

24 May 2024

Report to Essential Services Commission of South Australia

# Review of Gas Metering Code

Final report



## About ACIL Allen

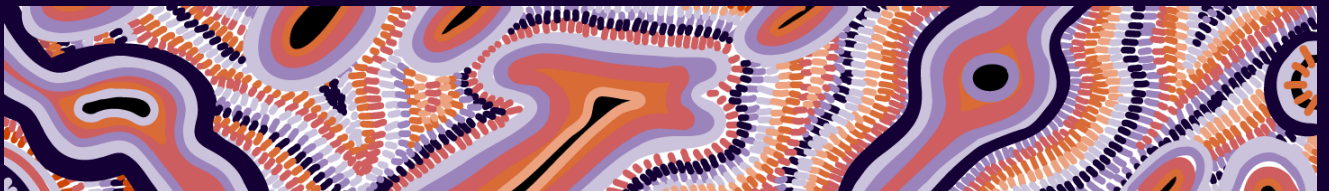
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Goomup, by Jarni McGuire

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# Executive summary

The Essential Services Commission of South Australia (the Commission) engaged ACIL Allen to undertake a comprehensive and systematic review of the Gas Metering Code.

To undertake the review, we:

- reviewed the Gas Metering Code
- reviewed other regulatory instruments that included provisions relating to gas metering, in particular, the Retail Market Procedures (South Australia), the National Gas Rules and the Small-scale Gas Networks Code
- reviewed recent reports released by the Australian Energy Market Commission and the Australian Energy Market Operator on extending the regulatory frameworks to hydrogen and renewable gases<sup>1</sup>
- considered a trial of digital meters by Australian Gas Networks.

We identified a range of issues that we grouped under 7 broad themes, and recommended a range of amendments that are set out in detail in chapter 4. Our key recommendations are as follows:

1. **Interaction and alignment with other regulatory instruments:**
  - a) limit the application of the Gas Metering Code to those distributors and retailers that are not covered by the Small-scale Gas Networks Code
  - b) simplify the requirements for the installation database by aligning them with similar provisions in the Retail Market Procedures (South Australia) and AEMO's installation database procedures that apply in Victoria
  - c) align various definitions with the Retail Market Procedures (South Australia) and the Small-scale Gas Networks Code.
2. **Meter reading, and estimation, validation and substitution:**
  - a) remove duplication within the Gas Metering Code and between the Gas Metering Code and the Retail Market Procedures (South Australia)
  - b) align the requirements in the Gas Metering Code with those in the Retail Market Procedures (South Australia)
  - c) require distributors to take into consideration any changes in the composition of gas when estimating or substituting metering data.
3. **Confidentiality:** remove duplication with the National Gas Rules.
4. **Sealing of gas meters:** clarify the obligations in the Gas Metering Code by consolidating the obligations in one clause.

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<sup>1</sup> Australian Energy Market Commission, *Final Report, Review into Extending the Regulatory Frameworks to Hydrogen and Renewable Gases*, 8 September 2022; Australian Energy Market Operator, *Final Report, Hydrogen Blends and Renewable Gases Procedures Review*, September 2022.

5. **Role of the Technical Regulator:** transfer reporting on technical-related issues from the Commission to the Technical Regulator.
6. **Digital metering:** broaden existing provisions in the Gas Metering Code that apply to retailers requesting a meter upgrade to also apply where a customer requests, or a distributor chooses, a meter upgrade.
7. **Editorial issues:** correct a range of editorial issues and delete redundant definitions.



The Gas Metering Code was originally published by the Essential Services Commission of South Australia (the Commission) in 2004 in preparation for the commencement of full retail competition in the South Australian retail gas market.

The Gas Metering Code was developed prior to the development of the:

- National Gas Rules, which commenced on 1 July 2008 with the transfer of economic regulation from the state-based regulators to the Australian Energy Regulator (AER)
- National Energy Retail Rules, which commenced on 1 July 2012 with the implementation of the National Energy Customer Framework in participating jurisdictions (including South Australia)
- Retail Market Procedures (South Australia), which commenced on 1 October 2009 following the formation of the Australian Energy Market Operator (AEMO), which subsumed the functions of the Retail Energy Market Company (REMCo) which previously operated the South Australian gas market.

The Gas Metering Code has been amended 4 times since its initial publication, with the most recent amendment being on 1 July 2020. The 2020 amendments included amendments proposed by:

- the Commission to:
  - require approvals of a technical nature to be granted by the Technical Regulator rather than the Commission
  - clarify that the Gas Metering Code does not apply to small-scale networks and reticulated LPG operations<sup>2</sup>
- Australian Gas Networks (AGN) to:
  - remove redundant provisions, for example, reference to unmetered gaslights and definition of supply address
  - remove duplication with the National Gas Rules, National Energy Retail Rules and Retail Market Procedures (South Australia)
  - remove inconsistencies with the Retail Market Procedures (South Australia)
  - update names of other instruments.

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<sup>2</sup> Essential Services Commission of South Australia, *Australian Gas Networks Regulatory Framework Review 2021-2026, Draft Decision*, November 2019, page 12.

There is now a need for a comprehensive and systematic review of the Gas Metering Code given various market and regulatory changes including:

- updates to the National Gas Rules, National Energy Retail Rules, Retail Market Procedures (South Australia) and other instruments that have occurred since 2020 (and potentially earlier amendments that have not previously been identified)
- metering technology changes, including a trial by AGN of digital gas meters<sup>3</sup>, which enable the gas meters to be read remotely
- the introduction of hydrogen and renewable gases into gas distribution networks to support Australia's emissions reduction plans.

The Commission has commenced a review of the Code and engaged ACIL Allen to assist with that review.

## **Purpose and structure of this report**

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The purpose of this report is to document the outcomes of our review of the Gas Metering Code. The rest of this report is structured as follows:

- Chapter 2 identifies and describes regulatory instruments that are relevant to metering on the gas distribution network.
- The issues that have been identified through a comprehensive and systematic review of the Gas Metering Code are identified in Chapter 3.
- Chapter 4 summarises the recommended changes to the Gas Metering Code.

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<sup>3</sup> <https://www.australiangasnetworks.com.au/digital-meter-program>, accessed 12 May 2024.

# Metering-related regulatory instruments

# 2

The regulatory instruments that are relevant to metering on the gas distribution network are the:

- South Australian *Gas Act 1997* and Gas Regulations 2012
- National Gas Law
- National Gas Rules
- Retail Market Procedures (South Australia)
- National Energy Retail Rules
- Small scale Gas Networks Code.

This chapter describes these regulatory instruments, including how they apply and relate to each other, the timing and scope of any upcoming review or revisions to relevant regulatory instruments (as applicable), and changes to the operational environment for gas metering.

## 2.1 South Australian Gas Act 1997 and Gas Regulations 2012

The purpose of the South Australian *Gas Act 1997* (the Act) is to regulate the gas supply industry in South Australia, and to make provision for safety and technical standards for gas infrastructure, installations and fitting work. The Gas Regulations 2012 are made under the Act. They include matters prescribed in the Act to be declared by regulation.

There are a number of definitions in the Gas Metering Code that refer to the Act, namely, the definitions of:

- customer
- distribution system
- distributor
- gas
- retailer
- Technical Regulator.

In addition, section 4.8 in the Gas Metering Code on the ownership of metering data is subject to provisions in the Act.

Of most relevance to the Gas Metering Code, gas is defined in the Act as:

*A covered gas (as defined by the National Gas Law set out in the Schedule to the National Gas (South Australia) Act 2008) or any other fuel consisting of hydrocarbons or predominantly of hydrocarbons that is in a gaseous or vapour form when it is at the pressure and*



*temperature of its normal pipeline transportation and utilisation conditions, but does not include anything declared by regulation not to be gas.*<sup>4</sup>

The Gas Regulations 2012 state that the defined term “gas” does not include:

*gas that has not been processed to make it suitable for general consumption.*<sup>5</sup>

With the commencement of the National Energy Customer Framework (NECF) (refer section 2.5), the Commission has limited ability to impose any obligations on retailers in South Australia.

Section 59(A) of the Act states that retailers subject to the National Energy Retail Law (referred to as NERL retailers) must comply with provisions in the Commission’s Codes and any requirements imposed under the regulations that relate to:

- technical or safety requirements or standards
- obligations as to the quality, safety and reliability of the supply of gas (relevant to the supply of gas by retail)
- standards for, and installation of, meters relating to gas supply
- any scheme relating to energy productivity
- any other matter related to the sale and supply of gas by retail specified in the regulations.

Regulation 36A(1)(a) specifically states that NERL retailers must comply with a code made by the Commission relating to gas metering.

## 2.2 National Gas Law

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The National Gas Law (NGL) applies in South Australia, as well as the Australian Capital Territory (ACT), New South Wales, the Northern Territory (NT), Queensland, Tasmania and Victoria. The key elements of the NGL are to:

- govern third party access to pipelines
- provide transparency of the gas market through, for example, the Gas Bulletin Board, Gas Statement of Opportunities and gas price reporting by the AER
- facilitate the gas market, including the Short Term Trading Market (STTM)
- regulate retail gas markets in some jurisdictions (including South Australia)
- sets out the functions and powers of the relevant market bodies, namely the Australian Energy Market Commission (AEMC), the AER and the Australian Energy Market Operator (AEMO).

The national gas regulatory framework was recently extended to include hydrogen, biomethane and other renewable gases.<sup>6</sup> One of the key amendments was to change the definition of ‘covered gas’ in the NGL. ‘Covered gas’ is now defined as:

- (a) *a primary gas;*
- (b) *a gas blend.*

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<sup>4</sup> Section 4.

