

19 May 2022

Mr Harrison Gibbs
Advisor
Australian Energy Market Commission
Sydney South NSW 1235
By online submission

Dear Mr Gibbs

AEMO Submission to DWGM distribution connected facilities rule change draft determination

The Australian Energy Market Operator (AEMO) welcomes the opportunity to comment on the Australian Energy Market Commission's (AEMC) draft determination for the Declared Wholesale Gas Market (DWGM) distribution connected facility rule change.

AEMO supports accommodating distribution connected facilities, such as hydrogen and biogas production facilities, into the DWGM. AEMO notes that while fundamental changes to the market design are not being considered as part of this rule change, the proposed changes in the draft rules nonetheless represent a significant change to the scope of the DWGM.

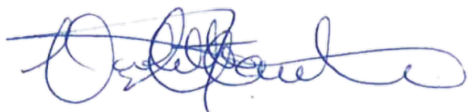
In reviewing the draft determination, AEMO has identified several issues for the AEMC to consider ahead of its final determination. Our observations in this submission include comments on:

- Registration categories for distribution connected facilities
- The approach for bidding and scheduling distribution connected facilities
- The gas quality standards framework for Victoria
- Managing constraints at distribution connected facilities
- Coordinating maintenance across distribution and transmission connected facilities in Victoria

AEMO also notes that the draft determination recommends a commencement date of October 2023 with a six-month lead time for changes to existing Procedures and a three-month lead time for new Procedures. Given the extent of change proposed by this rule change coupled with the large number of regulatory changes expected to the gas markets over the next 24 months, AEMO considers the proposed timeline will be challenging to meet. Ahead of the final determination, AEMO is seeking to work with the AEMC and industry to determine a pragmatic and achievable implementation timeline for this rule change that also considers the large number of changes that are being developed and implemented in parallel to this rule change.

AEMO has appreciated the opportunity to work closely with the AEMC's project team ahead of the publication of the draft determination. AEMO looks forward to continuing to work with the AEMC as it develops its final determination for this rule change. Should you require additional information please feel free to contact Nicholas Pope, Principal Analyst at Nicholas.Pope@aemo.com.au.

Yours sincerely



Violette Mouchaileh
Executive General Manager – Reform Delivery

Attachments:

Attachment A – Submission

Attachment A – Submission

Registration categories for distribution connected facilities

The draft determination recommends creating a single new registration category for all distribution connected facilities. AEMO notes that the proposed approach does not differentiate between a distributed-connected production, storage or blend processing facility. This is different from the approach taken in the NGR for transmission-connected facilities where production and storage facilities are categorised separately.

After further considering the draft determination, AEMO's view is that separate registration categories for different types of facilities would be beneficial. Separate categories would enable the Rules and Procedures to provide for specific requirements for each type of facility as well as providing consistency between transmission-connected and distribution-connected facilities.

Different Procedure or Rule requirements may be necessary to reflect the different physical characteristics of these facilities and to accommodate them in the market. For example, a blend processing facility will withdraw natural gas and immediately re-inject a natural gas hydrogen blend. Whereas a facility producing hydrogen (and blending in-pipe) will only inject into the market.

A storage facility on the other hand will be able to net-withdraw from the system and store that gas for re-injection later. The metering requirements, accreditation and bidding arrangements at these types of facilities may need to be different and this would need to be reflected in the NGR and Procedures. Creating separate categories for each type of facility will allow for flexibility in the Procedures (and NGR) to accommodate different facility types over time.

Participation of distribution connected facilities in scheduling

The approach in the draft determination requires:

- That demand forecasts include all gas that is withdrawn from a declared network and;
- that any gas that is injected from a market injection point (including a point on a DDS), is required to be bid into the market.

AEMO understands that this approach would mean that distribution connected blend processing facilities (which is a facility that withdraws natural gas, blends it with hydrogen and then re-injects a natural gas hydrogen blend) would be required to submit a demand forecast for its consumption and a separate injection bid for its supply to the market and, in each case, for a gross quantity of gas. Under the current market design, the demand forecast and injection bid would be independently submitted and not jointly scheduled.

The key issue with this approach is that it does not reflect that withdrawals and injections for a blend processing facility are assumed to be interdependent. That is, the amount a blend processing facility will withdraw ultimately depends on how much it injects. This in turn will depend on whether the injection bids at the facility are scheduled in the market, which will not be known until after the schedule has been published.

