be responsible for gas quality monitoring in a declared distribution system, on a system-wide basis?
3. Who should provide gas quality monitoring systems?
4. Who should be required to submit a gas quality monitoring plan, who should be required to approve the plan, and what should be included in the plan?

Gas quality monitoring procedures

AEMO recommended creating new procedures to be covered by the NGR based on its *Gas quality standard and monitoring guidelines (DTS).* AEMO highlighted that the guidelines have additional requirements that are not NGR compliance obligations, despite being required under other legislative instruments or being deemed necessary for the safe operation of the DTS. According to AEMO, recognising these requirements as a wholesale procedure under rule 135EA(2)(s) of the NGR will make these requirements mandatory[253] and provide further clarity to market participants about exactly what is required.[254]

The Commission recognises the benefits of providing clarity to market participants on their obligations by requiring AEMO to make procedures that provide for the application of the standard gas quality specifications in Victorian networks and the requirements for gas quality monitoring systems and plans within or connected to the DTS and at points where gas flows from one distribution system to another.

The Commission agrees with AEMO that the procedures are the appropriate instrument to set out these requirements because procedures are easier to amend over time as the industry evolves, compared to the rules. It would in any event be difficult for the rules to be prescriptive on the specific requirements for gas quality monitoring systems at this time as these requirements are still being developed for new gases that may be injected into distribution systems.

The Commission has also considered the various changes requested by AEMO, as described in section 6.3.2, and is of the view that the new procedure should address most of them, by requiring the procedures to include information such as:

- the application of the standard gas quality specifications
- equipment required for gas quality monitoring systems
- the matters to be addressed in gas quality monitoring plans
- the process for connected parties to elect to provide their own gas quality monitoring systems, and
- how compliance with approved gas quality monitoring plans is monitored.

The Commission notes that AEMO's procedures will be subject to stakeholder consultation to ensure market participants have the right and ability to provide input into their development and any future amendments to them.[255]

253 See section 91BN(1) of the NGL.
254 AEMO, submission to the consultation paper, p. 12.
255 See rule 8 of the NGR.

Responsibility for gas quality in distribution systems

Extending AEMO's responsibilities with respect to gas quality to distribution networks would fundamentally alter the operational frameworks of each declared distribution system.

As system operators, distributors are better placed to take action in their own networks if a gas quality risk materialises. AEMO does not have operational control in distribution networks as it does in the DTS.[256]

Although AEMO has the experience and technology to make operational decisions based on gas quality monitoring in the DTS (which includes a DTS digital twin software that accurately replicates the quality of gas in transmission pipelines), AEMO has not applied this technology to gas quality monitoring of distribution networks.

The Commission notes that neither AEMO nor distributors have the technology or experience to actively monitor gas quality in distribution networks at the moment. There is currently no best practice for gas quality monitoring at the distribution level as direct injections of natural gas, hydrogen or gas blends into the Victorian distribution networks have not previously occurred. This knowledge and experience will develop as the market matures and best practice is established.

Currently, each distributor is already responsible for gas quality, which is specified in its gas safety case under the *Gas Safety Act (Victoria) 1997* and includes requirements for testing gas quality. Given this, distributors have a strong incentive to ensure gas quality in their networks is on-specification.

The Commission is of the view that no rule change is needed to specify that distributors are responsible for gas quality within their own networks since the Victorian legislation performs this role.

However, the Commission acknowledges that the distributor will need data from AEMO at transfer points between the DTS and a DDS in order for the distributor to meet its obligations under the *Gas Safety Act (Victoria) 1997.*

For this reason, the Commission decided that the rules should include data sharing provisions to require AEMO to provide distributors with information and data regarding the quality of gas flowing into their networks from the DTS.[257]

Gas quality monitoring systems

The rules currently require the service provider for the DTS to provide gas quality monitoring systems for system injection points (unless otherwise agreed with the connected party) and at other points on the DTS determined by AEMO. To accommodate distribution injections, the rules need to specify who is responsible for providing gas quality monitoring systems for DDS injection points and for points where gas flows from one DDS to another. Gas quality monitoring at DDS transfer points is needed because the heating value of gas in a DDS with hydrogen injections may be different to the heating value in the adjacent network and

256 See section 91BA of the NGL.

257 See rule 317A(b) of the draft rule.

settlements requires accurate measurement of the quantity of gas flowing between networks (in GJ).

The current rule allows the connected party to provide the gas quality monitoring system if agreed with the service provider. The Commission understands that the requirement to reach an agreement may be an impediment to a connecting party that wishes to provide the gas quality monitoring systems for its facility. In the Commission's view, it is efficient for a connected party to have the option to provide a gas quality monitoring system located on its own asset. The Commission considers that to the extent that the rules currently impede this outcome they should not be replicated for DDS injections and for consistency, should be amended for the DTS.

To achieve the above, the Commission determined that the rules should be amended to enable any registered participant to nominate to be the responsible gas quality monitoring provider if they elect to do so.[258] The service providers will be responsible for providing systems where the connected party does not elect to do so, for monitoring points on the DTS required by AEMO and for monitoring points between distribution systems.[259]

Gas quality monitoring plans

Rule 288(6) of the NGR requires the provider of a gas quality monitoring system to submit to AEMO a plan for approval to ensure the accuracy and reliability of the system. It also specifies the contents required in a gas quality monitoring plan, but currently does not include any requirements for information on offline gas quality measurements. As outlined above, AEMO has noted that gas quality monitoring relating to direct injections into a DDS will require offline monitoring. AEMO's gas quality monitoring guidelines also contemplate that gas quality monitoring plans will extend beyond the matters contemplated by rule 288(6).

AEMO has also noted the need for submission of gas quality monitoring plans from indirect supply sources to ensure that the party responsible for gas quality monitoring has sufficient gas quality information to ensure compliance.

The Commission's draft rule proposes to extend the requirements for approved gas quality monitoring plans to include plans for offline quality measurement and the other matters addressed in the proposed new procedures (and currently covered by AEMO's guidelines). The draft rule also requires:

- market participants to provide information to AEMO or distributors about precautions taken to ensure gas delivered to injection points meets gas quality requirements; and
- the gas quality monitoring plan to provide information about arrangements to ensure reasonable precautions are in place to prevent the delivery of gas to the market injection point that does not comply with the gas quality specifications.

AEMO noted that rule 288 does not require compliance with the approved plan. The Commission understands that approval of a gas quality monitoring plan does not ensure gas

258 See rule 289C of the draft rule.
259 See rule 289G of the draft rule.

quality and safety by itself. The lack of requirement for compliance with approved plans currently presents a risk to gas quality in the DTS and the risk would extend to distribution systems if the current approach were to be extended to the DDS. The Commission's draft determination is that the rules should be amended to require the responsible person to comply with the approved gas quality monitoring plan whether provided for the DTS or the DDS.

The Commission understands that AEMO's new procedures are the most appropriate instrument to specify the requirements in gas quality monitoring plans as they are easier to amend over time as the industry evolves. It is therefore more efficient for the NGR to require gas quality monitoring plans to address all matters in AEMO's procedures rather than be too prescriptive on the specific requirements as they may become outdated as best practice evolves.[260]

The Commission notes that gas quality monitoring plans from distribution connected facilities may require additional information, and therefore distributors are best placed to specify their requirements and record these in connection agreements.

The Commission's draft decision is for the rules to be amended to clearly specify that AEMO is responsible for approving gas quality monitoring systems and plans for the DTS injection points, other monitoring points on the DTS and points were gas flows between two distribution systems. Distributors would approve systems and plans for DDS injection points where the connected party has elected to take responsibility for gas quality monitoring at that point.

BOX 5: INTERACTION BETWEEN GAS QUALITY AND SCHEDULING

If Victoria authorises the supply of gases other than natural gas into a gas distribution system, gas quality monitoring responsibilities may include applying constraints on distribution connected facilities to ensure blending limits are not breached and directing the curtailment of facilities that pose risks to the safety of the public or the safety, security or reliability of the system.

1. Determining constraints on distribution connected facilities and applying them in scheduling

AEMO is currently responsible for applying constraints through its operating schedule as the market operator of the DWGM.

However, as described in Section 3.4 on operating schedules, the Commission understands that distributors are best placed to determine the constraints on distribution connected facilities to maintain blending limits, since this may rely on a detailed understanding of the characteristics of different parts of the network and how a particular blending facility operates.

260 See rule 289(H)(1) of the draft rule.

It would be difficult for AEMO to determine the constraints without input from distributors as they will have access to the facility data required. Therefore, under the Commission's draft determination the rules include information-sharing provisions between AEMO and distributors, where distributors provide the constraint equation to AEMO for application through the operating schedule.[a]

The facilities could also notify constraints to AEMO for application in the operating schedule in the same manner as DTS connected facilities.

2. Directing the curtailment of distribution connected facilities

The Commission understands the responsibility to direct curtailments naturally aligns with the party responsible for gas quality monitoring as this party must identify off-specification incidents requiring curtailment in real-time.

Distributors currently have the ability to curtail off-specification gas under their access arrangements.[b] According to rule 100 of the NGR, the Australian Energy Regulator (AER) must have regard to the NGO in deciding whether the non-tariff terms and conditions of an access arrangement are appropriate.[c] The Commission notes that the intent of rule 100 is for the AER to assess a wide range of non-tariff terms and conditions against the NGO, which includes considerations related to the safe and reliable operation of pipelines.[d] The Commission understands that this encompasses distributors having the ability to curtail distribution connected facilities to maintain gas quality. Therefore, the Commission is of the view that the requirements for access arrangements in rule 100 of the NGR do not require amendment.

Through discussions with distributors, AGIG supported the view that distributors should be responsible for curtailing distribution connected facilities injecting into their networks and interrupting deliveries of gas that post gas quality safety risks to the system.

On the other hand, AusNet proposed a division of responsibilities between distributors monitoring gas quality with AEMO directing curtailments. AusNet noted that as AEMO is an independent body, having AEMO directing curtailment may address potential concerns about distributors favouring related entities when curtailing distribution injections.

However, the Commission understands that this would add a layer of complexity in requiring distributors to communicate information to AEMO to take action when they have the information needed to direct curtailments in real-time.

It would also not eliminate AusNet's concern over distributors favouring certain distribution connected facilities over others, as the distributor may still exercise its favouring through selective information sharing with AEMO.

As described in section 3.4.4, the Commission has made a draft rule which requires distributors to curtail injections into their pipelines in accordance with the terms and conditions in their access arrangements, only in circumstances where it is permitted by law, or in order to avoid threats to the reliability of gas supply, the security of their network or

public safety.[e]

Source: [a] See rule 317A(b) of the draft rule.
[b] See access arrangements for AusNet and AGIG.
[c] See rule 100 of the NGR.
[d] AEMC, *Regulation of covered pipelines*, final determination, section 5.3.5, pp. 59-60, 14 March 2019.
[e] See rule 317C of the draft rule.