<sup>5</sup> Regulation 5(4).

<sup>6</sup> Refer Energy Ministers, *Extending the national gas regulatory framework too hydrogen, biomethane and other renewable gases*, December 2022. Amendments to the NGL were given Royal Assent on 23 November 2023.

A 'gas blend' is defined as primary gases that have been blended together and 'primary gas' is defined as:

- (a) *natural gas;*
- (b) *hydrogen;*
- (c) *biomethane;*
- (d) *synthetic methane;*
- (e) *a substance prescribed by the Regulations for the purpose of this definition;*
- (f) *a substance prescribed as a primary gas in a participating jurisdiction by a local regulation of the participating jurisdiction.*

## 2.3 National Gas Rules

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The National Gas Rules (NGR) are made under Chapter 9 of the NGL. The initial NGR were made by Ministers in 2008. They are administered by the AEMC. In special and limited circumstances, rule changes can be directed by Ministers.

The NGR:

- govern the wholesale gas balancing markets in the eastern gas market
- govern the wholesale and retail gas markets of northern and eastern Australia
- provide the basis for third party access to regulated transmission and distribution pipelines, and an information and arbitration framework for non-regulated pipelines
- facilitate the provision of services to retail customers
- govern the operation of the STTM in Brisbane, Sydney and Adelaide, the Declared Wholesale Gas Market (DWGM) in Victoria, the Gas Supply Hubs and the Natural Gas Services Bulletin Board
- govern the secondary trading of pipeline capacity.<sup>7</sup>

The NGR include a range of gas metering provisions<sup>8</sup>, but these apply only to metering in the Victorian DWGM.

Part 16 of the NGR governs confidential information. Confidential information is defined as:

*information:*

- (a) *provided to a Registered participant or to AEMO under or in connection with these rules or the Procedures or derived from information so provided; and*
- (b) *classified by or under these rules or the Procedures, or by AEMO, the AER or the AEMC, as confidential information.*<sup>9</sup>

The confidentiality provisions were strengthened in version 2 of the NGR that commenced in mid-2009 to include a general obligation on registered participants, which include gas distributors and retailers.

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<sup>7</sup> <https://www.aemc.gov.au/regulation/energy-rules/national-gas-rules>, accessed 9 May 2024.

<sup>8</sup> Part 19, Division 3, Subdivision 4.

<sup>9</sup> Rule 136.

The AEMC recently conducted a review into extending the regulatory frameworks to hydrogen and renewable gases.<sup>10</sup> The AEMC made a number of changes to the NGR to enable:

- *efficient delivery of new services through the operation of markets that enable new entrants to emerge and efficient investment*
- *continued innovation in developing new services for customers*
- *changes to the frameworks that are fit for purpose and proportionate to the issues they seek to address and achievable for market participants*
- *clarity on the roles and responsibilities for the quality, safety, reliability, and security of supply of gas, to maintain operational safety of infrastructure and customer equipment and appliances*
- *existing consumer protections to be maintained during the transition to the increasing use of hydrogen and renewable gases.*<sup>11</sup>

The amount that customers are charged for gas is based on the energy data which depends on the metering data and the heating value of gas.

The AEMC considered that no changes to the NGR were needed to the metering arrangements for the regulated retail markets to ensure that customers would continue to be charged correctly. It noted that any potential changes would be addressed through AEMO's review of the Retail Market Procedures.

The AEMC noted the different approaches to governing heating values (HV) across the jurisdictions. It noted that, for South Australia:

- AEMO is responsible for verifying and publishing new HV zones
- the distributor is responsible for calculating the HV and energy data
- the retailer uses the energy data to bill customers
- the Commission maintains the Gas Metering Code, which sets out arrangements for calculating the HV.<sup>12</sup>

The AEMC considered that no changes should be made to these governance arrangements, although it recommended that jurisdictions review measures for HV calculations and consider if there could be greater consistency across jurisdictions.<sup>13</sup>

## 2.4 Retail Market Procedures (South Australia)

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The Retail Market Procedures (South Australia) are made under Chapter 2, Part 7, Division 2 of the NGL and deal with matters specified in the NGR. Rule 135EA specifies the matters that the Retail Market Procedures may deal with, including:

- the collection, estimation and use of metering data related to a regulated retail gas market
- the transfer of customers and delivery points in a regulated retail gas market
- balancing, allocation and reconciliation of quantities of gas injected and withdrawn in a regulated retail gas market
- unaccounted for gas
- collection and payments related to settlement in a regulated retail gas market

<sup>10</sup> Australian Energy Market Commission, *Final Report, Review into Extending the Regulatory Frameworks to Hydrogen and Renewable Gases*, 8 September 2022.

<sup>11</sup> *ibid*, pages i-ii.

<sup>12</sup> *ibid*, page 150.

<sup>13</sup> *ibid*, pages 151-152.

- collection, communication, use and disclosure of information related to a regulated retail gas market
- meters and associated equipment.

AEMO publishes separate Retail Market Procedures for each jurisdiction. The Retail Market Procedures (South Australia) were first published in 2009, with amendments made between one and 3 times each year. The current version (version 21.0) came into effect on 1 May 2024.

In 2022, AEMO conducted a review to identify whether any changes were required to the Retail Market Procedures to facilitate hydrogen and renewable gases.<sup>14</sup> It found that the majority of retail market procedures are readily able to facilitate the participation of gases using the broader definition of covered gases in the NGL, with only minimal changes required.<sup>15</sup> The changes recommended to the Retail Market Procedures (South Australia) were to change the definitions of 'energy inflow' and 'injecting' to include reference to all covered gases.<sup>16</sup> The procedures currently define 'gas' by reference to the definition of 'natural gas' in the NGL rather than to 'covered gas'.<sup>17</sup>

In its submission on AEMO's draft review report, AGN noted the following additional matter for AEMO's consideration:

*Gate Point Coding. A separate identifier is required for injection points that are not connected to a transmission pipeline.*<sup>18</sup>

AEMO indicated that it will undertake further consultation on this matter.<sup>19</sup>

AEMO indicated that it is currently progressing an internal review that will require internal AEMO approval before any details can be disclosed. There may be further information available on the potential changes in June 2024.<sup>20</sup> However, based on its recommendation we expect this internal review to implement the matters identified. That is, to:

- revise the definitions of 'gas', 'energy inflow' and 'injecting'
- consider whether a separate identifier is required for injection points that are not connected to a transmission pipeline.

This internal review may therefore not have a material impact on the Gas Metering Code.

## 2.5 National Energy Retail Rules

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The National Energy Retail Rules (NERR) are made under Part 10 of the National Energy Retail Law (NERL). The initial NERR were made by Ministers and came into operation on 1 July 2012. As with the NGR, they are administered by the AEMC, and in special and limited circumstances, rule changes can be directed by Ministers.

<sup>14</sup> AEMO, *Final Report, Hydrogen Blends and Renewable Gases Procedures Review*, September 2022.

<sup>15</sup> *ibid*, page 7.

<sup>16</sup> *ibid*, pages 28-29.

<sup>17</sup> AEMO, *Retail Market Procedures (South Australia), Version 20.0*, clause 1.2.1.

<sup>18</sup> AEMO, *Final Report, Hydrogen Blends and Renewable Gases Procedures Review*, September 2022, page 27.

<sup>19</sup> *ibid*, page 29.

<sup>20</sup> Email correspondence between ACIL Allen and AEMO dated 6 May 2024.

The NERR govern the sale and supply of energy (electricity and gas<sup>21</sup>) from retailers and distributors to customers in New South Wales, Queensland, South Australia, Tasmania and the ACT. They:

- provide the detailed content of the consumer protection measures and model contracts that govern the relationships between consumers, retailers and distributors
- facilitate the provision of electricity and gas services to retail customers, including rules relating to:
  - customer connections
  - retail competition - allowing customers to choose between competing retailers and to switch their retailer
  - energy-specific consumer protections
  - basic terms and conditions contained in standard and market retail contracts.<sup>22</sup>

The NERR include provisions relating to the energy data used to bill retail customers, with the energy data derived from the metering data and heating value.<sup>23</sup>

The NERR are an important part of the NECF, which is a suite of legal instruments that regulate the sale and supply of electricity and gas to retail customers, including the NERL, National Energy Retail Regulations, NERR, and parts of the National Electricity Rules and NGR.

## 2.6 Small-scale Gas Networks Code

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In 2021 to 2023, the Commission reviewed the effectiveness of the small-scale energy consumer protection framework that applied to around 5,500 customers located in regional and remote areas of the State where the NECF did not apply.<sup>24</sup> As a result of that review, the Small-scale Gas Networks Code was first published in July 2023, based on the Reticulated LPG Industry Code which first came into effect on 1 January 2014.

The Small-scale Gas Networks Code applies to:

- gas retail licensees with fewer than 50,000 connections
- gas distribution licensees with fewer than 50,000 connections.<sup>25</sup>

It includes provisions relating to:

- metering information exchange (clause 2.5.1)
- a metering plan (clause 3.4)
- metering accuracy (clause 3.5.1)
- the billing of customers based on meter readings, metering data or estimates for the bill (clause 4.6.4)
- meter reading (clause 4.7).

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<sup>21</sup> Gas is defined by reference to the definitions of primary gas and gas blend in the NGL.

<sup>22</sup> <https://www.aemc.gov.au/regulation/energy-rules/regulation>, accessed 12 May 2024.

<sup>23</sup> Rule 20.

