



Response template for PPC on DWGM Procedure changes for Hydrogen and DCF Rule Changes

Email responses to: GWCF_Correspondence@aemo.com.au

Review comments submitted by: *Australian Gas Infrastructure Group (AGIG), Australian Gas Networks (AGN), Multinet Gas Networks (MGN)*

Confidential: No

Date: 23 October 2023

Contact Person: Troy Praag

Please complete sections 1 and 2.

Section 1 - General Comments on the Procedure changes

Topic	Potential Issues
General Comments Does your organisation support AEMO's assessment of the proposal? If no, please specify areas in which your organisation disputes AEMO's assessment (include PPC section reference number) of the proposal and include information that supports your organisation's rationale why you do not support AEMO's assessment.	
Wholesale Market Connection Approval Procedures	No comment

<p>Wholesale Market Distribution Procedures, which include:</p> <ul style="list-style-type: none"> - Distribution Operational Coordination Procedure - Net Bidding Procedures 	
<p>Wholesale Market Gas Quality Procedures</p>	<p>We have made several detailed comments below. More generally we note that references to embrittlement are not accurate for the distribution system and care should be taken to ensure these references do not extend to the distribution system. See for example section 4.2 of Australian Hydrogen Centre 100% Hydrogen Distribution Networks: Victoria Feasibility Study https://arena.gov.au/assets/2023/09/AHC-100-Hydrogen-Distribution-Networks-Victoria-Feasibility-Study.pdf</p> <p>We also have concerns that the approach to contaminants/impurities may lead to an inflexible approach overly reliant on outdated standards for biomethane and/or failing to take account of verified electrolyser performance in the case of hydrogen. See detailed comments below.</p>
<p>Wholesale Market Maintenance Planning Procedures</p>	<p>No comment</p>
<p>Wholesale Market Management Procedures, which include:</p> <ul style="list-style-type: none"> - Additional Reporting Procedures - Electronic Communication Procedures - Gas Ownership Rules - Rule Consultation Procedures 	<p>No comment</p>
<p>Wholesale Market Metering Procedures, which include:</p> <ul style="list-style-type: none"> - Metering Uncertainty Limits and Calibration Requirements Procedures - Energy Calculation Procedures - Metering Communications Procedures - Installation Database Procedures 	<p>No comment</p>

<ul style="list-style-type: none"> - Metering Installation Coordination Procedures - Metering Register Procedures - Data Validation Procedures 	
<p>Wholesale Market Operation Procedures, which include:</p> <ul style="list-style-type: none"> - Accreditation Procedures - Administered Pricing Procedures - Capacity Auction Procedures - Capacity Trading Procedures - LNG Reserve Procedures - Gas Scheduling Procedures 	No comment
<p>Wholesale Market Settlement Procedures, which include:</p> <ul style="list-style-type: none"> - Ancillary Payment Procedures - Uplift Payment Procedures - Compensation Procedures - DUAFG Procedures 	Detailed comments below.
Wholesale Market System Security Procedures	No comment

Section 2 – Specific Questions from PPC

Topic	Please Provide Response Here
<p>Question 1: Do participants consider the 5TJ/d constraint materiality threshold for inclusion of a constraint in the scheduling window? For the avoidance of doubt, this proposal applies to distribution connected facilities (under the distribution operational coordination procedure) and to DTS connected facilities (under the gas scheduling procedures).</p>	
<p>Question 2: Do participants consider the 5TJ/d constraint materiality threshold for sending a SWN is appropriate as AEMO already publishes all constraints at schedule approval? For the avoidance of doubt, this proposal applies to distribution connected facilities (under the distribution operational coordination procedure) and to DTS connected facilities (under the gas scheduling procedures).</p>	
<p>Question 4: Do Registered Participants agree that a 3 monthly communication limit is appropriate for routine notifications concerning Responsible Persons notifications under rules? If not please nominate a alternate timeframe (including a justification) for routine communications?</p>	

Section 3 - Feedback on the documentation changes in the Procedures

Participants are to complete the relevant columns below in order to record their response.