6.5 Commission's position

Taking into consideration feedback provided by stakeholders through submissions, bilateral meetings with stakeholders and extensive discussions with AEMO, the Commission has made draft rules to allocate gas quality monitoring responsibilities to distributors in their own networks, strengthen the approvals and compliance framework for entities monitoring gas quality, and provide greater clarity on gas quality monitoring equipment requirements. The draft rules are further explained in the following sections.

6.5.1 Gas quality specifications

The draft rule allows distributors to modify the standard gas quality specifications by agreement, which may involve additional specifications compared to natural gas injections. It also requires the agreements at the distribution level to include AEMO where any part of the gas may be re-injected into the DTS and other distributors where any part of the gas may be injected into other declared distribution networks.[261]

Rule 287 has not been changed and continues to allow AEMO to approve alternative gas quality specification requirements at system injection points.[262]

The separation between rule 287 (DTS) and rule 287A (DDS) in the draft rule reflects the fact that different entities are responsible for the quality of the gas being transported at the transmission and distribution levels.

The draft rule also enables distributors to accept the delivery of off-specification gas if necessary to ensure the safety of the public or the safety, security and reliability of the DDS. This arrangement mirrors AEMO's ability in the DTS.[263]

6.5.2 Gas quality monitoring

The draft rule outlines a framework for the different requirements and approvals in the transmission and distribution networks, giving clarity to market participants in the DTS and new participants at the distribution level. The draft rule:

- Requires AEMO to make *Gas quality monitoring procedures* which set out the application of the standard gas quality specifications in the DTS, the requirements for gas quality

261 See rules 287A of the draft rule.
262 Rule 289B of the draft rule requires AEMO to create *gas quality monitoring procedures* that include gas quality standards in relation to the DTS.
263 See rule 289A of the draft rule.

monitoring systems in the transmission and distribution level, and the arrangements for approvals and compliance with gas quality monitoring requirements in the DTS.[264]

- Enables any registered participant to nominate to be the responsible gas quality monitoring provider, and provides for cost recovery from market participants using the market injection point.[265] The new term 'responsible gas quality monitoring provider' refers to the person responsible for establishing and maintaining gas quality monitoring arrangements for market injection points.[266] At a DDS injection point, the distributor may approve a change in the responsible gas quality monitoring provider if the existing provider ceases to elect to do so and another registered participant elects to be the provider.[267]
- Recognises distributors' responsibility to curtail distribution connected facilities if required to maintain gas quality safety in their networks. As described in section 3.4.4, the Commission has made a draft rule which requires distributors to curtail in accordance with the terms and conditions of their access arrangement, only in circumstances where it is permitted by law, or needed to mitigate or avoid threats to the reliability of gas supply, security of their network or public safety.[268]
- Gives AEMO the responsibility to require gas quality monitoring systems at other points in the DTS or transfer points between distribution networks. The Commission notes that distributors may similarly require gas quality monitoring systems at other points in their network which they are able to do independently as pipeline owners.[269]
- Obliges the provider of a gas quality monitoring system to provide a gas quality monitoring plan to AEMO (for the DTS injection points, other DTS monitoring points and DDS transfers points) or the distributor (for a DDS injection point) and requires that these plans are complied with.[270]
- Obliges market participants to only inject gas into a market injection point with approved gas quality monitoring plans.[271]
- Obliges market participants to give AEMO or a distributor on request information, records and access to facilities that AEMO or the distributor reasonably requires in order to verify that the gas supplied at a market injection point complies with the applicable gas quality specifications and that reasonable precautions are in place to prevent the delivery of off-specification gas (reflecting a similar requirement in the rules for the STTM).
- Sets out the requirements for gas quality monitoring systems at market injection points and DDS transfer points.[272]

264 See rule 289B of the draft rule.
265 See rule 289C of the draft rule.
266 See rule 289C(1) of the draft rule.
267 See rule 289C(6) of the draft rule.
268 See rule 317C of the draft rule.
269 See rule 289D of the draft rule.
270 See rule 289E of the draft rule.
271 See rule 289F of the draft rule.
272 See rule 289G of the draft rule.

- Requires gas quality monitoring plans to address the requirements in AEMO's G*as quality monitoring procedure*s.
- Requires a gas quality monitoring plan for a market injection point to identify the sources of gas reasonably likely to be injected at that point and requires information about the precautions in place to prevent the delivery of gas to the market injection point that does not comply with the gas quality specifications.[273]
- Requires a gas quality monitoring plan to include an operation and maintenance plan to ensure the accuracy and reliability of each gas quality monitoring system covered by the plan.

Obligations

Given the changes to the gas quality framework, the Commission understands it is important to clearly set out the obligations of the person responsible for establishing and maintaining approved gas quality monitoring arrangements at market injection points (the responsible gas quality monitoring provider) and the obligations of market participants.[274]

The obligations on the responsible gas quality monitoring provider include:[275]

- ensuring approval of the gas quality monitoring system
- ensuring approval of the gas quality monitoring plan
- providing AEMO and any other affected market participant with all data and information relating to gas quality monitoring at the monitoring point (the Commission proposes this be classified as a conduct provision under the NGL).[276]

The obligations on market participants include:[277]

- only injecting gas into a market injection point with approved gas quality monitoring arrangements,
- contribute its proportionate share of the costs incurred by the responsible facility operator in establishing and maintaining approved gas quality monitoring arrangements for the market injection points,
- provide AEMO or the relevant distributor, on request, information, records and access to facilities to ensure reasonable precautions are in place to prevent the delivery of off-specification gas to a market injection point.

6.5.3 Data sharing provisions

In order for distributors to meet their gas quality monitoring responsibilities under *the Gas Safety Act (Victoria) 1997,* the Commission has made a draft rule that requires AEMO to share information reasonably required by the distributor for the operation of its declared distribution system having regard to the impact or potential impact of the injection of gas

273 See rule 289H of the draft rule.
274 See rule 289C of the draft rule.
275 See rule 289E of the draft rule.
276 See rule 289E(4) of the draft rule.
277 See rule 289F of the draft rule.

into its declared distribution system at DDS injection points and the scheduling of that gas through the Market.

The Commission's intention is that this would include information on gas quality for specific transfer points between DTS and a DDS and information about forecast demand, and any other information available to AEMO that might be needed by the distributor for that purpose.[278]

278 See rule 317A(b) of the draft rule.

7 METERING

The Commission considers that the rules relating to metering need to be extended to accommodate participation by distribution connected facilities in the market and require clarification to ensure they are fit for purpose for the introduction of distribution connected facilities and there are no inconsistencies between the transmission and distribution systems.

This chapter details the current metering framework in the NGR, stakeholder views on amending the framework, and the analysis which informed the Commission's position on making a draft rule.

7.1 Current arrangements

The DWGM metering framework is set out in rules 290 to 316 of the NGR.[279]

Under the existing framework, market participants must not inject or withdraw gas unless the connection point has an approved metering installation registered with AEMO.[280]

The metering rules also account for market participants injecting and withdrawing gas from a DDS, provided that the market participant has an approved metering installation registered with AEMO.[281]

While these provisions apply to market participants, the obligation to provide a metering installation falls on the 'responsible person'. The responsible person is typically the service provider for the relevant declared system.[282] Connected parties can also provide their metering installations if agreed with the transmission or distribution system service provider.[283]

The rules set out the responsibilities of the responsible person in relation to the metering systems it provides, technical requirements for metering systems, requirements for calibration, data collection and transfer and the use of metering data for settlements.

Some of these rules apply to all metering systems, and other rules within the metering framework apply only to metering installations at system points (currently defined in the rules as system injection points, system withdrawal points and system withdrawal zones).

7.2 Proponent's view

The proponent identified two issues with the current rules and the introduction of distribution connected facilities. First, metering and calibration requirements currently do not apply to distribution connected facilities metering installations. Second, connected parties cannot provide their metering installations unless the network service provider agrees otherwise,

279 See Part 19, Division 3, Subdivision 4 of the NGR.
280 See rule 290 of the NGR.
281 See rule 290(3) of the NGR.
282 See rule 292 of the NGR.
283 See rule 292(2)(f) of the NGR.

which the proponent considers inefficient if metering installations are located on the connected party's infrastructure.

The proponent suggested minor updates in the wording on metering accuracy and calibration requirements to ensure distribution connected installations are included and had no preference over whether connected parties should be able to provide their compliant metering.[284]

7.3 Stakeholder views

7.3.1 Issues raised in the consultation paper

Stakeholders submitted views on the two approaches raised by the proponent.

Metering accuracy and calibration requirements

Stakeholders agreed that rules covering metering accuracy and calibration requirements should be extended to distribution connected facilities.[285] A common reason provided was the need for accurate metering data at both the transmission and distribution levels to ensure accurate billing and settlement outcomes.

Allowing connected parties to provide their own metering installations

Most stakeholders were in favour of allowing connected parties to provide their own metering installations so long as they comply with the relevant standards.[286]

In addition, AEMO suggested that if a connected party elects to do so, they should be explicitly permitted to provide the metering installation for their system injection point, and if not, the relevant network service provider should be required to provide it.[287]

7.3.2 Other issues raised by AEMO

AEMO raised some additional issues in its submission which it considers should be addressed by this rule change, although the issues were not directly covered in the consultation paper.[288] The issues are described below.

Frequency of AEMO calibration requirements review

Rule 299(2) requires the provider of a metering installation to ensure metering installations in the DTS are calibrated in accordance with the *Metering uncertainty limits and calibration requirements procedures*. Rule 299(3) requires AEMO to review the calibration requirements in the procedures at intervals not exceeding one year.[289]

284 Rule change request, p. 8.
285 Consultation paper submissions: AGIG, p. 7; Alinta, p. 8; AusNet, p. 8; Origin, p. 3; ENGIE, p. 8; APA, p. 32; AEMO, p. 16.
286 Consultation paper submissions: AGIG, p. 7; Alinta, p. 8; ENGIE, p. 7; AEMO, p. 17.
287 AEMO, submission to the consultation paper, p. 17.
288 Ibid, pp. 16-19.
289 See rule 299 of the NGR.

AEMO proposed amending the frequency of its obligation to review the calibration requirements contained in the procedures. It proposed the requirement to be changed from annually to *"as required with an interval that must not exceed five years"*.[290]

AEMO indicated in its submission that it has not made any significant material changes to the calibration requirements since the establishment of the DWGM and has proposed a needs-based review process based on identified issues.

AEMO additionally noted that the annual review requirement has led to non-compliance risks when there is a lack of data provided by a responsible person which prevents AEMO from conducting the review, given the lack of sufficient data despite the requirement to review within a one-year period.

Energy content calculations

Rule 303(5) requires that the energy content of gas flowing through a metering point at each metering installation is calculated in accordance with standards American Gas Association Report (AGA) 7, AGA 8, and ISO6976, unless the responsible person, the affected participant and AEMO otherwise agree.