<sup>24</sup> <https://www.escosa.sa.gov.au/projects-and-publications/projects/energy/off-grid-energy-consumer-protection-framework-review/off-grid-energy-consumer-protection-framework-review>, accessed 12 May 2024

<sup>25</sup> Essential Services Commission of South Australia, *Small-scale Gas Networks Code, Version: SGNC/03*, July 2023.

# Issues identified in the Code

# 3

We have systematically reviewed the Gas Metering Code on a clause by clause basis to identify any changes that may be required due to, for example, duplication with other regulatory instruments, inconsistency between regulatory instruments, out of date provisions or edits required. The changes required are discussed in this chapter on a thematic basis, with the recommended changes to the Gas Metering Code tabulated in chapter 4.

The issues identified during the review are discussed in this chapter under the following themes:

- interaction and alignment with other regulatory instruments
- meter reading, and estimation, validation and substitution
- confidentiality
- sealing of gas meters
- role of the Technical Regulator
- digital metering
- editorial issues.

## 3.1 Interaction and alignment with other regulatory instruments

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### 3.1.1 Introductory note

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As the regulatory framework for gas metering has evolved, the number of provisions included in the Gas Metering Code has reduced. Clause 1.6.1 notes that there are other instruments that regulate the retailer's and distributor's obligations. However, for those that are not familiar with the regulatory framework, they may not be aware that the Gas Metering Code should be read in conjunction with the Retail Market Procedures (South Australia), in particular, to provide a more comprehensive understanding of the gas metering-related obligations that apply in South Australia.

To provide greater clarity to those not familiar with the regulatory framework, we recommend that there is a note at the commencement of the Code to inform readers that they cannot rely on the Gas Metering Code to provide all the gas metering-related obligations that apply in South Australia.

### 3.1.2 Small-scale Gas Networks Code

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#### Application

Clause 1.4.1 of the Gas Metering Code states that it regulates standards for meters and metering installations at customer delivery points. Clause 1.4.2 states that it is applicable to:

- distributors who are registered as Network Operators under the NGR
- retailers.

The Small-scale Gas Networks Code regulates distributor and retailer obligations for small-scale gas networks, including standards for meters and metering installations at customer delivery points. As discussed in section 2.6, it applies to:

- gas retail licensees with fewer than 50,000 connections
- gas distribution licensees with fewer than 50,000 connections.<sup>26</sup>

To clarify that the Gas Metering Code does not apply to those distributors and retailers that are subject to the Small-scale Gas Networks Code, we recommend that clause 1.4.2 be amended to restrict the application of the Gas Metering Code to:

- distributors who are registered as Network Operators under the National Gas Rules and have a gas distribution system with 50,000 or more customer delivery points
- retailers selling and supplying gas to customers from a distributor's gas distribution system that has 50,000 or more customer delivery points.

The amendment recommended refers to delivery points rather than connections, as 'delivery point' is a defined term in the Gas Metering Code, consistent with the defined term in the Retail Market Procedures (South Australia) and the NGR. The term 'connection point' or 'connection' is more commonly used when referring to electricity rather than gas.

### **Obtaining a copy of the Code**

Clause 1.5.2 of the Gas Metering Code states that a distributor may impose a reasonable charge when a customer requests a copy of the Code on more than one occasion. Clause 1.4.2 of the Small-scale Gas Networks Code allows a reasonable charge to be imposed for subsequent requests by a customer within a 12-month period.

For consistency, we recommend that the Gas Metering Code be amended to align with the Small-scale Gas Networks Code. This is a more reasonable provision, particularly if several years elapse between a customer's requests for a copy of the Code.

### **Minimum standards of accuracy**

Clause 2.6.1 of the Gas Metering Code requires that the accuracy of a metering installation is maintained within a specified margin, but the obligation is not placed on any party to ensure that this occurs. Clause 3.5 of the Small-scale Gas Networks Code places the obligation on the distributor to maintain the minimum standards of accuracy.

For consistency and clarity, we recommend that the Gas Networks Code be amended to place the obligation on the distributor to maintain the minimum standards of accuracy of metering installations.

### **Witness testing**

Clause 3.3.1 of the Gas Metering Code places an obligation on the distributor to test a metering installation to ascertain whether it is defective. Where the test is requested by a retailer, clause 3.3.2 requires the distributor to give the retailer at least 5 business days' notice of when the test will be performed.

Clause 2.5.1(b) of the Small-scale Gas Networks Code permits the retailer to inspect and witness test (at the retailer's expense) where this is reasonably required for the purpose of its operations.

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<sup>26</sup> Essential Services Commission of South Australia, *Small-scale Gas Networks Code, Version: SGNC/03*, July 2023.

For consistency, we recommend that the Gas Metering Code be amended to permit the retailer to inspect and witness test metering installations, at their expense, where this is reasonably required for the purpose of their operations.

#### **Definition of business day**

“Business day” is currently defined in the Gas Metering Code by reference to the definition in the NERL. The NERL defines business day as a day that is not:

- a Saturday or Sunday
- observed as a public holiday on the same day in each of the participating jurisdictions (except the Commonwealth).

“Business day” is defined in the Small-scale Gas Networks Code (as well as the Retail Market Procedures (South Australia)) as a day that is not a Saturday, a Sunday or a public holiday in the State of South Australia.

Following this review, the obligations remaining in the Gas Metering Code will only be obligations that apply in South Australia and are not duplicated in another regulatory instrument. For that reason, and for consistency, we recommend that the definition of a business day be amended so that it does not include all public holidays in South Australia.

#### **Definition of customer**

The Gas Metering Code defines customer by reference to the definition in the Gas Act 1997 and then restates the definition in the Act. The Small-scale Gas Networks Code simply defines customer by reference to the Act.

By including the definition of customer in the Gas Metering Code, as well as a reference to the Act, there is a risk that there is an inconsistency between the two over time if the definition of customer in the Act is amended. To mitigate this risk, and for consistency with the Small-scale Gas Networks Code, we recommend that the definition of customer in the Gas Metering Code be amended so that it refers only to the Act.

### **3.1.3 Retail Market Procedures (South Australia)**

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#### **Installation database**

Section 2.5 of the Gas Metering Code requires the distributor to:

- maintain an installation database in respect of each metering installation
- store certain information in the installation database relating to each metering installation
- maintain the information in the installation database an accessible format or archive for specified periods of time
- provide access to that information within specified periods of time.

Similarly, the Retail Market Procedures (South Australia) require the distributor (referred to as the Network Operator) to:

- maintain a metering database in respect of each metering installation (clause 2.2(a))
- store certain information in the metering database relating to each metering installation (clauses 2.2(b) and (c))
- maintain the information in the metering database in an accessible format or archive for a specified periods of time (clause 2.4(b)).



AEMO has published installation database procedures that apply to gas distributors in Victoria.<sup>27</sup> The information that must be contained in the installation database is provided in clause 5.2 of those procedures.

Table 3.1 compares the data that is required to be stored in the installation database under the Gas Metering Code, the similar data that is required to be stored in the metering database under the Retail Market Procedures (South Australia), and the similar data that is required to be stored under the Victorian installation database procedures.

**Table 3.1** Comparison of data required to be stored in the installation database and the metering database

Installation database Gas Metering Code	Installation database Victorian installation database procedures	Metering database Retail Market Procedures (South Australia)
a) Metering Installation Registration Number (MIRN)	(a)(v) MIRN	(b)(i) and (c)(i) the MIRN
b) Location of each installed meter, corrector and data logger	(a)(i) Locations and reference details (e.g. drawing numbers) (a)(ii) Site identification names	(b)(ii) the delivery point's discovery address and any other site address information specified in the AEMO Specification Pack
c) Make, model and year of manufacture of each meter, corrector and data logger	(b)(i) Serial numbers (b)(ii) Metering installation identification names (b)(iii) Metering installation types and models (c)(ii) Communication equipment type and serial numbers, communication protocol details or references	(b)(iii) and (c)(iii) the meter number (c)(iii) the meter type
d) For each meter, corrector and data logger that is installed, the address of the customer and the date of installation		(b)(ii) the delivery point's discovery address and any other site address information specified in the AEMO Specification Pack
e) The next scheduled date for testing or replacement of all devices used to measure the quantity of gas	(b)(iv) Current test and calibration programme details, test results and references to test certificates (b)(v) Calibration tables, where applied to achieve metering installation accuracy, and data register coding details.	
f) Data on performance of each device used to measure the quantity of gas (where relevant)		
g) Calibration records of all devices used to measure the quantity of gas		
h) Testing records of all devices used to measure the quantity of gas		
i) Date and details of all seals and labels applied to meters and correctors		
j) The date of, and details of, the most recent maintenance of all devices used to measure the quantity of gas	Refer above	

<sup>27</sup> AEMO, *Wholesale Market Metering Procedures (Victoria)*, Version 2.0, chapter 5.

Installation database Gas Metering Code	Installation database Victorian installation database procedures	Metering database Retail Market Procedures (South Australia)
k) The next scheduled date for maintenance of all devices used to measure the quantity of gas	Refer above	

Based on the data requirements in the Retail Market Procedures (South Australia) and the Victorian installation database procedures, we recommend that the requirements in clause 2.5.2 of the Gas Metering Code be simplified as follows:

1. The Victorian installation database procedures refer to the metering installation, while the Gas Metering Code refers to the meter, corrector and data logger. As “metering installation” is defined to include the meter, corrector and data logger, the Gas Metering Code could more simply refer to the metering installation.
2. The Gas Metering Code includes a number of requirements relating to testing and calibration while the Victorian installation database procedures refer more broadly to the “current test and calibration programme details, test results and references to test certificates”. The number of requirements could be reduced by referring to them more broadly.