Wholesale Market Connection Approval Procedures

Procedure Clause #	Issue / Comment	Proposed text Red strikeout means delete and <u>blue underline</u> means insert	AEMO Response (AEMO only)

Wholesale Market Distribution Procedures (including Distribution Operation Coordination Procedures and Net Bidding Facility Procedures)

Procedure Clause #	Issue / Comment	Proposed text Red strikeout means delete and <u>blue underline</u> means insert	AEMO Response (AEMO only)

Wholesale Market Gas Quality Procedures

Procedure Clause #	Issue / Comment	Proposed text Red strikeout means delete and <u>blue underline</u> means insert	AEMO Response (AEMO only)
2.4.3	<p>We note that although the contaminants listed may exist at very low concentrations, however as the DNV Hydrogen Purity study and standard makes clear the hydrogen produced through electrolysis would meet the adopted standard in Section 3.2 Implications of the Proposed Hydrogen Purity Standard with the following statement "Hydrogen produced by electrolysis and then dried will meet this standard."</p> <p>This is further corroborated in Section 3.3.1 of the report on hydrogen production routes via electrolysis and their associated impurities. Given the above there would not be any benefit sampling hydrogen from electrolysis for those contaminants that would fall well within the range presented by the proposed DNV Hydrogen Purity Standard.</p> <p>Most electrolysis would likely to achieve ISO 14687-2 which would have magnitude lower contaminant levels and this would be in significant contrast to the contaminants likely to exist within the natural gas stream.</p>		
2.4.4	<p>AGIG recommends utilising updated resources which have been developed using evidence based approach subsequent to the formation of EN 16723. EN 16723 has not been adopted in other regions due to issues associated with the standard. It is noted that Future Fuels CRC (RP3.2-09) researched 13 international standards and found that contaminants within biomethane were not uniformly addressed across the</p>		

	<p>standards i.e. Gas Networks Ireland – Biomethane Producers Technical Handbook (includes a Biomethane Specification) Biomethane-Producers-Technical-Handbook.pdf (gasnetworks.ie) was released in 2020.</p> <p>We note that while EN 16723 is an appropriate starting point, however, the standard which is currently seeking an update. It is also noted that contaminants are dependant on biogas sources and a majority of those contaminants listed would be landfills and wastewater treatment plants. The testing regimes for some listed contaminants may also not be possible on-line or in Australia as such compliance to interval sampling would not be possible. When adopting limits, we recommend that AEMO use caution as there are wide variations on appropriate concentrations limits in addition to factoring in the appropriate dilution of the biomethane within the existing natural gas flow.</p>		
2.4.4 “and its compounds”	<p>The uses of “and its compounds” against several elements are unclear or undefined. Several have wide ranging underlying compounds that would have significant impact on cost of analysis, these are also directly extracted from EN 16723. However, the table in EN 16723 is used only as an “example of common practices” as per C.3 of EN 16723. It is noted that the Table 1 of EN 16723 is more applicable as it clearly states “Table 1 – Applicable common requirements and test methods for biomethane at the point of entry into H gas and L gas networks”</p>		
2.4.4	<p>Some contaminants listed are likely to exist within the natural gas supply, existing concentrations of polycyclic aromatic hydrocarbons and monoaromatic hydrocarbons such as benzene, toluene, ethylbenzene and xylene are likely to exist within natural gas.</p>		

	<p>Section 2.4.4 – We would recommend the following contaminants would be more appropriate and much clearer to set clear limits:</p> <p>Ammonia</p> <p>Heavy Metals:</p> <p>Mercury</p> <p>Arsenic</p> <p>Volatile Organic Compounds (VOC):</p> <p>Benzene</p> <p>Toluene/Xylene</p> <p>Fluorine</p> <p>Chlorine</p> <p>Semi Volatile Organic Compounds (SVOC):</p> <p>Limonene</p> <p>Pinene</p> <p>Halocarbons</p> <p>Total Siloxanes (as Si)</p> <p>Total Bacteria</p> <p>AS4564 will seek to adopt guidance for biomethane contaminants and it is recommended that this section allows compliance with any subsequent revision of AS4564.</p>		
2.5.2	<p>Compliance with interval sampling may not be possible for listed contaminants in Section 2.4.4 as some contaminants require special laboratory analysis, offline sampling should be acknowledged here.</p>		
2.5.4	<p>It is unclear whether site specific low and high limits and Confirm, Notify, Mitigate and Curtail limits would</p>		