AEMO stated that the AGA standards are no longer fit for purpose compared to other internationally recognised standards. The current standards only refer to natural gas metering and given there is no documented standard for blended gases, AEMO noted that the standards will likely evolve as the industry develops and therefore market participants will require updates on the most appropriate method to calculate the energy content of gas.[291]

AEMO proposed rule 303(5) to be amended to remove the reference to AGA standards and instead refer to AEMO's relevant standards in its *Energy calculation procedures*.[292]

Metering calibration for suspected non-compliance

Rule 299(15) requires a responsible person to notify parties and resolve an issue on becoming aware of breaching metering installation accuracy requirements. However, the rules do not require any action (such as investigating and resolving the issue) from a responsible person where AEMO suspects an issue or defect with metering installation.[293]

AEMO proposed the NGR be amended to ensure that action is required to be taken by a responsible person when AEMO or the responsible person suspects the accuracy of a metering installation does not comply with the DWGM metering requirements. It also suggested including a requirement in the rules that the work to restore accuracy is performed within a reasonable specified timeframe. AEMO argued that this is a gap in the NGR that affects the integrity of metering data.[294]

AEMO noted that the objective of this proposal is to address an existing gap in the NGR affecting the integrity of the metering data which has previously resulted in inaccurate billing

290 AEMO, submission to the consultation paper, p. 17.
291 Ibid, p. 18.
292 AEMO, *Wholesale market metering procedures (Victoria)*, chapter 3 Energy calculation procedures, 9 January 2017, p. 9.
293 See rule 299(15) of the NGR.
294 AEMO, submission to the consultation paper, p. 18.

outcomes for market participants in the DTS and could potentially do so in a DDS if not rectified. To illustrate, while rule 299(15) requires a responsible person to notify parties and resolve an issue on becoming aware of breaching metering installation accuracy requirements, it does not specify any action where AEMO suspects any issue or defect with the metering installation. For example, there is no obligation on the responsible person to resolve the issue or even investigate it based on AEMO advice.[295]

Temporary modification approval

According to AEMO's *Maintenance planning procedures,* DWGM facility operators must notify AEMO of any maintenance plans for AEMO approval before work is undertaken if it affects AEMO's ability to ensure the safety, security and reliability of the DTS.

However, rule 299 does not require parties to notify or receive approval from AEMO for temporary modifications to meters which may impact the accuracy of metering data for billing and settlement purposes.[296]

AEMO has requested adding a clause to rule 299 that requires any temporary modifications to metering installations to be treated as maintenance per the *Maintenance planning procedures*, and therefore to require approval by AEMO before work is undertaken. AEMO indicated that this approach would ensure that AEMO has visibility of works impacting the integrity of metering data; reduce the extent of any metering inaccuracies caused by temporary modifications and reduce impacts to DWGM settlement and billing.[297]

7.4 Analysis

Upon analysing each of AEMO's additional individual proposed rule changes, it became clear that there were overarching issues with the structure of the metering framework in Part 19 of the NGR that were leading to uncertainty about the obligations of metering providers to ensure the integrity of data used for settlements.

Rather than address each proposed change individually, the Commission decided that a review of the framework was more appropriate because addressing each request individually would not resolve the structural issues.

This section covers the following topics:

- extending the provisions that apply to metering installations used for settlements to metering installations provided for DDS injection points and metering installations between distribution systems
- responsibility for providing metering installations
- the frequency at which AEMO must review the calibration requirements for metering installations
- updating the energy content calculations, and

295 AEMO, submission to the consultation paper, p. 18.
296 See rule 299 of the NGR.
297 AEMO, submission to the consultation paper, p. 18.

- strengthening the compliance and enforcement framework for metering.

7.4.1 Metering requirements for metering installations used for settlements

Metering installations at distribution receipt points are currently contemplated in the rules.[298] However, the subset of provisions that apply, in general, to the metering used for settlements does not consistently require adherence from metering installations at distribution injection points or at points where gas flows between distribution systems.

The Commission recognises that to accommodate distribution injection points in settlements, and to ensure accurate metering of flows between distribution networks, these provisions need to be extended to the metering equipment provided for these points.[299]

These obligations will ensure that the distribution delivery point metering installations are installed in accordance with the accuracy requirements of the metering subdivision of the rules.[300]

7.4.2 Responsibility for metering installations

The rules provide for metering installations to be provided by the service provider for a declared system, unless otherwise agreed by the connected party. This provision already extends to metering installations at receipt points on distribution systems.[301] However, the connected party requires to have the agreement of the service provider, rather than allowing the connected party to elect to become the responsible person.

Stakeholders supported that distribution connected facilities should be able to provide their own compliant metering installations. The Commission considers that this outcome would be better supported by provisions that allow the connected party to elect to take on that role rather than requiring service provider consent.

7.4.3 Frequency of AEMO calibration requirements review

With the introduction of renewable gases, calibration requirements might need to be reviewed more frequently than AEMO's proposed maximum of every five years. AEMO noted in discussions with AEMC staff that it considers that any obligation to review the requirements at intervals more frequent than every three years would be excessive.

When distribution connected facilities are introduced into the market, their new meters will likely only be required to be recalibrated after three years. AEMO noted it would be difficult to make significant changes to the calibration requirements based on the introduction of these facilities if they are only providing calibration data after three years of entering the market.

298 See rule 292(2)(f) of the NGR.
299 See rule 290 and rule 299(1) of the NGR.
300 See rule 290(1)(b) of the NGR.
301 See rule 292(2)(f) of the NGR.

The Commission understands that AEMO has not made any significant material changes to the calibration requirements in the *Metering uncertainty limits and calibration requirements*, despite being required to review the requirements annually.[302]

The Commission agrees with AEMO and supports changing the frequency of AEMO's calibration requirements review. This decision will lower the administrative and regulatory burden on AEMO and is unlikely to have significant impacts on market participants and given AEMO has not materially amended the calibration requirements since the inception of the DWGM.

7.4.4 Energy content calculations

The Commission understands that the standards included in rule 303(5) are outdated and that they only refer to natural gas metering and that there is currently no documented standard for gas blends.

AEMO proposed removing references to outdated standards from the rules and instead referring to AEMO's *Energy calculation procedures* in order to give AEMO the flexibility to prescribe the most appropriate method to calculate the energy content of gas flowing through a metering point based on current and best practices.[303]

The Commission agrees with AEMO that it would be impractical for the NGR to be prescriptive with its standards as it is expected that best practice standards will evolve as the renewable gas industry evolves and that procedures are the most appropriate instrument in this case.

The Commission also notes that energy content calculation standards in other jurisdictions do not face this issue as the standards are set by the relevant jurisdiction.

Heating values

Heating values are used to calculate the amount of megajoules in natural gas, and therefore play an important role in determining customer gas bills. In Victoria, AEMO determines a daily state-wide flow-weighted average heating value for gas for all non-daily metered gas customers. Unlike in other jurisdictions, customers in Victoria are settled using a heating value that is determined on a state-wide basis which means that some customers may pay more per unit of energy and others less due to variance in the actual and local heating values for gas delivered across the state.

Some stakeholders raised concerns over the impact that natural gas equivalent injections will have on the determination of the state-wide heating value and its influence on customer bills.[304]

For example, hydrogen has a higher heating value and therefore requires more volume to be delivered than natural gas for the same amount of energy, which could lead to overcharging customers in their bills. APA considered zonal measurements of heating values to be a more

302 See rule 299 of the NGR.
303 AEMO, submission to the consultation paper, p. 18.
304 Consultation paper submissions: Alinta, p. 5; APA, p. 21.

appropriate billing methodology for gas customers compared to the current state-wide heating value approach as it would result in greater accuracy of energy consumed at the customer site level and therefore more accurate billing.[305]

In response to a request from the Victorian Minister for Energy, Environment and Climate Change, AEMO has commenced with the implementation of a zonal approach to determining gas heating values in Victoria. AEMO will undertake a joint consultation with the Essential Services Commission to amend relevant market procedures as well as the *Victorian Gas Distribution System Code of Practice*. Formal consultation on the amendments to the market procedures is expected to commence in May 2022.[306] [307]

7.4.5 Compliance and enforcement framework

AEMO identified gaps in the compliance and enforcement framework in the metering rules, where providers of metering installations are not explicitly required to notify AEMO of various metering inaccuracies or take action to investigate or rectify them, in some circumstances.[308]

The Commission's views and analysis on these issues are provided below.

Metering calibration for suspected non-compliance

The Commission agrees with AEMO's recommendation to amend the rules to ensure that action is required to be taken by a responsible person when AEMO or the responsible person suspects the accuracy of a metering installation does not comply with the DWGM metering requirements.

While the NGR requires a responsible person to notify parties and resolve any metering inaccuracy it identifies, AEMO has indicated that this requirement is not sufficient to ensure metering inaccuracies are resolved quickly. AEMO noted that, at least once a month, there is a case where AEMO identifies a metering accuracy issue and no action is taken by the responsible person.

Through discussions with AEMC staff, AEMO provided an example where a metered demarcation valve between two distribution networks was not correctly restored following maintenance works, and despite requests to remedy the issue, the transfer point was bypassed for a period of four months before it was restored which caused significant billing errors.

The Commission understands that ensuring metering installations at distribution delivery points are providing accurate data will be critical for not only settlement and billing, but gas quality safety given the introduction of gas blends.

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305 APA, submission to the consultation paper, p. 21.

306 See AEMO's website: https://aemo.com.au/initiatives/trials-and-initiatives/renewable-gas-blending-in-victoria

307 See ESC's website: https://www.esc.vic.gov.au/electricity-and-gas/codes-guidelines-and-policies/gas-distribution-system-code/renewable-gas-blending-and-gas-heating-values

308 See proposed changes metering calibration for suspected non-compliance and temporary modifications' approval in section 7.3.2.

Temporary modification approval

The Commission understands that temporary modification to meters can occur due to a range of reasons, such as maintenance of meters and other equipment, or bypassing meters for calibration purposes.

AEMO has provided an example to illustrate the issue: during a maintenance period in 2021, a number of large meters in the DTS were bypassed. Following the completion of the maintenance, despite multiple requests from AEMO to close the bypasses and restore the meters, there was a significant delay which resulted in a $3.3 million settlement error within the DWGM. This then required significant work on behalf of AEMO to perform manual calculations to reduce this error and conduct a settlement revision for that period.

AEMO noted that this is not an uncommon occurrence and that this situation places a significant administrative burden on AEMO to manually resolve the issue (through data substitution), requiring input from across operations, settlement and billing teams.

Given that distribution connected facilities may include covered gas injections, it is important for AEMO to have visibility over any temporary or permanent alterations to their metering installation. The Commission is of the view that it will be critical that accurate metering data is provided to AEMO not only for accurate billing and settlement but for safe system operation.

Other issues identified by the Commission

In light of the gaps identified by AEMO and the examples provided, the Commission undertook a more comprehensive review of the metering framework. Based on this review, the Commission considers that some of the gaps identified by AEMO may arise out of the structure of the framework, which has the obligations of the responsible person spread across several different rules.