This dynamic has the potential to affect market outcomes. Consider the case for a blend processing facility with a 10% blend ratio. The facility bids to inject 11 TJ of blended gas. To create this blend it needs 10 TJ of natural gas and so submits a demand forecast for 10 TJ. However, if the facility is only scheduled in merit order for 5.5 TJ of injections the facility would now only need to withdraw 5 TJ of natural gas to create a blend of 5.5 TJ to meet its scheduled quantity. This scenario would mean that:

- The participant would have a deviation of 5 TJ for its demand forecast that it never uses (demand forecast of 10 TJ but only withdraws 5TJ). This exposes the participant to market risks (including uplift exposure) that may be difficult to manage.
 - Because of this dynamic, participants at blend processing facilities would likely want their demand forecast (withdrawals) to be scheduled based on their scheduled injections however this would not be possible under the current market design or scheduling process.
- The market would be “overscheduled” by 5TJ to supply demand that never manifests. Holding everything else constant this would result in the market price being suppressed at the next schedule and would impact the linepack account. As such the artificial demand created by the blend processing facility affects market outcomes for all participants.
- Market parameters such as the demand forecast override methodology and linepack account use demand (and in the case of the linepack account deviations) as an input. Demand forecasts that do not reflect genuine consumption have the potential to skew these processes and a methodology would need to be developed to accommodate a demand forecast from a blend processing facility, which is an unnecessary complication.

The key issue is that the gas used for blending is not being consumed, it is in fact being immediately re-injected. Therefore it is not appropriate to include this gas in a demand forecast. If it is included in the demand forecast then broader changes to the market design may be required to ensure that market outcomes remain accurate and fit for purpose.

The requirement to bid for both withdrawals and injections would also result in throughput fees being levied twice on what is essentially the same flow of gas unless additional changes were then made to billing and market systems to address this.

Instead of submitting a separate injection bid and demand forecast, an alternate approach could be to have blend processing facilities submit an injection bid for the net quantity of gas (energy) they intend to inject into the market. Using the previous example, the participant at the facility would now submit a bid of 1 TJ (1 TJ of hydrogen blended with 10 TJ of natural gas) as this reflects the net amount of energy the participant is seeking to inject into the market. As in the previous example, the participant is only scheduled for half of its bid or 500 GJs. However, as the market is being scheduled based on the participants net injection bid, there is no impact to the demand forecast or the price or outcomes in subsequent schedules. In this example the market outcomes reflect the actual demand and supply balance and the participant is able to effectively manage its market exposure through its injection bid.

While a blend processing facility would not be required to submit a demand forecast under this proposed change, it is important that a blend processing facility is recognised as a class of facility. It is foreseeable that a blend processing facility could manage the injection of hydrogen from more than one distributed-connected production facility so it would have operational responsibilities including gas quality management.

AEMO has not reviewed the extent of changes to the Rules and Procedures that may be required to facilitate net bidding. However important considerations would include specifying which facilities are eligible for net bidding, the metering requirements for injections and withdrawals and the allocation arrangements. AEMO would welcome the opportunity to work with the AEMC in determining the requirements for managing net bidding in the NGR and Procedures ahead of the final determination.

Gas Quality Standards

The draft determination recommends that each declared distribution network have a separate gas quality standard set by the distributor, with each distributor able to deviate from the standard by agreement with connecting parties and other affected participants. AEMO notes that this approach will mean that there will be

multiple different standards across Victoria and potentially different standards between the Declared Transmission System (DTS) and Declared Distribution Systems (DDSs).

There are potential shortcomings from having multiple standards including:

- Multiple conflicting standards may undermine investment and participation in the gas market.
- A lack of transparency if standards are not subject to consultation or publication.
- Impact on end use applications for consumption from having multiple standards to comply with including differing equipment, installation, and appliance requirements

Because of these issues and, as expressed in our submission to the consultation paper, AEMO believes that a single standard is required across the DTS and DDSs. A single standard will still be able to accommodate differences in gas specification e.g. due to physical limitations. This single standard could be developed through a collaborative industry process involving AEMO, distributors, facility operators and market participants. This is similar in nature to the single engineering framework being developed in the National Electricity Market (NEM).