	be provided for biomethane and hydrogen, clarification to be provided.		
2.6.1	on-line gas quality monitoring would not be available for some contaminants in Section 2.4.4		
2.8.2	Section 2.8.1 states "Offline or manual measurement of gas quality specifications parameters must be provided to AEMO in timely manner, or at such times AEMO agrees (provided that the measurement is within the gas quality specifications)" but rule 289G(3) requires continuous communication, can a caveat for offline measurements be inserted or repeated in this section.		
2.8.4	This provision should include an allowance for offline measurements.		
2.8.8	With the inclusion of offline contaminants in 2.4.4, it is noted that existing laboratory methodologies have measurement uncertainties for some of these contaminants due to reporting limits and sampling complexities.		

Wholesale Market Maintenance Planning Procedures			
Procedure Clause #	Issue / Comment	Proposed text Red strikeout means delete and <u>blue underline</u> means insert	AEMO Response (AEMO only)

--	--	--	--

Wholesale Market Management Procedures (including Additional Reporting Procedures, Electronic Communication Procedures, Gas Ownership Rules Procedure and Rule Change Consultation Procedures)

Procedure Clause #	Issue / Comment	Proposed text Red strikeout means delete and <u>blue underline</u> means insert	AEMO Response (AEMO only)

Wholesale Market Metering Procedures (including the Metering Uncertainty Limits and Calibration Requirements Procedures, Energy Calculation Procedures, Metering Communications Procedures, Installation Database Procedures, Metering Installation Coordination Procedures, Metering Register Procedures and Data Validation Procedures)

Procedure Clause #	Issue / Comment	Proposed text Red strikeout means delete and <u>blue underline</u> means insert	AEMO Response (AEMO only)

Wholesale Market Operation Procedures (including the Accreditation Procedures, Administered Pricing Procedures, Capacity Certificate Auction Procedures, Capacity Certificate Trading Procedures, LNG Reserve Procedure and Gas Scheduling Procedures)			
Procedure Clause #	Issue / Comment	Proposed text Red strik means delete and <u>blue underline</u> means insert	AEMO Response (AEMO only)

Wholesale Market Settlements Procedures (Including the Ancillary Payment Procedures, Uplift Payment Procedures, Compensation Procedures and DUAFG Procedures)			
Procedure Clause #	Issue / Comment	Proposed text Red strik means delete and <u>blue underline</u> means insert	AEMO Response (AEMO only)

5.4.1	The timing of these reports may also be delayed by special revisions issued by AEMO.	"The dispute resolution processes and Special Revisions issued by AEMO may cause this process to be extended."	
5.6.1 (third bullet)	Currently Settlement notifications don't nominate an "agreement date" they just nominate a date that the pricing file will be published.	"AEMO will send a settlement notification stating a later date for agreement of the final withdrawal data on which pricing data will be published for the DUAFG period where Special Revision settlement occurs."	
5.6.1 formula "H ="	Withdrawals are determined by distributors and agreed to by market participants – not advised by AEMO.	"H= the quantity of gas withdrawn by the <i>Distributor for Market Participants</i> at all Class B <i>supply points</i> for the DUAFG period as advised by AEMO. "	
5.6.5	AEMO can only issue the final DUAFG reconciliation amounts after distributors and market participants have agreed on draft reconciliation amounts.	" Once Distributors and Market Participants agree on draft reconciliation amounts referred to in 5.6.4 then AEMO issues the final DUAFG reconciliation amounts statement to Distributors and Market Participants."	

Wholesale Market System Security Procedures			
Procedure Clause #	Issue / Comment	Proposed text Red strikeout means delete and blue underline means insert	AEMO Response (AEMO only)

Attachment D - DWGM - Technical Specification

INT Report	Issue / Comment	Proposed text Red strikeout means delete and blue <u>underline</u> means insert	AEMO Response (AEMO only)
INT139			
INT139A			
INT188			
INT140			
INT1176			
INT240			
INT241			