For example, several provisions in rule 299, which principally relates to calibration, have broader application to any non-compliance of a metering installation with the framework. Rule 304(2) includes an obligation to repair a metering installation malfunction or defect and overlaps with provisions in rule 299.

Furthermore, the provisions setting out the obligations of the responsible person are not supported by enforcement mechanisms that would allow the AER to take action when the responsible person fails to satisfy its obligations.

The Commission agrees that the result is unintended gaps or uncertainties in the obligations of metering providers and the enforcement framework. It recognises the risk of inaccurate settlement outcomes if these matters are not addressed and are allowed to be replicated for DDS injections. For these reasons, the Commission's draft rule proposes to strengthen the metering rules by including additional changes which are described in the next section.

7.5 Commission's position

Taking into consideration feedback provided by stakeholders, extensive discussions with AEMO and analysis carried out by the AEMC, the Commission has made draft rules which:

- Allows connected parties to elect to provide their own metering installations at new receipt points or delivery points on declared transmission or distribution systems.[309]
- Requires AEMO to make *Metering installation coordination procedures* outlining the obligations for providers of metering installations at system points and transfer points between declared distribution system points. These obligations relate to temporary changes to metering installations, consequences for metering data failures, monitoring metering installations, audit requirements and investigating responses to notifications from AEMO regarding the accuracy of metering installations.[310]
- Brings together into one rule the key obligations of providers of metering installations that are intended to ensure the integrity of metering data and the efficient operation of settlements. These cover obligations to:
  - monitor for the correct operation of metering installations[311]
  - rectify any metering malfunctions as soon as practicable and in any event within two days unless AEMO agrees otherwise[312]
  - for metering installations used for settlements:[313]
    - make test results available to AEMO and affected participants,
    - allow AEMO and each affected participant to inspect the installation,
    - allow AEMO to notify the responsible person of suspected issues affecting the metering installation in order to initiate the process of having it investigated and rectified,
    - require notice of changes that affect the integrity of the information being provided for settlements, and
    - ensure any extraneous use of a meter does not interfere with the provision of metering data to AEMO.
- Requires the responsible person for a metering installation to ensure that it meets all the metering installation component requirements in the metering rules.[314]
- Extends the calibration requirements to connection points between different declared distribution systems, since these are also used for settlements.[315] These points are now captured by the new definition 'settlement metering point' which means a system point or a point where gas is transferred between declared distribution systems.[316]

309 See rule 292(3A) of the draft rule.
310 See rule 292A of the draft rule.
311 See rule 293(2) of the draft rule.
312 See rule 293(3) of the draft rule.
313 See rule 293(2) to (10) of the draft rule, these bring together and amend provisions formerly located at rules 299(6), (12)(a) and (14) to (17), rule 304(2) and rule 316(3).
314 See rule 295 of the draft rule.
315 See rule 299(1) of the draft rule.

- Requires the responsible person to establish and provide to AEMO calibration procedures in respect of each of its metering installations.[317]
- Sets a time limit of two business days on the obligation to rectify inaccurate metering installations if AEMO or a registered participant identifies a metering defect or tampering.[318]
- Requires AEMO to review the calibration requirements contained in its *Metering uncertainty limits and calibration requirements procedures* at intervals not exceeding five years and not more than once a year.[319]
- Requires the responsible person to notify AEMO and the distributor of any changes to metering parameters or settings at receipt points on a declared distribution system that may affect metering accuracy at least two business days before the change.[320]

316 See the definition of 'settlement metering point' in rule 200 of the draft rule.
317 See rule 299(4) of the draft rule.
318 See rule 300(3) of the draft rule.
319 See rule 299(3) in the draft rule.
320 See rule 302 of the draft rule.

8 IMPLEMENTATION

This chapter sets out the proposed timeframe for implementing the draft rule, including the interim steps that may need to be undertaken by market participants and AEMO before the commencement of the rule.

8.1 Preparing for implementation

As a consequence of the draft rule, AEMO will be required to update its procedures and systems to give full effect of the inclusion of distribution connected facilities into the DWGM.

The Commission understands that AEMO's procedures for the DWGM are spread across multiple different instruments as required under Part 19 of the NGR and that most, if not all, of them, will require changes. Some of the changes may be more extensive, while some changes may be minor, for example, updating a procedure to reflect a new definition introduced by the new rules.

According to AEMO, the procedures can be grouped into the following categories:

- market and settlement procedures
- operational procedures
- connection and maintenance procedures
- metering procedures
- distribution UAFG procedures

8.2 Proposed commencement

The Commission recognises that system changes are not a trivial task and require careful planning and management, detailed design work, and thorough testing. At this stage, the Commission is of the view that it would take around 15 months from the time the final determination is published to consult on and finalise the necessary procedures and to make the necessary system changes, which includes testing and implementation.

8.3 Transitional arrangements

Stakeholder input is sought on the following transitional arrangements specified in the draft rule (which assume a final rule is made by the end of July 2022):

- Current procedures: no later than 6 months before the commencement date, AEMO must prepare, consult and publish any necessary changes to existing procedures to take into account the draft rule.
- New procedures: no later than 3 months before the commencement date AEMO must prepare, consult and publish the new procedures required by the draft rule:
  - *distribution operations coordination procedures*
  - *gas quality monitoring procedures*
  - *metering installation coordination procedures*.

- Interconnection principles for declared distribution systems: this Division applies to a distributor in relation to its declared distribution system from the effective date and ceases to apply when the South Australian Minister first makes a Rule under section 294FB of the NGL.
- Transition period: means the period commencing on the commencement date and ending 6 months after the commencement date.
  - metering: a person who, immediately before the commencement date was the responsible person for a metering installation under the old DWGM rules continues on and from the commencement date to be the responsible person for the metering installation.
  - gas quality monitoring system provider:
    - A person who, immediately before the commencement date was the provider of an existing gas quality monitoring system is taken, on and from the commencement date, to be the responsible gas quality monitoring provider responsible facility operator for the system injection point or other points for which the gas quality monitoring system is provided.
    - An existing gas quality monitoring system is taken to have been approved in accordance with the gas quality monitoring procedures, except if it is altered or replaced following the commencement date.
    - During the transition period, rule 289E(1)(b) of the new DWGM rules does not apply to an existing gas quality monitoring system.
    - The responsible gas quality monitoring provider responsible facility operator for an existing gas quality monitoring system must ensure that on and from the end of a transition period, a gas quality monitoring plan under rule 289E(1)(b) of the new DWGM rules has been established for the point for which the gas quality monitoring system is provided and, where applicable, has been approved in accordance with rule 289E(2) of the new DWGM rules.

ABBREVIATIONS

AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
AGIG	Australian Gas Infrastructure Group
AMDQ	Authorised maximum daily quantity
AS	Australian Standards
ASX	Australian Securities Exchange
Commission	See AEMC
DDS	Declared distribution system
DTS	Declared transmission system
DWGM	Declared wholesale gas market
GJ	gigajoule
MCE	Ministerial Council on Energy
NGL	National Gas Law
NGO	National gas objective
NGR	National Gas Rules
SEA	Service envelope agreement
STTM	Short term trading market
TUoS	Transmission use of system

A LEGAL REQUIREMENTS UNDER THE NGL

This appendix sets out the relevant legal requirements under the NGL for the AEMC to make this draft rule determination.

A.1 Draft rule determination

In accordance with s. 308 of the NGL, the Commission has made this draft rule determination in relation to the rule proposed by the Victorian Minister for Energy, Environment and Climate Change. The Commission's reasons for making this draft rule determination and its key features are described in section 2.4.

A copy of the more preferable draft rule is attached to and published with this draft rule determination.

A.2 Power to make the rule

The Commission is satisfied that the more preferable draft rule falls within the subject matter about which the Commission may make rules. The more preferable draft rule falls within s. 74 of the NGL as it relates to the operation of a declared wholesale gas market and the activities of persons in a regulated gas market.

Under s. 296 of the NGL, the Commission may make a rule that is different (including materially different) to a proposed rule (a more preferable rule) if it is satisfied that, having regard to the issue or issues raised in the rule change request, the more preferable rule will or is likely to better contribute to the achievement of the NGO. The Commission is satisfied that the more preferable final rule will, or is likely to, better contribute to the achievement of the NGO. The Commission's reasons are set out in section 2.4 and chapters 3 to 7.

A.3 Commission's considerations

In assessing the rule change request the Commission considered:

- its powers under the NGL to make the rule
- the rule change request
- submissions received during first round consultation for the rule change request and the review
- feedback provided at the workshops on 13-15 December 2021 and meetings with stakeholders, including AEMO and distribution service providers
- the Commission's analysis as to the ways in which the proposed rule will or is likely to, contribute to the NGO.

There is no relevant Ministerial Council on Energy (MCE) statement of policy principles for this rule change request.[321]

321 Under s. 73 of the NGL the AEMC must have regard to any relevant MCE statement of policy principles in making a rule. The MCE is defined in the NGL as, in summary, the group of Ministers responsible for energy matters at a national level, sitting as the MCE.

The Commission may only make a rule that has effect with respect to an adoptive jurisdiction if satisfied that the proposed rule is compatible with the proper performance of AEMO's declared system functions.[322] The more preferable draft rule is compatible with AEMO's declared system functions because:

- the draft rule provides for scheduling of DDS injections based on bids and settlement of the resulting market charges, which are consistent with AEMO's declared system functions with respect to DTS injections
- AEMO's system operation role remains confined to the DTS
- the draft rule addresses the potential impact of injections into a DDS on DTS operational matters; for example, in the forecasting rule and the gas quality monitoring systems and metering installation provisions
- to the extent operational matters in the DDS could impact on scheduling or the market (for example, the application of constraints to maintain gas quality), the draft rule provides for DDS service providers to remain primarily responsible subject to coordination arrangements with AEMO
- the draft rule is intended to give AEMO the tools it needs to maintain the integrity of market settlements and maintain gas quality in the DTS, consistent with AEMO's functions, by giving AEMO approval roles in relation to gas quality at DDS injection points, gas quality monitoring systems at DDS injection points, metering installations for DDS injection points or gas quality monitoring systems and metering installations at points where gas flows from one DDS to another.

A.4 Civil penalties

The Commission cannot create new civil penalty provisions. However, it may recommend to the Victorian Minister for Energy, Environment and Climate Change that new or existing provisions of the NGR be classified as civil penalty provisions under the *National Gas (Victoria) (Declared System Provisions) Regulations*.

The Commission's more preferable draft rule includes the addition of a number of rules into the NGR. The new provisions that the Commission is recommending to the Energy Ministers Meeting and the Victorian Minister for Energy, Environment and Climate Change as civil penalty provisions are set out in the table below.