The requirements for maintaining information differ slightly between those in the Gas Metering Code in relation to the installation database (clause 2.5.3) and those in the Retail Market Procedures (South Australia) in relation to the metering database (clauses 2.4(b) and (c)).

**Table 3.2** Comparison of requirements for retaining data

Installation database Gas Metering Code	Metering database Retail Market Procedures (South Australia)
Data must be retained for 7 years from the date of inclusion of the information in the database, or for 12 months after the life of the metering installation, whichever is longer	Data must be retained for at least 7 years after data ceases to remain current
Data must be held in an accessible format for a minimum period of 16 months from the date of inclusion in the database	Data must be held in a readily accessible format until at least 2 years after it ceases to be current
Data must then be maintained in archive	Data must then be held in a format accessible by the distributor within 5 business days

While the databases are slightly different, we recommend that the requirements for maintaining information in the installation database under the Gas Metering Code be aligned with those for maintaining information in the metering database under the Retail Market Procedures (South Australia). This will ensure that all relevant information for a metering installation is held in the same way for the same period of time.

### Definitions

There are a number of definitions in the Gas Metering Code that are similar to, but not the same as, definitions in the Retail Market Procedures (South Australia). These are set out in Table 3.3.

**Table 3.3** Comparison of definitions in the Gas Metering Code and Retail Market Procedures (South Australia)

Defined term	Definition in the Gas Metering Code	Definition in the Retail Market Procedures (South Australia)
actual meter reading	the physical collection of metering data by way of a scheduled meter reading or a special meter reading. An actual meter read may be metering data which has been substituted in accordance with clause 4.4.1(b) for an interval meter or clause 4.4.2(b) for a basic meter, but does not include metering data which has been estimated	the figures or other information shown on a meter or instrument as actually read. An actual meter reading includes a deemed meter reading.
estimated read (Gas Metering Code), estimated meter reading (Retail Market Procedures (South Australia))	obtaining an estimated value for the total energy quantity of gas delivered at a delivery point calculated by the distributor in accordance with clause 4.5 of this industry code in lieu of an actual meter reading	an estimate of an actual meter reading made under clause 3.5.3 in accordance with an approved estimation methodology or a customer-own read. Except in clause 3.5.4, it does not include an estimated meter reading designated to be a substituted meter reading
meter	a device used to directly measure the mass or volume of gas passing through it and includes associated equipment attached to the instrument to filter, control or regulate the flow of gas	the device used to directly measure the mass or volume of gas passing through it and includes the associated equipment attached to the device to filter, control or regulate that flow of gas
scheduled meter reading	an actual meter reading of a delivery point on a cycle that equates to the customer's billing cycle, usually monthly or quarterly	a meter reading of a delivery point that is scheduled to occur under the Network Operator's meter reading schedule
telemetry	the process of communication using special equipment to send, receive and measure data collected from a metering installation over distances	the communication equipment used for transmission of data collected from meters to a Network Operator's central data management system and typically encompasses modems, telecom landline (which may be dedicated or part of the PSTN network) or radio transceivers (which may be in the form of a dedicated radio network, GSM, GPRS or satellite telephony).

For clarity, we recommend aligning these definitions. By doing so, a couple of consequential amendments will be required, namely:

- the reference to “telemetry equipment” in the definition of ‘metering installation’ will need to be replaced by “telemetry”
- the definitions of ‘customer-own read’, ‘deemed meter reading’, ‘metering database’, ‘meter reading’, ‘meter reading schedule’, ‘scheduled meter reading’ and ‘substituted meter reading’ will need to be included
- the defined term ‘estimated read’ will need to be replaced with ‘estimated meter reading’.

## 3.2 Meter reading, and estimation, validation and substitution of metering data

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### 3.2.1 Editorial

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Chapter 4 of the Gas Metering Code is titled meter reading and data. Meter data is data that relates to the physical meter while metering data is data that is obtained from the meter. We recommend that the chapter be retitled meter reading and metering data as it relates to metering data rather than meter data.

The headings for Schedule 1 and Schedule 2 both include a paragraph break between “metering” and “installation”. We recommend that these paragraph breaks be deleted.

### 3.2.2 Meter reading for customer transfer

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Clause 4.2.1 of the Gas Metering Code requires the distributor, on request by a retailer, to use best endeavours to carry out an actual meter reading to enable the transfer of a customer to that retailer within a reasonable time of the request. Clause 3.1.3 of the Retail Market Procedures (South Australia) allows a distributor to use a deemed meter reading where an actual meter reading for a basic-metered delivery point was undertaken no more than 10 days before the date of move in.

In section 3.1.3, we recommended that the definition of “actual meter reading” be amended to align with the definition in the Retail Market Procedures (South Australia) so that it includes deemed meter readings. To clarify that a deemed meter reading may be provided in response to a retailer’s request for an actual meter reading, we recommend that a note be added to that effect.

We understand that concerns have been expressed that “a reasonable period of time” is not specific enough.

The key outcome required is that an actual meter reading occurs by the date requested by the retailer. That date would take into consideration the type of meter installed (whether it can be read remotely), the customer transfer process, including the cooling off period, the next scheduled read date in the case of a manually read meter, and the timeframe within which a deemed meter reading could be used. The retailer’s objective would be to avoid the cost of a special meter reading.

To address the concern, we recommend that the clause be amended to refer to the date requested by the retailer.

### 3.2.3 Validation and substitution of metering data

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Clauses 4.4.1 and 4.4.2 of the Gas Metering Code require a distributor to:

- validate metering data for:
  - an interval metering installation in accordance with schedule 1, clause 1
  - a basic metering installation in accordance with schedule 2, clause 1
- where necessary, substitute metering data for:
  - an interval metering installation in accordance with schedule 1, clauses 2 and 4
  - a basic metering installation in accordance with schedule 2, clauses 2 and 4.

Clause 1 in each schedule refer back to clause 4.4.1(a) and clause 4.4.2(a) and restate the obligation to validate actual meter readings. To remove this duplication, we recommend that the first sentence in clause 1 of schedules 1 and 2 be deleted.

Clause 4.4.3 provides the circumstances under which metering data is to be substituted. The obligation to substitute metering data and the circumstances under which metering data is to be substituted is repeated in clause 2 in each schedule. To remove this duplication, we recommend that clause 2 in each of the schedules be deleted. As the wording of clause 2 in the schedules is

clearer than the wording of clause 4.3, we recommend that the wording of clause 4.3 be amended to align with the wording of clause 2 in the schedules.

Clause 3.4 of the Retail Market Procedures (South Australia) requires a distributor to validate metering data using an approved validation methodology. An approved validation methodology is defined as a methodology for the validation of metering data provided for in the Gas Metering Code.

Clause 3.5.4 of the Retail Market Procedures (South Australia) requires a distributor to substitute metering data in the circumstances specified in the Gas Metering Code using an approved substitution methodology. An approved substitution methodology is defined as a methodology for the substitution of metering data provided for in the Gas Metering Code.

To provide clarity, we recommend that clauses 4.4.1 and 4.4.2 of the Gas Metering Code be amended to refer to the approved validation methodologies in clause 1 of the schedules and the approved substitution methodologies in clause 4 of the schedules. As a consequence, we recommend that:

- the definitions of “approved validation methodology” and “approved substitution methodology” be included in the Gas Metering Code
- clause 1 in the schedules be retitled “Approved validation methodology”
- clause 4(a) in the schedules be put into a separate section in the schedule and retitled “Approved substitution methodology”
- clauses 4(c), (d), (e), (f), (g) and (i) in schedule 1 and clauses 4(c) and (e) in schedule 2 be placed in a separate section in the respective schedules and titled “When substitution and estimation types may be used”.

Where metering data has been substituted, the Gas Metering Code requires the distributor to:

- provide the substituted data to the retailer under clause 4.4.3
- inform the retailer that a substitution has occurred under clause 4.4.4
- provide the data to AEMO, where metering data is required to be provided to it, under clause 4.4.5.

We recommend that these requirements be clarified by combining them in one clause.

Clause 4(h) in schedule 1 and clause 4(d) in schedule 2 require the distributor to notify the retailer where substituted or estimated metering data is used. We recommend that these obligations be deleted from each of the schedules and incorporated in the combined clause referred to above.

### **3.2.4 Estimation of metering data**

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Clause 4.5.1 of the Gas Metering Code requires a distributor to estimate metering data in accordance with:

- schedule 1, clauses 3 and 4 for an interval metering installation
- schedule 2, clauses 3 and 4 for a basic metering installation.

Clause 3 in schedule 1 and 2 refers to clause 4.5 and restates the obligation in clause 4.5.1. To remove this duplication, we recommend that clause 3 in schedules 1 and 2 be deleted.

Clause 3.5.3(a) of the Retail Market Procedures (South Australia) sets out the circumstances under which the distributor must calculate an estimated meter reading in accordance with an approved

estimation methodology.<sup>28</sup> An approved estimation methodology is defined as a methodology for the estimation of metering data provided for in the Gas Metering Code.

To remove the duplication, we recommend that clause 4.5.1 be amended so that it requires distributors to calculate an estimated meter reading where required to do so under the Retail Market Procedures using the approved estimation methodology in:

- schedule 1, clause 4 for an interval metering installation
- schedule 2, clause 4 for a basic metering installation.

As a consequence, we recommend that:

- the definition of “approved estimation methodology” be included in the Gas Metering Code
- clause 4(b) in the schedules be put into a separate section in the schedule and retitled “Approved estimation methodology”.