Constraints at distribution connected facilities

The draft determination accords distributors with the responsibility for determining distribution constraints and communicating these constraints to AEMO for use in scheduling. Draft Rule 317B requires distributors to determine and publish a methodology for constraints that may apply to DDS injection points on its network. AEMO must also approve the methodology. It is not clear from the draft rule whether a separate methodology would apply for each distribution connected facility or whether a single methodology would be developed for each network (encompassing all facilities in that network).

AEMO believes it would be preferable to have a single methodology for each network that is amended from time to time to include new facilities. A single methodology should explain the constraint interactions across the network and where relevant at each connecting facility. AEMO also considers that a single methodology will make it simpler to assess whether the proposed approach is meeting the requirements of Draft Rule 317B(3):

"A Distributor must ensure that its constraint methodologies, alone or in combination, do not result in outcomes that are inconsistent with the principle that operating schedules which specify injections and withdrawals for each hour of the gas day should do so in a way that minimises the cost of satisfying expected demand for gas over that gas day."

A single methodology on a network should be able to show how constraints would be managed individually and collectively for all facilities in that network, similar to how supply demand point constraints (at an individual facility) and net flow transportation constraints (for a group of co-located facilities) are determined for the DTS.

If separate methodologies are used for each facility it may be difficult to demonstrate and develop methodologies for managing the interactions between facilities in a distribution network. In addition, having an individual methodology per facility may become more administratively and technically complex over time as more facilities connect to the network. Each time there is a new connection to a network every individual agreement on that network may require review and modification.

Maintenance coordination

The draft rule excludes distribution connected facilities from the maintenance coordination and planning process administered by AEMO under Rule 326. Rules 326 only apply to DWGM facility operators and the

approach taken in the draft excludes distribution connected facilities from this definition. In addition, by not including the facilities under the DWGM facility operator definition, only a subset of information will be provided for the VGPR under Rule 324 by distribution connected facilities (unlike their transmission counterparts which provide a full set of information). The information provided under Rule 324 is used in administering the maintenance coordination process under Rule 326.

AEMO believes that this exclusion could become problematic in the future. A key part of maintenance planning is an assessment of supply adequacy in Victoria. If distribution-connected injections become a material share of overall supply but they are excluded from the maintenance planning process, then AEMO will not be able to undertake the required assessment of the supply-demand balance for the DTS including supply into the DDSs, which AEMO is responsible for managing. This has the potential to undermine the maintenance planning process and increase the risk of supply disruptions if distribution-connected injections become a material share of overall supply.

AEMO considers that it would be prudent to include these facilities in the framework from commencement. In the near term, when distribution connected supply does not make up a material share of overall supply there may only be a limited need to coordinate maintenance at distribution facilities. As such, initially these facilities may just be providing outage information as required under rule 324(4).

Implementation

The Draft Determination suggests a commencement date of October 2023 for the new rules. In addition, the transitional rules require that amendments to current Procedures are completed no later than six months ahead of the commencement date and new Procedures three months ahead of the commencement date.

In addition to this rule change, there are several overlapping proposed changes to the gas markets for 2023 and 2024 including:

- Implementation of gas transparency measures
- Changing the Victorian heating value allocations from state-wide to zonal heating values for basic meters
- Implementing the recommended changes from the Renewable Gases and Hydrogen Framework Review
- Potential changes arising from the *Review of Wallumbilla Gas Supply Hub and pipeline capacity trading framework*.
- Development for the NEM 2025 project¹ and inflight NEM changes.

Given the significant number of changes AEMO and industry are expected to deliver to gas market Procedures and systems over the next 24 months, AEMO considers that the proposed timelines to meet an October 2023 commencement date would be costly and challenging to meet. If there is an early implementation date then partial implementation or transitional rules to stagger delivery may be required. Otherwise, a later delivery date may need to be considered for the whole package.

In addition, due to the scope of changes proposed in the draft rule, AEMO initial assessment is that all DWGM Procedures will need to be reviewed and many will need to be amended.

¹ AEMO has published a draft NEM 2025 Implementation Roadmap on its website [AEMO | Reform Delivery Committee](#)

Changes to most existing Procedures are likely to be definitional or scope related in nature to bring them into line with the changes in the NGR. As such, they are unlikely to have any impact on participant systems and therefore participant readiness. Accordingly, AEMO considers it would be more practical to have a three-month lead time for all Procedures (current and new) ahead of the commencement date in collaboration with industry.

AEMO would welcome the opportunity to work with the AEMC and industry to develop a pragmatic and achievable implementation timeline that considers the likely commissioning date for any new distribution connected facilities.