Table A.1: Recommended civil penalty provisions

RULE	DESCRIPTION OF RECOMMENDED CIVIL PENALTY PROVISION
289E(4)	This rule ensures that a responsible gas quality monitoring provider install, operate and maintain its gas quality monitoring system in accordance with applicable gas quality monitoring arrangements.
293(5)	This rule ensures that a responsible person notifies all affected participants and AEMO if they become aware that the accuracy of a metering installation does not

322 Section 295(4) of the NGL.

RULE	DESCRIPTION OF RECOMMENDED CIVIL PENALTY PROVISION
	comply with the relevant requirements or could affect the integrity of the metering data.
293(6)	This rule ensures that a responsible person provides information regarding metering installations where AEMO becomes aware or reasonably believes that the metering installation was not in compliance with relevant requirements or has malfunctioned or is defective.
293(7)	This rule ensures that a responsible person notifies all affected participants and AEMO of any modification, adjustment, repair or replacement of any metering installation.

Source: Draft National Gas Amendment (DWGM distribution connected facilities) Rule 2022.

The Commission considers that the new provisions should be classified as tier 1 civil penalty provisions because of their importance to the operation of the DWGM and to ensure the safe, secure and reliable supply of gas to consumers. A failure to comply with these rules has the potential of causing serious harm to consumers and the operation of the DWGM and DDS.

The Commission has and will continue to consult with the Victorian Department of Energy, Land, Water and Planning and the AER with respect to these civil penalty provision recommendations.

A.5 Conduct provisions

The Commission cannot create new conduct provisions. However, it may recommend to the Victorian Minister for Energy, Environment and Climate Change that new or existing provisions of the NGR be classified as conduct provisions under the *National Gas (Victoria) (Declared System Provisions) Regulations*.

The Commission's draft rule amends a number of rules of the NGR, which are currently classified as conduct provisions under clause 4 and Schedule 2 of the *National Gas (Victoria) (Declared System Provisions) Regulations*. The amended rules are 213(2), 219(1), 225, 229(4), 229(7), 290(6), 292(5), 293, 295, 302 and 303(5). The Commission considers that these amended rules should continue to be classified as conduct provisions.

The Commission considers that rule 288 of the NGR should cease to be classified as a conduct provision because it has been deleted.

The Commission's more preferable draft rule includes the addition of a number of rules into the NGR. The new provisions that the Commission is recommending to the Victorian Minister of Energy, Environment and Climate Change as conduct provisions are set out in the following table:

Table A.2: **Recommended new conduct provisions**

RULE	DESCRIPTION OF THE RECOMMENDED CONDUCT PROVISION
289A(1)	Proposed new subrule requires each Registered Participant to use its reasonable endeavours to ensure that gas it injects into a declared distribution system at a DDS injection point complies with the gas quality specifications, provides for steps to be taken where there is off-specification gas and allows the Distributor to accept delivery of off-specification gas subject to the conditions in the rule.
289A(2)	Proposed new subrule requires each Registered Participant to notify the relevant Distributor where there is off-specification gas.
289E(5)	Proposed new subrule requires the responsible gas quality monitoring provider to provide AEMO and other affected Participants on request with all data and information relating to gas quality at the monitoring point.
289F	Proposed new rule requires a Market Participant to have an agreement with the responsible gas quality monitoring provider for a market connection point under which that Market Participant contributes to its proportionate share of the costs incurred in establishing and maintaining gas quality monitoring arrangements for the market injection point. The proposed new rule also requires the Market Participant to give AEMO or a Distributor on request information, records and access to facilities that AEMO or the Distributor reasonably requires to verify compliance with gas quality specifications and that reasonable precautions are in place to prevent the delivery of off-specification gas to market injection points, consistent with access rights under a Distributor's access arrangement.
289G(1)	Proposed new subrule sets out requirements for a gas quality monitoring system for a market injection point or a DDS transfer monitoring point.
293(8)	Proposed new subrule requires that any extraneous use of a metering installation does not inference with the provision of metering data in accordance with the Part.
303(2A)	Proposed new subrule requires a metering installation at a market injection point on a declared distribution system to be capable of determining the energy content of gas flowing through the metering point unless otherwise agreed by AEMO and the responsible person. This is consistent with the existing requirement for DTS injection points in subrule (2).
317A(4)	Proposed new subrule requires a Distributor to only use information disclosed in accordance with the distribution operational coordination procedures for the purpose for which it was disclosed and that confidentiality is maintained.
317B(7)	Proposed new subrule requires a Distributor to comply with a requirement to revise a constraint methodology in accordance with the distribution operational coordination procedures.

Source: Draft National Gas Amendment (DWGM distribution connected facilities) Rule 2022.

The Commission considers that the new provisions should be classified as conduct provisions because (leaving aside proposed new subrule 317(5)) the proposed classification is consistent with the classification of the equivalent provisions relating to DTS injections, or the current classification of provisions being replaced or supplemented by the proposed new provisions. The Commission is satisfied that the classification remains appropriate.

This group of provisions deals with gas quality or metering, so classification as conduct provisions allows for a person that suffers a loss due to breach of the provision to bring an action for damages. This in turn may support the operation of gas quality and metering or allocation arrangements in upstream contracts. Similarly, in relation to proposed new rule 317A(5), classification as a conduct provision allows a person suffering a loss to bring an action for damages due to disclosure or use of confidential information in breach of the subrule.

The Commission has and will continue to consult with the Victorian Department of Energy, Land, Water and Planning with respect to these conduct provision recommendations.

B OVERVIEW OF CHANGES TO THE NATIONAL GAS RULES PROPOSED IN THE DRAFT RULE

B.1 Part 15A — Registered participants

Rule 135A

Rule 135A lists the activities that give rise to an obligation to register for the DWGM. The current text would be renumbered as subrule (1).

New registration categories would be added to cover a person who injects gas into a declared distribution system at a DDS injection point from a storage facility, production facility or blend processing facility, both in their capacity as a facility operator and if they participate in the market to buy and sell gas.

Other changes to rule 135A replace references to 'natural gas' with references to 'gas' and specify that gas has the meaning given in Part 19. In Part 19, gas is defined to include natural gas and processable gas.

A new subrule (2) would define 'gas' and other terms used in subrule (1) that have the meaning given in Part 19.

B.2 Part 15B — Procedures

Rule 135EA(2)

Rule 135EA(2) lists matters that may be dealt with in the procedures made by AEMO for the DWGM. Consequential changes would be made to reflect the additional procedures provided for in the draft rule.

B.3 Part 19 — Declared wholesale gas market

B.3.1 Rule 200 — definitions

- **actual injections:** The reference to 'system injection points' (which relate to the DTS only) would be replaced with the new term 'market injection points' (which includes DSS injection points) so that for settlement purposes, actual injections would be calculated using injections at DDS injection points.
- **adjusted withdrawals:** The reference to 'rule 235' in this definition would be replaced with a reference to 'rule 235(11)' which is the subrule that, for settlement purposes, calculates adjusted withdrawals from the DTS and any additional withdrawals from the DDS.
- **blend processing facility:** This proposed new term is used to refer to a facility in which gas of different types is blended for injection into a pipeline.
- **capacity certificates zone:** DDS injection points will be included in capacity certificates zones for system injection points. A consequential change has been made to the definition.

- **DDS injection point:** A new definition would be included to refer to a point on a declared distribution system at which gas is received into the pipeline. The defined term refers to a receipt point on a declared distribution system. The term 'receipt point' excludes any 'transfer point' with the intended result that the definition will not extend to points where gas is injected from the DTS.
- **declared distribution system:** The term 'declared distribution system' is defined in the NGL by reference to the legislation of the relevant participating jurisdiction. The Victorian legislation in turn defines the declared distribution system by reference to an Order made by the Minister and published in the Victorian Government Gazette. The gazette declaration is broad enough to pick up certain distribution pipelines in Victoria that are not covered by the DWGM arrangements. This proposed new definition of 'declared distribution system' is intended to exclude these non-DWGM distribution pipelines.
- **delivery point:** This definition would be amended to extend it to include delivery points for distribution connected facilities, which is achieved by amending the definition of 'distribution delivery point' as explained below.
- **distribution connected facility:** This new term would refer to a storage facility, production facility or blend processing facility connected to a declared distribution system.
- **distribution connected facility operator:** This new term would refer to a person who owns, operates or controls a distribution connected facility.
- **distribution constraint:** This new term would refer to constraints relating to the flow of gas in a declared distribution system as notified to AEMO by the Distributor. AEMO would take these constraints into account in the operating schedule and the pricing schedule.
- **distribution injection or flow constraint:** This new term would refer to constraints on injections at DDS injection points either notified by the facility operator or by the Distributor or worked out by AEMO using a methodology given to AEMO by the distributor under the proposed distribution operations coordination procedures. AEMO would take these constraints into account in the operating schedule and the pricing schedule.
- **distribution delivery point:** This definition would be amended to include points at which gas is delivered to any distribution connected facility (not just storage facilities).
- **DWGM facility operator:** Minor drafting changes would be made to this existing term.
- **gas quality monitoring procedures:** This new signpost definition would refer to the new procedures to be made under rule 289B.
- **gas quality monitoring systems:** This existing term would be amended to provide for DDS injections.
- **gas quality specifications:** This existing term would be amended to refer to alternative gas quality specifications agreed for a DDS injection point under proposed new rule 287A.
- **injection bid:** This existing term would be amended to provide for DDS injections.
- **Market:** This existing term would be amended to provide for DDS injections.
- **market injection point:** This new term would be used to refer to a system injection point or a DDS injection point (or both) and would be used in place of 'system injection point' where appropriate in Part 19.

- **metering installation coordination procedures:** This new signpost definition would refer to the new procedures to be made under rule 292A.
- **off-specification gas:** This term would be extended to DDS injection points by using 'market injection point' in place of 'system injection point'.
- **responsible gas quality monitoring provider:** This new signpost definition would refer to the Registered participant or service provider that is responsible for providing the gas quality monitoring arrangements for injection points or other points on a declared system.
- **settlement metering point:** This new term would be used to refer to points where the metering is used for settlements. It is intended to cover system points (including DDS injection points) and points where gas is transferred between declared distribution systems.
- **system point:** This term would be extended to DDS injection points by using 'market injection point' in place of 'system injection point'.

B.3.2 Other provisions

- **Rule 204A (new):** Proposed new rule 204A would address a situation in which there is more than one facility operator for a distribution connected facility, by allowing one of the group to nominate as the person responsible for performing the obligations on behalf of all the group. The draft rule is modelled on a similar provision in Part 20, for the STTM.
- **Rule 206(1):** Rule 206 requires AEMO to schedule in accordance with bids. The amendments to subrule (1) would extend the rule to gas injections into a DDS at DDS injection points. Consequential amendments would be made to subrules (2) and (3).
- **Rule 207:** Consequential amendments to rule 207 would reflect the requirement for Market Participants to submit bids for gas to be injected into a declared distribution system.
- **Rule 208:** Rule 208 deals with demand forecasts. Subrule (1) would be amended to require demand forecasts to be provided with respect to withdrawals from declared distribution systems to the extent not included in the demand forecast for withdrawals from the DTS and, where AEMO requires, from one or more specified DDS withdrawal points. Consequential amendments would be made to subrules (2), (3) and (5).
- **Rule 209:** Rule 209 sets out the requirements to submit bids and would be extended to DDS injection points by using 'market injection point' in place of 'system injection point' and making consequential amendments.
- **Rule 210:** Rule 210 deals with accreditation of controllable quantities and would be extended to DDS injection points by using 'market injection point' in place of 'system injection point'.
- **Rule 213(2):** Rule 213(2) requires Market Participants to ensure that forecasts and bids are made in good faith and represent the Market Participant's best estimates. Consequential changes would be made to reflect the inclusion of DDS injections in bidding and scheduling processes.