### 3.2.5 Change in the composition of gas

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Changes have been made to the regulatory framework to prepare for the introduction of hydrogen and renewable gases into gas distribution networks to support Australia’s emissions reduction plans. The heating value of gas will change as the composition of gas changes. This will need to be reflected in the heating value methodology that is approved by the Technical Regulator and the heating value data that are calculated by the distributor. Clause 4.1.1 of the Gas Metering Code provides the framework for the necessary changes to be made to the methodology and the calculations.

To improve the clarity of clause 4.1.1, we recommend some editorial changes which are included in section 3.7.

The methodologies for estimating and substituting metering data assume that the composition of gas remains relatively unchanged over time – metering data from like days or from a previous meter reading period can be used as the basis for the estimation or substitution. However, if the heating value of the gas was different on the like day or during the previous meter reading period, then the metering data will need to be adjusted to take into account the change in heating value.

We recommend including an additional obligation on the distributor in the estimation and substitution methodologies to take into account the change in the composition of gas.

## 3.3 Confidentiality

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Clause 4.7 of the Gas Metering Code sets out the obligations on distributors and retailers relating to the confidentiality of data. The obligations duplicate the provisions in Part 16 of the NGR, particularly Rule 138A (General confidentiality obligation of Registered participant).

The NGR’s confidentiality provisions apply to information that has been classified as confidential under the NGR, the Procedures, or by AEMO, the AER or the AEMC. Clause 1.4 of the Retail Market Procedures (South Australia) states that:

*Unless these Procedures state otherwise, any information provided to AEMO or a Participant under these Procedures is classified as confidential information for the purposes of the Law and the Rules.*

So as not to duplicate the confidentiality provisions in the NGR, we recommend that clause 4.7 in the Gas Metering Code be replaced with a similar provision to that in the Retail Market Procedures (South Australia) noting that metering data is classified as confidential information by the retail

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<sup>28</sup> Clause 3.5.3(b) of the Retail Market Procedures (South Australia) allows an estimated meter reading to be replaced with a customer-own read.

market procedures for the purposes of Part 16 of the NGR. This will provide a link from the requirements in the Gas Metering Code to the Retail Market Procedures (South Australia) to the NGR.

### 3.4 Sealing of gas meters

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Clause 2.7.3 of the Gas Metering Code provides a timeframe within which a broken seal must be replaced and clause 2.7.5 provides the timeframes within which a metering installation must be tested or replaced if the minimum standard of accuracy may not be met as a result of or in connection with breaking a seal. Clause 2.7.4 states who pays the costs for replacing broken seals.

For clarity, we recommend that clauses 2.7.3 and 2.7.5 be merged so that there is greater clarity as to the actions and timeframes that apply when a seal is broken, noting that:

- if a meter is tested and replaced, the seal on the replaced meter will not need to be replaced
- if a meter is tested, but the meter is not replaced, the seal could be replaced at the time the meter is tested
- if a meter is not tested, then the seal should be replaced when the meter is next read or within 70 business days, whichever occurs first.

The heading for section 3.8 is “sealing and labelling”. However, the provisions relating to sealing are in section 2.7 on security and the provisions in section 3.8 relate only to labelling. We recommend that section 3.8 be relabelled “Labelling”.

### 3.5 Role of the Technical Regulator

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In the Commission’s review of the Gas Metering Code in 2020, it noted that the Act vests the Technical Regulator with powers, functions and obligations relating to the safety and technical standards relating to the gas supply industry and gas installations.<sup>29</sup> The Commission made a number of amendments to the Gas Metering Code to transfer safety- and technical-related responsibilities from the Commission to the Technical Regulator. For example, the approval of the initial in-service period of a meter class was transferred from the Commission (on the recommendation of the Technical Regulator) to the Technical Regulator (clause 3.4.1).

There are a couple of technical-related provisions remaining in the Gas Metering Code, namely:

- Clause 2.2 – which requires distributors to report to the Commission annually on all instances where an interval metering installation has been replaced with a basic metering installation.
- Clause 3.5.1 – which requires the distributor, upon request, to provide results of any tests conducted under the Code to the Commission.

We recommend that the distributors provide this information to the Technical Regulator rather than the Commission. Additionally, we recommend that the reporting of instances where interval metering installations are replaced by basic metering installations be on request, consistent with the requirement to provide test results.

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<sup>29</sup> Essential Services Commission of South Australia, *Australian Gas Networks Regulatory Framework Review 2021-2026, Final Decision, April 2020*, page 15.

### 3.6 Digital metering

AGN is currently trialling digital gas meters<sup>30</sup>, which enable the gas meters to be read remotely, and it may choose to install these more widely if the trial is successful. Additionally, customers may elect to have a digital meter installed if they would prefer their gas meter to be read remotely.

Clause 2.1.2 of the Gas Metering Code currently foresees the situation where retailers request a metering installation that is different to that already installed, or that the distributor would otherwise install. Where this occurs clause 2.1.3 requires that the incremental cost be paid for by the party that initiates the change. However, clause 2.1.2 does not foresee the situation where the customer or the distributor initiates the change and thereby the Code does not ensure that the initiating party pays the incremental cost in all circumstances.

We recommend that the application of clauses 2.1.2 and 2.1.3 be broadened so that they apply to retailers, distributors and customers. Additionally, we recommend that a new obligation be included in the Gas Metering Code requiring a distributor to inform the retailer and customer prior to installing a metering installation that is different to that required by the applicable regulatory instruments or would ordinarily be installed by the distributor.

### 3.7 Editorial issues

There are a number of editorial issues that we have identified in the Gas Metering Code as part of our review. These are set out in Table 3.4, with our recommended changes.

**Table 3.4** Editorial issues identified in the Gas Metering Code

Clause	Editorial issue	Recommendation
1.6.1(b)	While clause 1.6.1(c) refers to the suite of energy retail instruments (the NERL, National Energy Retail Regulations and the NERR), clause 1.6.1(b) refers to the NGL and National Gas Regulations, but not the NGR.	Include a reference to the National Gas Rules.
1.6.1(g)	The reference to the defined term 'retail market procedures' is not in bold or italicised.	Bold and italicise 'retail market procedures'.
2.5.1	There are 3 defined terms that are not in bold and italicised font – 'distributor', 'installation database' and 'metering installation'.	Bold and italicise the defined terms.
2.5.4	There is a reference to "two business days". As the clause is currently drafted, "from the date of receipt" applies to subclause (b) only.	For consistency, change "two business days" to "2 business days". Add a paragraph break before "from the date of receipt" to clarify that it applies to subclauses (a) and (b).
3.2.2	There are 3 defined terms that are not in bold and italicised font – 'distributor', 'metering installation' and 'type tested'.	Bold and italicise the defined terms.
3.2.3	As the clause is currently drafted, the words "on request" relate to the retailer rather than the meter.	For clarity, move the words "on request" to immediately after the reference to the retailer.
3.3.3	There is a comma missing in this clause.	For clarity, add a comma after "If".

<sup>30</sup> <https://www.australiangasnetworks.com.au/digital-meter-program>, accessed 12 May 2024.



Clause	Editorial issue	Recommendation
3.6.1	Consequential amendment with inclusion of defined term 'substituted meter reading'.	Replace 'substitute readings' with 'substituted meter readings'.
3.6.2	Consequential amendment with inclusion of defined term 'substituted meter reading'.	Replace 'substitution of meter readings' with 'the use of substituted meter readings'.
3.7.2	There is a semi-colon at the end of subclause (a), which is not consistent with the punctuation for lists in the Code.	For consistency, delete the semi-colon at the end of subclause (a).
4.1.1	The clause doesn't differentiate between heating value data and the heating value methodology, and it is not clear whether the Technical Regulator develops and approves the heating value methodology or approves the heating value methodology developed by the distributor.	To improve clarity, differentiate between heating value data and the heating value methodology, and specify that the methodology is approved by the Technical Regulator.
4.3.6	There are 4 defined terms that are not in bold and italicised font – 'customer', 'gas', 'metering data', and 'metering installation'.	Bold and italicise the defined terms.
4.6.3	The reference to the defined term 'Retail Market Procedures' should not be capitalised.	Use lower case in reference to defined term 'retail market procedures'.
6. 'Act'	Other definitions of legislation in the Code include the words "as in force from time to time" in the definition although , as discussed below, we recommend including the words "as amended from time to time".	For consistency, add the words "as amended from time to time" in the definition.
6. 'AER'	The defined term is not referred to elsewhere in the Code.	Delete the definition of 'AER'.
6. 'Commission'	The definition refers to the defined term 'ESC Act', but 'ESC Act' is not defined and is not referred to elsewhere in the Code.	Write the name of the ESC Act in full.
6. 'Demand Delivery Point'	The defined term is not referred to elsewhere in the Code.	Delete the definition of 'Demand Delivery Point'.
6. 'distribution pipeline'	The term is defined by reference to the <i>National Gas (South Australia) Act 2008</i> .	For consistency, define the term by reference to the NGL.
6. 'National Gas Regulations'	The term is bolded and italicised in clause 1.6.1(b), but is not defined.	Include a definition for 'National Gas Regulations'.
6. 'Network Operator'	It may be unclear to lay readers that this refers to a distributor.	Add "(also commonly referred to as a distributor)", consistent with the definition in the Retail Market Procedures (South Australia).
6. 'retail market procedures'	The definition is vague as it does not specifically refer to the retail market procedures for South Australia and AEMO publishes retail market procedures for a number of jurisdictions.	Amend the definition of 'retail market procedures' so that it clearly refers to the Retail Market Procedures (South Australia).
6. 'Volume Delivery Point'	The defined term is not referred to elsewhere in the Code.	Delete definition of 'Volume Delivery Point'.
Schedule 1	In the heading, there is a paragraph break between "metering" and "installation".	Delete paragraph break between "metering" and "installation".