- **Rule 213(3):** Rule 213(3) provides information rather than imposing an obligation. It is no longer relevant to the DWGM arrangements and would be deleted.
- **Rule 214A(2)(a):** Subrule 214A(2)(a) deals with information about tie-breaking events and would be extended to DDS injection points by using 'market injection point' in place of 'system injection point'.
- **Rule 215(1):** Rule 215(1) deals with the inputs and assumptions to be used by AEMO when producing operating schedules. Paragraph (c) would be amended so that it refers only to supply or demand point constraints in respect of the DTS and a new (f1) will be added to allow AEMO to take into account distribution injection or flow constraints.
- **Rule 215(2):** Rule 215(2) deals with the overriding principle to be applied by AEMO when producing operating schedules and would be amended to clarify that distribution constraints relating to injections into a distribution system can be taken into account.
- **Rule 215(11):** Rule 215(11) explains the information to be included in scheduling instructions. A drafting change to this subrule would use the defined term 'system point'. This would extend the subrule to DDS injection points but is not otherwise intended to change the meaning of the subrule.
- **Rule 216(4):** Rule 216(4) deals with the circumstances in which a Market Participant is not obliged to comply with a scheduling instruction issued in respect of a bid. The amendments would extend the subrule so that it applies to distribution connected facility operators in the same way that it applies to Producers and Storage Providers.
- **Rule 217(3):** Rule 217(3) lists the circumstances in which there will not be an unintended scheduling result and would be amended to reflect the proposed new framework for dealing with distribution injection or flow constraints.
- **Rule 219(1):** Rule 219(1) deals with injection and withdrawal confirmations and would be amended to provide for DDS injections.
- **Rule 220:** A consequential change would be made to the heading of rule 220 due to the addition of new rule 220A.
- **Rule 220A (new):** Proposed new rule 220A would provide for title in gas injected into a declared distribution system from the DTS or from a distribution connected facility to be transferred to the Market Participants who withdraw from the declared distribution system.
- **Rule 221(3):** Rule 221(3) lists the matters AEMO must have regard to in producing pricing schedules. It would be amended to reflect the proposed new framework for dealing with distribution injection or flow constraints.
- **Rule 221(4):** Rule 221(4) states that AEMO cannot take into account transmission constraints for the pricing schedule. It would be amended to allow AEMO to take into account distribution constraints affecting injections of gas in a declared distribution system.
- **Rule 225(4) and (5):** Rule 225 provides for the calculation of contributions to the participant compensation fund and would be amended to provide for gas injected into a declared distribution system to be included in the calculation.

- **Rule 228:** Rule 228 is a general statement about the application of the subdivision and has been amended to refer to DDS injections.
- **Rule 229:** Rule 229 deals with the appointment of allocation agents or sub allocation agents for system injection points used by more than one Market Participant. It would be amended to extend it to all market injection points.
- **Rule 230:** Rule 230 deals with the appointment of allocation agents or sub allocation agents for delivery points used by more than one Market Participant. The declared distribution system is mentioned in some places in this rule, but not consistently and is proposed to be amended to refer to the declared distribution system throughout, where relevant.
- **Rule 240(8):** As a drafting correction, the reference to 'the volume of gas in GJ' in rule 240(8) would be changed to 'the quantity of gas in GJ' because under rule 202(1), volume refers to cubic meters, and quantity refers to energy content.
- **Rules 259 and 260:** Rules 259 and 260 deal with default notices and suspension notices respectively and allow AEMO to apply conditions which may include restrictions relating to the declared transmission system. The rules would be amended to allow restrictions to relate to injections or withdrawals of gas to or from a declared distribution system.
- **Rule 267:** Rule 267 describes the application of the provisions relating to connection agreements. At present, it applies to connection agreements made after 15 March 1999, deemed connection agreements and requests to establish a connection or modify an existing connection after 15 March 1999. The rule would be deleted so that the provisions dealing with connection agreements apply to all connection agreements regardless of when they are made.
- **Subdivision 3 of Division 3:** The headings of Subdivision 3 of Division 3 and rules 287 and 289 would be updated to reflect other changes made to the subdivision.
- **Rule 287A (new):** Proposed new rule 287A provides for a Distributor to approve an alternative gas specification for a DDS injection point. It is modelled on rule 287 but with changes to reflect the role of the Distributor as both owner and operator of its system and to include requirements for:
  - AEMO to be a party to the agreement approving the specification where any part of the gas may be re-injected into the DTS, and
  - an adjacent distributor to be a party where any part of the gas may be injected into the other distributors declared distribution system
- **Rule 288:** Rule 288 deals with the provision of gas quality monitoring systems. Under the draft rule, it would be deleted and provisions dealing with gas quality monitoring would be moved to a new Subdivision 3.1 of Division 3.
- **Rule 289A (new):** Proposed new rule 289A requires each Registered Participant to use its reasonable endeavours to ensure that guess it injects into a declared distribution system at a DDS injection point complies with the gas quality specifications, provides for steps to be taken where there is off specification gas and allows the Distributor to accept delivery of off specification gas subject to the conditions in the rule.

- **Subdivision 3.1 of Division 3 (new):** Proposed new Subdivision 3.1 of Division 3 would deal with gas quality monitoring. It provides for AEMO to make gas quality monitoring procedures, allocates responsibility for gas quality monitoring arrangements at market injection points and other points on a declared system, sets out the obligations of the person responsible for gas quality monitoring at those points (the responsible gas quality monitoring provider), sets out the obligations of Market Participants with respect to gas quality monitoring, and sets out the minimum requirements for gas quality monitoring systems and gas quality monitoring plans. Gas quality monitoring is discussed in more detail elsewhere in this draft determination.
- **Rule 290(6):** Rule 290 deals with the obligations of Market Participants in relation to metering installations at connection points on a DTS (subrules (1) and (2) and on a DDS (subrules (3) and (4)). The obligations include paying a share of costs (subrules (5) and (6). The current rule extends to the costs of operating and maintaining a gas quality monitoring system. The draft rule removes this from rule 290(6) and deals with cost recovery for gas quality monitoring in proposed new rule 289F.
- **Rule 291:** A minor drafting correction would be made to the heading of rule 291.
- **Rule 292(2):** Rule 292 specifies who is the responsible person for a metering installation. The draft rule proposes amending the provision to allow a connected party to elect to be the responsible person. These changes are explained in more detail elsewhere in the draft determination.
- **Rule 292A (new):** Proposed new rule 292A would require AEMO to make metering installation coordination procedures to provide for the obligations of the responsible person with respect to a range of matters relating to metering installations for settlement metering points.
- **Rule 293:** Rule 293 would be substantially amended to bring together and extend provisions setting out the key responsibilities of the responsible person with respect to the metering installations it provides. These include obligations to remedy defects, investigate issues identified by AEMO and notify affected Market Participants of issues affecting metering data. These changes are explained in more detail elsewhere in this draft determination.
- **Rule 294(1):** Rule 294 allows any affected Participant at its own cost to provide check metering at or near a point specified in the subrule. A reference to receipt points on a declared distribution system would be added to accommodate distribution injections.
- **Rule 295(1):** Rule 295 specifies the components of a metering installation and the requirement to be accurate in accordance with the procedures. Subrule (5) would be amended to clarify that the responsible person is required to ensure that its metering installations meet the requirements of the rule.
- **Rule 299:** Rule 299 deals with requirements for calibration of metering installations and currently applies only to metering installations at system points. The rule would be amended to extend it to all settlement metering points (that is, system points as currently defined, DDS injection points and points where gas flows between declared distribution systems).

- Other changes to the rule would delete provisions that have been moved (in modified form) to rule 293 or rule 316(4).
- **Rule 299(3):** Rule 299(3) provides for AEMO to review the calibration requirements at intervals not exceeding one year. This would be amended to intervals not exceeding five years and not more than once a year.
- **Rule 300:** Rule 300 deals with security of metering equipment. Changes to subrule (2) would ensure that it is clear the obligation to notify affected Participants of tampering with a metering installation extends to a responsible person that is not a Registered participant. Changes to subrule (3) would set a time limit of two business days for the responsible person to test the metering installation to ensure that the metering equipment remains accurate.
- **Rule 302:** Rule 203 deals with changes to parameters or settings within a metering installation that may affect the accuracy of metering data. Amendments would extend it to receipt points on declared distribution systems and require notice and confirmation to be given to the Distributor for those installations.
- **Rule 303(2A) (new):** A new subrule (2A) in rule 303 would require a metering installation at a market injection point on a declared distribution system to be capable of determining the energy content of gas flowing through the metering point unless otherwise agreed by AEMO and the responsible person. This is consistent with the existing requirement for DTS injection points in subrule (2).
- **Rule 303(5):** In rule 303, subrule (5) would be amended to allow the standards to be used to calculate the energy content of gas to be specified in the energy calculation procedures. A consequential change would be made to subrule (6).
- **Rule 304(2):** In rule 304, subrule (2) would be deleted and moved to rule 293(2) in modified form.
- **Rule 314(4)(a):** In rule 314, a minor change would be made to clarify that 'removal from service' of a metering installation includes temporary removal from service.
- **Rule 316:** Rule 316 deals with data used for settlements. The heading would be amended to better reflect the subject matter of the rule and drafting changes would be made to clarify the drafting in subrule (1). Subrule (3) would be moved to rule 293 and old rule 299(7) would become subrule (4).
- **Subdivision 5 of Division 3:** The heading to Subdivision 5 of Division 3 would be amended to reflect changes made elsewhere in the subdivision.
- **Rule 317A and 317B (new):** Proposed new rules 317A and 317B would set out the proposed new framework for information to be exchanged or other arrangements established between AEMO and Distributors where needed to perform their respective roles in relation to injections into a declared distribution system at a DDS injection point. Proposed rule 317A provides for AEMO to make new distribution operations coordination procedures. These procedures would cover the exchange of information and the arrangements for submission, assessment, acceptance and review of methodologies for determining supply point constraints at DDS injection points. Proposed rule 317B sets out

the detail of the framework for putting in place methodologies for determining supply point constraints at DDS injection points.

- **Rule 317C (new):** Proposed new rule 317C would confirm that a Distributor may curtail the injection of gas into its distribution system in accordance with its service contracts, the law, or for safety reasons and that this does not give rise to compensation under Part 19.
- **Rule 320(2):** Rule 320 deals with information to be included in each operating schedule. Consequential changes would be made to this rule so that it does not extend to declared distribution systems where that is not intended.
- **Rule 320(3):** Rule 320(3) specifies information to be published by AEMO for each scheduling interval in the previous gas day. Paragraph (c) would be extended to details of the total quantity of gas injected into a declared distribution system at a DDS injection point.
- **Rule 327B:** Rule 327B deals with the determination of capacity certificates zone and the allocation of injection and withdrawal points to zones. Amendments to rule 327B would provide for AEMO to determine the allocation of DDS injection points to entry capacity certificates zones.
- **Rule 344:** Rule 344 provides for Registered participants to claim compensation if there is market intervention. The right to compensation would be extended to DDS injections and the right to payment of a transportation tariff would be extended to the Distributor.
- **Rule 350:** Rule 350 provides for Registered participants to claim compensation in respect of gas injected into the DTS where an administered price cap is applied. The rule would be amended to extend it to injections into a DDS.

B.4 Schedule 4

- **Part 17 (new):** Proposed new Part 17 of Schedule 4 would set out the transitional rules. The approach to implementation, including the transitional rules, is explained in the implementation chapter of this draft determination.

C OTHER ISSUES RAISED IN THE CONSULTATION PAPER

This chapter covers the other issues outside of the proposed solution in the rule change request, specifically:

- the proponent's alternative solutions
- materiality considerations
- reduced scheduling intervals
- expected costs, benefits and impacts
- impact on the contracts market
- non-DTS pipelines.

C.1 Alternative solutions

The proponent outlined two alternative solutions that could be used to facilitate gas production and storage facilities within the DWGM:

1. Supply from the distribution connected facilities is managed contractually to retail customers outside of the DWGM
2. Supply from the distribution connected facilities is managed as a negative demand within the DWGM to offset supply from the DTS.

C.1.1 Proponent's view

The first option requires Victorian retailers to contract directly from the distribution connected facility to supply their own customers within that distribution network. The DWGM would keep its status quo, that is only covering the flows from the DTS. The proponent sees this solution as effectively the 'do-nothing' option.[323]

This option was not considered appropriate by the proponent for the following reasons:

- a limited number of possible customers available to each distribution supplier
- a lack of transparency
- creates demand uncertainty within the DWGM
- potentially increases retail market complexity.

These reasons are explored in further detail in section 9.1.1 of the consultation paper.

The second option keeps the same retailer arrangement described above, but the supply would then be bid into the market as a negative site-specific demand that reduces the locational demand. This solution would retain the existing demand forecast as the gas withdrawn from the DTS, with the forecast being effectively treated as a total consumption forecast that is offset by the negative locational demand.

323 Rule change request, p. 13.

The proponent considered this option to be more transparent and provide greater demand certainty when compared to managing the gas under contractual obligations. However, this solution still limits the number of possible customers, has the potential to increase retail market complexity and adds complexity to the DWGM with the introduction of negative demand.[324]

C.1.2 Stakeholder views

Option one: manage the supply from distribution connected facilities contractually

Stakeholder responses broadly disagreed with progressing option one as a potential solution for managing distribution injections:[325]

- AusNet outlined that the option of contractually managing the injection and blending of renewable gas into the DWGM would not lead to a scalable solution and would ultimately restrict the future growth in renewable gas networks.[326]
- ENGIE expressed that the proponent's preferred solution should be investigated and if there were any intractable issues then an alternative solution should be investigated.[327]
- APA did not consider that this option should be explored further as it would establish a secondary market for renewable gases in Victoria, which would likely increase complexity and reduce transparency.[328]
- Origin stated a key limitation of managing supply from distribution connected facilities contractually is that it would reduce the level of transparency of their operation and their impact on supply and withdrawals of the DTS.[329]

AEMO believes that Industry is best placed to comment on the suitability of this solution but notes that it is similar to the option AEMO outlined in section 3.4.2.[330]

Option two: manage the supply from distribution connected facilities as negative demand

Similar to option one, stakeholders generally considered that option two should not be progressed as a solution for managing distribution injections.[331]

- AEMO expressed that there would be complexity involved in implementing the solution if AEMO's market systems are unable to process negative values for demand. AEMO considered that the options proposed in their responses to gas scheduling in section 3.4.2 would be more preferable than this option.[332]

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324 Rule change request, p. 14.
325 Submissions to the consultation paper: AusNet, p. 8; ENGIE, p. 7; APA, p. 33; Origin, p. 4.
326 AusNet, submission to the consultation paper, p. 8.
327 ENGIE, submission to the consultation paper, p. 7.
328 APA, submission to the consultation paper, p. 33.
329 Origin, submission to the consultation paper, p. 4.
330 AEMO, submission to the consultation paper, p. 19.
331 Submissions to the consultation paper: AEMO, p. 19; AusNet, p. 8; Origin, p. 4; APA, p. 33.
332 AEMO, submission to the consultation paper, p. 19.

- AusNet, similar to their concerns for option one, did not consider that this solution would be scalable. AusNet reasoned that negative locational demand would increase complexity in an already complicated retail market if the scale of distribution injections reach more than a few per cent.[333]
- Origin outlined that option two could have implications for market efficiency as it may distort bidding or scheduling outcomes in the DWGM.[334]
- APA agreed with the proponent that this solution could add complexity to the DWGM and considers that it should not be explored further.[335]
- AGIG was the only stakeholder that expressed merit in exploring this alternative solution, but, noted that forecasting demand at the back end of the distribution network could be challenging due to the resolution of the metering.[336]

C.1.3 Analysis and Commission's position

Both alternative solutions require that the gas injected from a distribution connected facility be contracted with directly through a Victorian retailer. As outlined in stakeholders' submissions, this approach to managing distribution injections has many limiting factors, such as a lack of transparency and restrictions for the industry to grow.

The Commission, in making a draft rule for the registration of distribution connected facilities and their requirement to submit bids and be scheduled in the market, has included distribution connected facilities as part of the existing bidding and scheduling process. The Commissions reasoning for these draft rules is explained in section 3.2.4 and section 3.4.4.

C.2 Materiality considerations for distribution connected facilities

C.2.1 Proponent's view

The proponent suggested the AEMC consider whether production facilities that are smaller than what the current bidding rules allow for should be included within the market but have a reduced set of requirements, such as daily bidding and allocation amounts.[337]

C.2.2 Stakeholder views

Stakeholders broadly requested that further analysis is needed to determine if a materiality threshold is warranted, outlining that a threshold may be useful if existing facility requirements are unreasonable for distribution connected facilities.[338]

AusNet showed support for considering a materiality threshold as part of this rule change., stating that the rules should contain reasonable exemptions for the requirements on

333 AusNet, submission to the consultation paper, p. 8.
334 Origin, submission to the consultation paper, p. 4.
335 APA, submission to the consultation paper, p. 33.
336 AGIG, submission to the consultation paper, p. 8.
337 Rule change request, p. 11.
338 Submissions to the consultation paper: AusNet, p. 8; APA, p. 33; AEMO, p. 19; AGIG, p. 8; ENGIE, p.8; Origin, p. 4.

distribution connected facilities, as not to burden small proponents with operational and reporting requirements that are not justified by their benefits.[339]

On the other hand, APA agreed with the proponent that a materiality threshold could create market complexity and any materiality threshold would also likely influence investor behaviour when deciding the size or location of facilities.[340]

AEMO outlined that a fundamental issue to address is the policy basis for a materiality threshold and an exemption regime. Stating that any determination to include distribution connected facilities in the wholesale market should establish why the costs of market participation outweigh the benefits for certain facilities and not others.[341]

AEMO stated that if a materiality threshold is introduced for bidding, then consideration would need to be given to what the alternative arrangements would be for an exempt facility, as the energy injected by an exempt facility would still need to be catered for in settlement so systems and information exchange would still be required for an exempted facility.[342]

Additionally, AEMO identified that it may be challenging to determine an appropriate materiality threshold. This is because a facility below the threshold may not have a material impact on the market and system but, in aggregate, a large number of exempt facilities may affect market outcomes and system security, potentially undermining the basis for their exemption. AEMO also raised concerns about a potential regulatory loophole where facility nameplates are set below the regulated threshold to avoid market participation.[343]

AEMO was interested in industry views on whether facilities that produce below 1 GJ/hour are likely to eventuate in the near term and if it would be practical that such a facility would bid into the market. AEMO's systems currently cannot facilitate bids that are less than 1 GJ and has not assessed the change to facilitate bids below 1 GJ.[344]

AGIG noted that a materiality threshold could create market complexity or uncertainty, as identified by the proponent, but consider that a materiality threshold should be explored. In its view, distribution connected facilities are likely to be less flexible than transmission connected facilities in managing risk and support a reduced set of bidding and scheduling requirements for smaller production facilities. However, it considered that even smaller distribution connected facilities will likely exceed the 1 GJ bidding threshold.[345]

ENGIE expressed that, to the extent that there are material issues with applying the full set of bidding rules to smaller facilities, then a materiality threshold could be an appropriate way to manage those issues.[346]

339 AusNet, submission to the consultation paper, p. 8.
340 APA, submission to the consultation paper, p. 33.
341 AEMO, submission to the consultation paper, p. 19.
342 Ibid.
343 Ibid.
344 Ibid.
345 AGIG, submission to the consultation paper, p. 8.
346 ENGIE, submission to the consultation paper, p. 8.

Origin considered that the 1 GJ limit could potentially create a barrier to entry for smaller facilities but did not consider it would be appropriate to revise the limit at this time. This is because of the changes required to bidding systems to facilitate this change and the significant uncertainty around the future penetration and size of distribution connected facilities. In its view, a more prudent approach would be to assess whether a reduced set of bidding requirements could be applied to smaller distribution connected facilities, such as the aggregation of supply sources.[347]

C.2.3 Analysis and Commission's position

The Commission has analysed the barriers to entry for smaller facilities in section 3.4.3. After further consultation with stakeholders, the Commission does not foresee that the current bidding and scheduling rules would provide a meaningful barrier to entry for distribution connected facilities.

The Commission considers that the 1 GJ limit that exists within AEMO's systems is not likely to provide a meaningful barrier to entry for distribution connected facilities. The proposed AGIG facility at Albury-Wodonga is expected to produce 177 kg of hydrogen per hour, this production rate would be equivalent to an injection rate of 25 GJ/hr.[348] Jemena's proposed Malabar biomethane project in the Sydney STTM is expected to produce 200 TJ of biomethane a year, which would represent a production rate of 22.8 GJ/hr.[349]

Given this, the Commission has decided not to include a materiality threshold as part of its draft rule.