Clause	Editorial issue	Recommendation
Schedule 1 clause 4(e)	There is a paragraph break after “clauses 5.4,”.	Delete paragraph break after “clauses 5.4,”.
Schedule 1, clause 5.2	The table of ‘nearest equivalent day’ or ‘like day’ is missing symbols for Tuesday and Wednesday indicating whether the read is in the same week as the day in the previous year (❖❖) or the week preceding that in which the substitution day occurs in the previous year (❖).	Include the symbols for Tuesday and Wednesday as per the previous version of the Gas Metering Code.
Schedule 2	In the heading, there is a paragraph break between “metering” and “installation.”	Delete paragraph break between “metering” and “installation.”

There are a number of definitions in the Gas Metering Code that reference legislation “as in force from time to time”. The Small-scale Gas Networks Code refers to the more commonly used term “as amended from time to time”. For consistency, we recommend that all references to “as in force from time to time” be replaced with “as amended from time to time”. This applies to the definitions of:

- National Energy Retail Law
- National Gas Law.

# Recommended changes to the Code

# 4

The changes that are recommended to the Gas Metering Code are tabulated in Table 4.1. The changes are presented on a thematic basis in the same order as they are discussed in chapter 3, that is:

- interaction and alignment with other regulatory instruments
- meter reading, and estimation, validation and substitution
- confidentiality
- sealing of gas meters
- role of the Technical Regulator
- digital metering
- editorial issues.

Within each group of issues, the recommended changes are in the order of the clauses in the Code. The recommended changes to the drafting of clauses are underlined.

**Table 4.1** Recommended changes to the Gas Metering Code

Current provision	Nature of amendment	Proposed new provision
Interaction and alignment with other regulatory instruments		
1. Preliminary	Amend – include a note that explains to the reader that they should refer to other instruments for gas metering-related obligations that apply in South Australia.	<u>Note: This <i>Gas Metering Code</i> only includes those provisions that apply to gas metering in South Australia that are not included in other regulatory instruments. A full range of regulatory instruments is referred to in clause 1.6.1. The regulatory instrument that is most relevant to gas metering-related provisions in South Australia is the <b>retail market procedures</b>, as well as the <b>National Gas Rules</b> (confidentiality provisions) and <b>National Energy Retail Rules</b> (billing requirements).</u>
1.4 Application 1.4.2 The persons bound by this industry code are <b>distributors</b> who are registered as <b>Network Operators</b> under the <b>National Gas Rules</b> , and <b>retailers</b> .	Amend – limit application so distributors and retailers are bound by the Gas Metering Code or the Small-scale Gas Networks Code but not both.	1.4 Application 1.4.2 The persons bound by this industry code are: (a) <b>distributors</b> who are registered as <b>Network Operators</b> under the <b>National Gas Rules</b> and have a <b>gas distribution system</b> with 50,000 or more <b>customer delivery points</b> , and (b) <b>retailers</b> selling and supplying gas to <b>customers</b> from a <b>distributor’s gas distribution system</b> that has 50,000 or more <b>customer delivery points</b> .
1.5 Obtaining a copy of this Gas Metering Code 1.5.2 A <b>distributor</b> may impose a reasonable charge for subsequent requests by that <b>customer</b> .	Amend – so that a reasonable charge is imposed for subsequent requests within a 12 month period, consistent with the Small-scale Gas Networks Code.	1.5 Obtaining a copy of this Gas Metering Code 1.5.2 A <b>distributor</b> may impose a reasonable charge for subsequent requests by that <b>customer</b> within a 12 month period.

Current provision	Nature of amendment	Proposed new provision
<p>2.5 Installation database</p> <p>2.5.2 The <b>installation database</b> must contain at least the following information:</p> <p>(a) the Metering Installation Registration Number (<b>MIRN</b>)</p> <p>(b) the location of each installed <b>meter, corrector</b> and <b>data logger</b></p> <p>(c) the make, model and year of manufacture for each <b>meter, corrector</b> and <b>data logger</b></p> <p>(d) for each <b>meter, corrector</b> and <b>data logger</b> that is installed, the address of the <b>customer</b> and the date of installation</p> <p>(e) the next scheduled date for testing or replacement of all devices used to measure the quantity of <b>gas</b></p> <p>(f) data on performance of each device used to measure the quantity of <b>gas</b> (where relevant)</p> <p>(g) calibration records of all devices used to measure the quantity of <b>gas</b></p> <p>(h) testing records of all devices used to measure the quantity of <b>gas</b></p> <p>(i) date and details of all seals and labels applied to <b>meters</b> and <b>correctors</b></p> <p>(j) the date of, and details of, the most recent maintenance of all devices used to measure the quantity of <b>gas</b>, and</p> <p>(k) the next scheduled date for maintenance of all devices used to measure the quantity of <b>gas</b>.</p>	<p>Amend – simplify by aligning with the requirements in the Retail Market Procedures (South Australia) and the Victorian installation database procedures.</p>	<p>2.5 Installation database</p> <p>2.5.2 The <b>installation database</b> must contain at least the following information:</p> <p>(a) the Metering Installation Registration Number (<b>MIRN</b>)</p> <p>(b) the make, model, year of manufacture <u>and date of installation for each component of the <b>metering installation</b></u></p> <p>(c) <u>current test and calibration programme details, test results and references to test certificates</u></p> <p>(d) <u>calibration tables, where applied to achieve <b>metering installation</b> accuracy, and data register coding details</u></p> <p>(e) <u>date and details of all seals and labels applied to the <b>metering installation</b>.</u></p> <p><u>Note: The information that must be contained in the <b>installation database</b> is in addition to the information that must be contained in the metering database under clause 2.2 of the <b>retail market procedures</b>.</u></p>
<p>2.5.3 A <b>distributor</b> must maintain the information contained in the <b>installation database</b>:</p> <p>(a) in an accessible format for a minimum period of 16 months from the date of inclusion of information in the database, and</p> <p>(b) in archive for 7 years from the date of inclusion of the information in the database, or for twelve months after the life of the relevant <b>metering installation</b>, whichever is longer.</p>	<p>Amend – to align with the requirements for maintaining information in the metering database as required by the retail market procedures.</p>	<p>2.5.3 A <b>distributor</b> must maintain the information contained in the <b>installation database</b> in the same format and for the same periods as information is required to be held in the <b>metering database</b> under Chapter 2 of the <b>retail market procedures</b>.</p>

Current provision	Nature of amendment	Proposed new provision
<p>2.6 Minimum standards of accuracy</p> <p>2.6.1 The <b>minimum standards</b> of accuracy for <b>metering installations</b> are within a margin of accuracy of plus or minus 2% of the net volume of <b>gas</b> delivered to that <b>delivery point</b>.</p>	<p>Amend – to place the obligation on the distributor to maintain the accuracy of metering installations.</p>	<p>2.6 Minimum standards of accuracy</p> <p>2.6.1 The <b>distributor</b> must ensure that the <b>minimum standards</b> of accuracy for <b>metering installations</b> are within a margin of accuracy of plus or minus 2% of the net volume of <b>gas</b> delivered to that <b>delivery point</b>.</p>
<p>3.3 Obligation to test metering installations</p> <p>3.3.2 The <b>distributor</b> must give the <b>retailer</b> who requests a test, at least 5 <b>business days'</b> notice (or agree such other mutually convenient time) of when the requested test is proposed to be performed.</p>	<p>Amend – to permit the retailer to inspect and witness test metering installations, at their expense, where this is reasonably required for the purpose of their operations.</p>	<p>3.3 Obligation to test metering installations</p> <p>3.3.2 The <b>distributor</b> must:</p> <p>(a) give the <b>retailer</b> who requests a test, at least 5 <b>business days'</b> notice (or agree such other mutually convenient time) of when the requested test is proposed to be performed, <u>and</u></p> <p>(b) permit the <b>retailer</b> to inspect and witness test (at the <b>retailer's</b> expense) such <b>metering installations</b> where this is reasonably required by the <b>retailer</b> for its operations.</p>
<p>6. Definitions and Interpretation</p> <p>"<b>actual meter reading</b>" means the physical collection of <b>metering data</b> by way of a <b>scheduled meter reading</b> or a <b>special meter reading</b>. An <b>actual meter read</b> may be <b>metering data</b> which has been substituted in accordance with clause 4.4.1(b) for an <b>interval meter</b> or clause 4.4.2(b) for a <b>basic meter</b>, but does not include <b>metering data</b> which has been estimated</p>	<p>Amend – to align with the definition in the Retail Market Procedures (South Australia).</p>	<p>6. Definitions and Interpretation</p> <p>"<b>actual meter reading</b>" means the <u>figures or other information shown on a <b>meter</b> or instrument as actually read. An <b>actual meter reading</b> includes a <b>deemed meter reading</b>.</u></p>
<p>"<b>business day</b>" has the meaning given to that term in the <b>National Energy Retail Law</b></p>	<p>Amend – to align with definition in the Small-scale Gas Networks Code and the Retail Market Procedures (South Australia) so that all public holidays in South Australia are not business days.</p>	<p>"<b>business day</b>" means a day that is not a Saturday, a Sunday or a public holiday in the State of South Australia</p>
<p>"<b>customer</b>" has the meaning given to that term in the <b>Act</b>, namely a person that has a supply of <b>gas</b> available from a <b>distribution system</b> for consumption by that person, and includes:</p> <p>(a) the occupier for the time being of a place to which <b>gas</b> is supplied by a <b>distribution system</b>; and</p> <p>(b) where the context requires a person seeking a supply of <b>gas</b> from a <b>distribution system</b>, and</p> <p>(c) a person of a class declared by regulation to be <b>customers</b>.</p>	<p>Amend – to refer only to the Act without replicating the definition in the Act.</p>	<p>"<b>customer</b>" has the meaning given to that term in the <b>Act</b></p>