C.3 Reduced scheduling intervals

The scheduling process, as outlined in section 3.4.1 and in detail in the consultation paper, occurs at five predefined times within the day, with the first schedule at 6:00 am.[350] In the first schedule, gas is scheduled and a market price is determined for the entirety of the upcoming gas day. The subsequent schedules occur at intervals of four hours in which the scheduling instructions and market price for the balance of day are revised.[351]

C.3.1 Proponent's view

The proponent noted that distribution connected facilities may be more flexible in their operation, ramping up and down based on the NEM price and therefore the current schedule intervals could no longer be fit for purpose.[352]

347 Origin, submission to the consultation paper, p. 4.
348 Conversion is a rough estimate provided by AEMO. See AGIG's website: https://www.agig.com.au/hydrogen-park-murray-valley
349 Jemena, Review of environmental factors | Malabar biomethane, September 2021.
350 AEMC, *DWGM distribution connected facilities*, consultation paper, 21 October 2021, p. 45.
351 Ibid.
352 Rule change request, p. 11.

This flexibility may be better utilised with shorter scheduling horizons to allow for more frequent rebidding, however, the proponent noted that this is not a short-term consideration and may be a longer-term matter.[353]

C.3.2 Stakeholder views

Stakeholders expressed that any changes to the current scheduling intervals would be more appropriately dealt with in a separate rule change.

AEMO expressed that this issue could be considered in the future, potentially as part of the next phase of the hydrogen framework review, as it is probably more appropriate to consider this option as part of a holistic review of the DWGM's market design.[354]

Origin did not believe it would be appropriate to increase the number of scheduling intervals in the DWGM, outlining that this would represent a fundamental change to the existing market framework and therefore need to be predicated on addressing a material market inefficiency, rather than seeking to provide a new participant category with additional flexibility to rebid injections into the market.[355]

AGIG, ENGIE and APA also expressed that this issue should be considered as part of a separate rule change process.[356]

C.3.3 Analysis and Commission's position

The Commission recognises that reducing the scheduling intervals would represent a material change in the operation of the current DWGM market. The rule change submitted by the proponent focused on facilitating distribution connected facilities within the DWGM market as it is currently set up. Given this, the Commission has made a draft rule not to make any changes to the current scheduling intervals.

C.4 Expected costs, benefits and impacts of the proposal

Changes made through this rule change are likely to incur costs for AEMO, existing and new market participants.

C.4.1 Proponent's view

The proponent did not provide a cost estimate to implement the proposed changes required to facilitate the preferred solution. Instead, it noted the benefits of the proposal, which would enable the energy transition as envisioned through the Victorian government's publications.[357]

The proponent noted that there will be costs associated with enabling this change but considered that the long-term costs that would be associated with doing nothing would be higher than the costs of the proposed solution.

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353 Rule change request, p. 11.
354 AEMO, submission to the consultation paper, p. 20.
355 Origin, submission to the consultation paper, p. 4.
356 Submissions to the consultation paper: AGIG, p. 10; ENGIE, p. 10; APA, p. 34.
357 Rule change request, p. 10.

C.4.2 Stakeholder views

The Commission, through the consultation paper, welcomed stakeholder feedback on the costs, potential benefits and impacts of the proposed solution and under a 'do nothing' approach.

Expected costs associated with the proposed solution

AEMO expressed that it was difficult to provide an assessment of cost until the options are further defined and preferred options have been identified. AEMO considered that the areas most likely to drive cost are:[358]

- bespoke changes to wholesale and retail settlement systems
- additional data exchanges between AEMO, participants and facility operators
- changes to scheduling and demand forecast systems.

AEMO expects that, under the current framework, any additional costs for AEMO from implementation would be recovered through market fees, which may require a transitional rule change to the *Gas markets participant fee structure*.[359]

AGIG expects that there are likely to be costs associated with the proposed changes, such as operational costs, but given that there is likely going to be a small number of facilities at the early stages of market development, these costs are likely to be minimal. AGIG supported mechanisms to minimise costs, particularly for new participants.[360]

ENGIE proposed that existing market participants would not likely face significant additional costs, as the proposed changes in the rule change request would be expanding existing rules applicable to the DTS. However, ENGIE outlined that is it hard to evaluate costs for new market participants without a counterfactual of an alternative solution, but if costs were a significant barrier, then that could inform the decision on a materiality threshold.[361]

Impacts of the proposed solution and the 'do nothing' scenario

AGIG expressed support for the proposed solution to be a streamlined, consistent and transparent process for facilitating the integration of distribution connection facilities into the market and minimise the associated costs. AGIG also outlined that the 'do nothing' option may be more efficient in the short term for trading natural gas equivalents in facilitated markets, such as the DWGM and STTM, and the provision of blends increases in volume and decreases in cost, the operation of two parallel market processes may create material inefficiencies.[362]

AGIG agreed with the proponent's assertion that the long-term costs of inaction are greater than the costs associated with the proposed solution. It suggested that renewable gases represent a significant opportunity for Victoria to achieve its emission reduction targets while making use of Victoria's extensive gas network and minimising costs. AGIG argued that

358 AEMO, submission to the consultation paper, p. 20.
359 Ibid.
360 AGIG, submission to the consultation paper, p. 11.
361 ENGIE, submission to the consultation paper, p. 10.
362 AGIG, submission to the consultation paper, p. 11.

because of Victoria's reliance on natural gas for heating and industry, the state has the greatest potential need and market for green hydrogen, and the greatest potential to benefit by making use of existing gas infrastructure in lowering the costs of the transition overall.[363]

ENGIE also supported the proponent's proposed solution, stating that it will facilitate the development of hydrogen and biomethane sectors (and potentially other gases). It noted that national and jurisdictional hydrogen strategies envisage a rapid ramp up in production and consumption, including new production methods, new end use cases and the creation of an export market. ENGIE outlined that the characteristics of hydrogen and biomethane production mean that they require an avenue to connect into the distribution system, with this not possible under a 'do nothing' scenario.[364]

ENGIE could not specifically evaluate the costs of the proposed solution compared to the 'do nothing' scenario but argued that given the clear policy intent to facilitate the development of these industries, it would be somewhat dysfunctional to prevent this development because of the difficulties in carrying out a robust cost-benefit analysis.[365]

APA outlined that the 'do nothing' scenario could inhibit the growth of the renewable gas market and suggests that the AEMC consider the cost-effectiveness of the proposed changes, including how these will be recovered from participants and customers.[366]

C.4.3 Analysis and Commissions position

Throughout the Commission's analysis and decision for its draft rule, the expected costs of the potential solutions are assessed against the expected benefits, with regard to the NGO and assessment framework as outlined in section 2.3. Detailed analysis of the impact of proposed changes is outlined through section 2.4.

The Commission notes that stakeholders were unable to provide a detailed assessment of the costs involved with the proposed solution compared to the do-nothing option. Despite this, stakeholders showed support that the direction of the proposed solution is likely to minimise associated costs with these costs expected to be minimal.[367]

C.5 Contracts market

Despite the impact of distribution connected facilities on the contracts market was not directly raised within the rule change request, the Commission outlined in the consultation paper that, with the introduction of distribution connected facilities, existing contracted positions for offtake from the DTS may be subject to delivery risk.

Additionally, distribution connected facilities may inject gas of a different composition to that which is contracted, which could have impacts depending on the end-user of the gas. For example, a change to the gas specification under the NGL/NGR framework may trigger a

363 AGIG, submission to the consultation paper, p. 11.
364 ENGIE, submission to the consultation paper, p. 10.
365 Ibid. p. 11.
366 APA, submission to the consultation paper, p. 34.
367 Submissions to the consultation paper: AGIG, p. 11; ENGIE, p. 10.

change to the gas transportation agreement or gas supply agreement specifications depending on the terms of the contract, or even trigger other contractual provisions such as a change in law or force majeure.[368]

C.5.1 Stakeholder views

Origin noted that it is difficult to evaluate the impact of the proposed rule on the contracts market given many of the concepts were yet to be fully defined. However, Origin agreed with the AEMC that changes to the gas specification under the NGR and NGL may trigger a change to existing contracts depending on the terms of those contracts.[369]

Additionally, Origin raised concerns that existing contracted positions for off-take from the DTS could also be subject to additional delivery risk. This is because the distribution connected facilities may impact how constraints are applied and the level of congestion and scheduling outcomes more broadly.[370]

ENGIE agreed that the issue of gas specification may need further consideration, but outlined that this will be addressed through other, concurrent processes.[371]

The AEMC has consulted with the Australian Securities Exchange (ASX) energy team who outlined that, as long as the process for determining the price remains the same, there should be no impact on the ASX listed contracts.

C.5.2 Analysis and Commission's position

A change to the gas specification under the NGR or NGL may trigger a change to the existing contracts, however, the Commission notes that the changes to the gas specification have already been made at a jurisdictional level. Additionally, existing contractual arrangements are confidential between each party and may vary in nature for each individual arrangement.

The Commission understands that the inclusion of distribution connected facilities may have an impact on delivery risk, however, these risks are not fully known and are not expected to be material given the size of distribution connected injections in the short term.

The Commission considers that the proposed rule, as outlined throughout this determination, is not likely to have a material impact on existing contracted positions. Given this, and the initial indication from the ASX, the Commission has not made any amendments in the NGR or through its transitionals to address the impact on existing contracts.

368 AEMC, *DWGM distribution connected facilities*, consultation paper, p. 47.
369 Origin, submission to the consultation paper, p. 4.
370 Ibid.
371 ENGIE, submission to the consultation paper, p. 11.

D SETTLEMENT AND TUOS

The introduction of distribution connected facilities means that adjustments are required to the figures used for TUoS calculations. The AEMC analysed two different options presented by AEMO on TUoS calculation adjustments, which are explained below.

Option 1: treating additional DDS injections as a 'DTS financial injection' to reduce the amount of TUoS charge the injecting retailer must pay

A retailer injection into the DDS means that the retailer no longer requires as much gas allocated to it from the DTS. The gas allocated to the retailer from the DTS is adjusted to reflect the DDS injection. This allows the injecting retailer to reduce their TUoS payment.

In option 1, when the retailer injects more than it withdraws from a DDS, the additional injection is treated as a 'financial injection' into the DTS (like a 'backflow'). The injecting retailer receives the full benefit of the DDS injection in terms of TUoS reduction.

This option gives the injecting retailer an incentive to invest in a distribution connected facility to reduce its own TUoS payment. Additionally, injecting facilities can contract with retailers outside the physical pipeline location for their injections.

Option 2: spreading additional DDS injections to other retailers to reduce the TUoS charge of all retailers within the DDS pipeline where the injection occurred

As noted above, a retailer injection into the DDS means that the retailer no longer requires as much gas allocated to it from the DTS. The gas allocated to the retailer from the DTS is adjusted to reflect the DDS injection. This allows the injecting retailer to reduce their TUoS payment.

In option 2, when the retailer injects more than it withdraws from a DDS, the additional injection is distributed among the other retailers in the DDS on a pro-rata basis. Other retailers in the DDS, therefore, share some of the benefits of the DDS injections in terms of reduced TUoS.

Under this option, non-injecting retailers benefit from the investment made by the injecting retailer. Additionally, calculations used for TUoS occur on a DDS-specific basis, in isolation from the rest of the market. This creates an inconsistency in the DWGM as a gross pool market.