Current provision	Nature of amendment	Proposed new provision
	New definition – consequential amendment with the amendment to the definition of “estimated read”. The proposed definition is consistent with the definition in the Retail Market Procedures (South Australia).	“ <b>customer-own read</b> ” means a read of a <b>meter</b> undertaken by a <b>customer</b> , details of which are provided by the <b>customer</b> to the <b>distributor</b> or <b>retailer</b> for the <b>delivery point</b> to which the <b>meter</b> relates
	New definition – consequential amendment with the amendment to the definition of “actual meter reading”.	“ <b>deemed meter reading</b> ” means an <b>actual meter reading</b> deemed to have occurred on the day of a customer move-in, as defined in clause 3.1.3 of the <b>retail market procedures</b>
“ <b>estimated read</b> ” means obtaining an estimated value for the total energy quantity of <b>gas</b> delivered at a <b>delivery point</b> calculated by the <b>distributor</b> in accordance with clause 4.5 of this industry code in lieu of an <b>actual meter reading</b>	Amend – to align with the definition in the Retail Market Procedures (South Australia).	“ <b>estimated meter reading</b> ” means <u>an estimate of an <b>actual meter reading</b> made under clause 4.5.1 or a <b>customer-own read</b>. Except in clause 4.4, it does not include an <b>estimated meter reading</b> designated to be a <b>substituted meter reading</b></u>
“ <b>meter</b> ” means a device used to directly measure the mass or volume of <b>gas</b> passing through it and includes associated equipment attached to the instrument to filter, control or regulate the flow of <b>gas</b>	Amend – to align with the definition in the Retail Market Procedures (South Australia).	“ <b>meter</b> ” means <u>the</u> device used to directly measure the mass or volume of <b>gas</b> passing through it and includes <u>the</u> associated equipment attached to the <u>device</u> to filter, control or regulate <u>that</u> flow of <b>gas</b>
	New definition – consequential amendment with the inclusion of the definition of “meter reading”	“ <b>metering database</b> ” means a database maintained by a <b>distributor</b> that includes the information required by the applicable provisions of Chapter 2 of the <b>retail market procedures</b>
“ <b>metering installation</b> ” means the <b>meter</b> and associated equipment and installations, which may include <b>correctors</b> , regulators, filters, <b>data loggers</b> and <b>telemetry</b> equipment relating to a <b>delivery point</b>	Amend – consequential amendment with the amendment to the definition of “telemetry”	“ <b>metering installation</b> ” means the <b>meter</b> and associated equipment and installations, which may include <b>correctors</b> , regulators, filters, <b>data loggers</b> and <u>telemetry</u> relating to a <b>delivery point</b>
	New definition – consequential amendment with the amendment to the definition of “scheduled meter reading”	“ <b>meter reading</b> ” means an <b>actual meter reading</b> , a <b>deemed meter reading</b> , an <b>estimated meter reading</b> or a <b>substituted meter reading</b> , as applicable. A reference to a <b>meter reading</b> in respect of a particular date or period is the reading that has most recently been included in the <b>distributor’s metering database</b> for that date or period
	New definition – consequential amendment with the amendment to the definition of “scheduled meter reading”	“ <b>meter reading schedule</b> ” means a schedule provided by a <b>distributor</b> to a <b>retailer</b> under clause 3.1.1(a) of the <b>retail market procedures</b>
“ <b>scheduled meter reading</b> ” means an <b>actual meter reading</b> of a <b>delivery point</b> on a cycle that equates to the <b>customer’s</b> billing cycle, usually monthly or <b>quarterly</b>	Amend – to align with the definition in the Retail Market Procedures (South Australia).	“ <b>scheduled meter reading</b> ” means <u>a <b>meter reading</b> of a <b>delivery point</b> that is scheduled to occur under the <b>distributor’s meter reading schedule</b></u>

Current provision	Nature of amendment	Proposed new provision
<p>"telemetry" means the process of communication using special equipment to send, receive and measure data collected from a <b>metering installation</b> over distances</p>	<p>New definition – consequential amendment with the amendment to the definition of "estimated read".</p> <p>Amend – to align with the definition in the Retail Market Procedures (South Australia).</p>	<p>"<b>substituted meter reading</b>" means a reading that is substituted under clause 4.4</p> <p>"telemetry" means the communication equipment used for transmission of data collected from meters to a <b>distributor's</b> central data management system and typically encompasses modems, telecom landline (which may be dedicated or part of the PSTN network) or radio transceivers (which may be in the form of a dedicated radio network, GSM, GPRS or satellite telephony).</p>
<p>Meter reading, and estimation, validation and substitution</p>		
<p>4. Meter reading and data</p>	<p>Amend – chapter relates to metering data rather than meter data</p>	<p>4. Meter reading and <u>metering</u> data</p>
<p>4.2 Meter reading for customer transfer</p> <p>4.2.1 On request by a <b>retailer</b>, the <b>distributor</b> must use <b>best endeavours</b> to carry out an <b>actual meter reading</b> to enable the transfer of a <b>customer</b> to that <b>retailer</b> within a reasonable time of the request.</p>	<p>Amend – include a note to clarify that an actual meter reading may be a deemed meter reading where permitted under the Retail Market Procedures (South Australia). Additionally, amend to refer to the date requested by the retailer for the actual meter read.</p>	<p>4.2 Meter reading for customer transfer</p> <p>4.2.1 On request by a <b>retailer</b>, the <b>distributor</b> must use <b>best endeavours</b> to carry out an <b>actual meter reading</b> <u>by the date requested by the retailer</u> to enable the transfer of a <b>customer</b> to that <b>retailer</b>.</p> <p><u>Note: The <b>actual meter reading</b> may be a <b>deemed meter reading</b> where permitted by the <b>retail market procedures</b>.</u></p>
<p>4.4 Validation and substitution of metering data</p> <p>4.4.1 The <b>distributor</b> must ensure that <b>metering data</b> collected from an <b>interval metering installation</b> under clause 4.3:</p> <p>(a) is validated in accordance with schedule 1, clause 1 of this industry code, and</p> <p>(b) where necessary, is substituted in accordance with schedule 1, clauses 2 and 4, of this industry code.</p>	<p>Amend – refer to the approved validation and substitution methodologies, and update the clause references to take into consideration the clause numbers deleted (refer below).</p>	<p>4.4 Validation and substitution of metering data</p> <p>4.4.1 The <b>distributor</b> must ensure that <b>metering data</b> collected from an <b>interval metering installation</b> under clause 4.3:</p> <p>(a) is validated in accordance with <u>the <b>approved validation methodology</b></u> in schedule 1, clause 1 of this industry code, and</p> <p>(b) where necessary, is substituted in accordance with <u>the <b>approved substitution methodology</b></u> in schedule 1, clause 2, of this industry code.</p>
<p>4.4.2 The <b>distributor</b> must ensure that <b>metering data</b> collected from a <b>basic metering installation</b> under clause 4.3:</p> <p>(a) is validated in accordance with schedule 2, clause 1 of this industry code, and</p> <p>(b) where necessary, is substituted in accordance with schedule 2, clauses 2 and 4 of this industry code.</p>	<p>Amend – refer to the approved validation and substitution methodologies, and update the clause references to take into consideration the clauses deleted (refer below).</p>	<p>4.4.2 The <b>distributor</b> must ensure that <b>metering data</b> collected from a <b>basic metering installation</b> under clause 4.3:</p> <p>(a) is validated in accordance with <u>the <b>approved validation methodology</b></u> in schedule 2, clause 1 of this industry code, and</p> <p>(b) where necessary, is substituted in accordance with <u>the <b>approved substitution methodology</b></u> in schedule 2, clause <u>2</u> of this industry code.</p>



Current provision	Nature of amendment	Proposed new provision
<p>4.4.3 Where tests under clause 4.4.1(a) or 4.4.2(a) demonstrate that there has been a failure of the <b>metering installation</b> or that a measurement error exists, the <b>metering data</b> must be substituted in accordance with clause 4.4.1(b) or 4.4.2(b) and the <b>distributor</b> must provide the substituted <b>metering data</b> to the <b>retailer</b> so that the <b>retailer</b> can meet its billing obligations.</p>	<p>Amend – replace with duplicative wording that was in clause 2 of schedules 1 and 2.</p>	<p>4.4.3 The <b>metering data</b> for a <b>metering installation</b> will be required to be substituted where:</p> <p>(a) the <b>actual meter reading</b> fails the validation tests;</p> <p>(b) there is a failure of the <b>metering installation</b>, or</p> <p>(c) an inspection or test on the <b>metering installation</b> establishes that a measurement error exists.</p> <hr/> <p>4.4.4 The <b>metering data</b> for a <b>basic metering installation</b> will also be required to be substituted where a <b>deemed meter reading</b> or <b>estimated meter reading</b> is permitted under the <b>retail market procedures</b> and is required to transfer a <b>customer</b> to a new <b>retailer</b>.</p>
<p>4.4.4 If a substitution is made to <b>metering data</b>, the <b>distributor</b> must inform the <b>retailer</b> accordingly to ensure that a bill issued to the relevant <b>customer</b> informs that <b>customer</b> that a substitution has been made.</p> <hr/> <p>4.4.5 Where <b>metering data</b> in respect of a <b>customer</b> has been substituted and is required to be transferred to <b>AEMO</b>, the substituted data must be provided to <b>AEMO</b> by the <b>distributor</b>.</p>	<p>Amend – for clarity, combine similar requirements from clauses 4.4.3, 4.4.4 and 4.4.5. The proposed wording is very similar to that in the existing clauses.</p>	<p>4.4.4 If a substitution is made to <b>metering data</b>, the <b>distributor</b> must:</p> <p>(a) provide the substituted <b>metering data</b> to the <b>retailer</b> so that the <b>retailer</b> can meet its billing obligations</p> <p>(b) inform the <b>retailer</b> to ensure that a bill issued to the relevant <b>customer</b> informs that <b>customer</b> that a substitution has been made</p> <p>(c) provide the substituted <b>metering data</b> to <b>AEMO</b> if the <b>metering data</b> is required to be transferred to <b>AEMO</b>.</p>
<p>4.5 Estimation of metering data</p> <p>4.5.1 Where <b>metering data</b> cannot be obtained in the time frame required for settlement of the market, the distributor must calculate an <b>estimated read</b> of the <b>metering data</b> in accordance with schedule 1, clauses 3 and 4 of this industry code for an <b>interval metering installation</b> and schedule 2, clauses 3 and 4 of this industry code for a <b>basic metering installation</b>.</p>	<p>Amend – remove duplication by referring to the retail market procedures, refer to the approved estimated methodology, replace estimated read with estimated meter reading, and update the clause references to take into consideration the clauses deleted (refer below).</p>	<p>4.5 Estimation of metering data</p> <p>4.5.1 Where the <b>retail market procedures</b> require the <b>distributor</b> to calculate an <b>estimated meter reading</b>, the <b>distributor</b> must use the <b>approved estimation methodology</b> in:</p> <p>(a) schedule 1, clause 3 of this industry code for an <b>interval metering installation</b>, and</p> <p>(b) schedule 2, clauses 3 of this industry code for a <b>basic metering installation</b>.</p>
	<p>New clause – for consistency, move the obligation to inform the retailer from the schedules.</p>	<p>4.5.2 If the <b>distributor</b> calculates an <b>estimated meter reading</b>, the <b>distributor</b> must inform the <b>retailer</b>.</p>

Current provision	Nature of amendment	Proposed new provision
6. Definitions and Interpretation	New clause – to define new term referred to in clause 4.5.1.	6. Definitions and Interpretation "approved estimation methodology" means the methodology, referred to in the <i>retail market procedures</i> , to calculate an <i>estimated meter reading</i> .
	New clause – to define new term referred to in clauses 4.4.1 and 4.4.2.	"approved substitution methodology" means the methodology, referred to in the <i>retail market procedures</i> , to substitute <i>metering data</i> .
	New clause – to define new term referred to in clauses 4.4.1 and 4.4.2.	"approved validation methodology" means the methodology, referred to in the <i>retail market procedures</i> , to validate <i>metering data</i> .
Schedule 1 – Validation, Substitution and Estimation – Interval Metering Installation	Amend – delete erroneous paragraph break.	Schedule 1 – Validation, Substitution and Estimation – Interval Metering Installation
<p>1. Requirement to validate meter readings</p> <p><b>Actual meter readings</b> will be required to be validated in accordance with clause 4.4.1(a) of this industry code. The validation rules that may be applied to the <b>metering data</b> from the <b>meter</b> of an <b>interval metering installation</b> are:</p> <p>(a) Consumption <b>metering data</b> for the <b>meter</b> read period = sum of <b>interval metering data</b> for the <b>meter</b> read period</p> <p>(b) Accumulated <b>meter</b> read value is numeric and <math>\geq 0</math></p> <p>(c) Accumulated <b>meter</b> read value is <math>\geq</math> previous accumulated <b>meter</b> read value</p> <p>(d) Accumulated <b>meter</b> read value passes high/low test</p> <p>(e) <b>Meter</b> read date/time &gt; previous <b>meter</b> read date/time</p> <p>(f) Maximum value (to ensure that no spikes are created)</p> <p>(g) Null checks</p> <p>(h) Dial capacity and decimal point check, and</p> <p>(i) <b>Metering data</b> is consistent with the correct <b>meter</b> type for that <b>delivery point</b>.</p>	<p>Amend – to remove duplication with clause 4.4.1(a), delete first sentence.</p> <p>Consequential to the amendment to clause 4.4.1, retitle the clause "Approved validation methodology".</p>	<p>1. <u>Approved validation methodology</u></p> <p>The validation rules that may be applied to the <b>metering data</b> from the <b>meter</b> of an <b>interval metering installation</b> are:</p> <p>(a) Consumption <b>metering data</b> for the <b>meter</b> read period = sum of <b>interval metering data</b> for the <b>meter</b> read period</p> <p>(b) Accumulated <b>meter</b> read value is numeric and <math>\geq 0</math></p> <p>(c) Accumulated <b>meter</b> read value is <math>\geq</math> previous accumulated <b>meter</b> read value</p> <p>(d) Accumulated <b>meter</b> read value passes high/low test</p> <p>(e) <b>Meter</b> read date/time &gt; previous <b>meter</b> read date/time</p> <p>(f) Maximum value (to ensure that no spikes are created)</p> <p>(g) Null checks</p> <p>(h) Dial capacity and decimal point check, and</p> <p>(i) <b>Metering data</b> is consistent with the correct <b>meter</b> type for that <b>delivery point</b>.</p>

Current provision	Nature of amendment	Proposed new provision
<p>2. Requirement to produce substituted metering data</p> <p>In accordance with clause 4.4.1(b) of this industry code, metering data for an interval metering installation will be required to be substituted where:</p> <p>(a) the actual meter reading fails the validation tests;</p> <p>(b) there is a failure of the metering installation, or</p> <p>(c) an inspection or test on the metering installation establishes that a measurement error exists.</p>	<p>Delete – duplicates clauses 4.4.1(b) and 4.4.3.</p>	
<p>3. Requirement to produce estimated metering data</p> <p>In accordance with clause 4.5 of this industry code, <b>metering data</b> for an <b>interval metering installation</b> will be required to be estimated where the <b>metering data</b> cannot be obtained in the timeframe required for settlement of the market.</p>	<p>Delete – duplicates clause 4.5.1.</p>	
<p>4. Distributor obligations</p> <p>(a) The <b>distributor</b> may use Types 1, 2, 3, 4, 5, 6, 7 or 8 techniques in accordance with clause 5 of this schedule 1, when the <b>metering data</b> is required to be substituted.</p>	<p>Amend – move sub-clause 4(a) to a separate clause and retitle “Approved substitution methodology”. Refer to clauses 4 and 5 rather than just clause 5.</p>	<p><u>2. Approved substitution methodology</u></p> <p>The <b>distributor</b> may use Types 1, 2, 3, 4, 5, 6, 7 or 8 techniques in accordance with <u>clauses 4 and 5</u> of this schedule 1, when the <b>metering data</b> is required to be substituted.</p>
<p>(b) The <b>distributor</b> may use Types 1, 2, or 3 techniques in accordance with clause 5 of this schedule 1, when the <b>metering data</b> is required to be estimated.</p>	<p>Amend – move sub-clause 4(b) to a separate clause and retitle “Approved estimation methodology”. Refer to clauses 4 and 5 rather than just clause 5.</p>	<p><u>3. Approved estimation methodology</u></p> <p>The <b>distributor</b> may use Types 1, 2, or 3 techniques in accordance with <u>clauses 4 and 5</u> of this schedule 1, when the <b>metering data</b> is required to be estimated.</p>
	<p>Amend – retitle clause 4 that contains the remaining subclauses.</p>	<p><u>4. When substitution and estimation types may be used</u></p>
<p>(h) The <b>distributor</b> must notify the <b>retailer</b> where substituted or estimated <b>metering data</b> is used.</p>	<p>Delete – duplicates obligation to notify retailer when metering data is substituted and, for consistency, obligation to notify retailer when metering data is estimated is moved to new clause 4.5.2.</p>	
	<p>New sub-clause – include an additional obligation to ensure that the distributor takes into account any changes in the composition of gas when estimating or substituting metering data.</p>	<p>(j) When estimating or substituting <b>metering data</b> using Types 1, 2 or 3, the <b>distributor</b> must take into consideration any changes in the composition of <b>gas</b> that have occurred since the “Nearest Equivalent Day” or “Like Day”.</p>

Current provision	Nature of amendment	Proposed new provision
<p>Schedule 2 – Validation, Substitution and Estimation – Basic Metering Installation</p>	<p>Amend – delete erroneous paragraph break.</p>	<p>Schedule 2 – Validation, Substitution and Estimation – Basic Metering Installation</p>
<p>1. Requirement to validate meter readings</p> <p><b>Actual meter readings</b> will be required to be validated in accordance with clause 4.4.2(a) of this industry code. The validation rules that may be applied to the <b>metering data</b> from the <b>meter</b> of a <b>basic metering installation</b> are:</p> <p>(a) <b>Meter</b> read value is numeric and <math>\geq 0</math></p> <p>(b) <b>Meter</b> read value is <math>\geq</math> previous meter read value</p> <p>(c) <b>Meter</b> read value passes high/low test</p> <p>(d) <b>Meter</b> read date &gt; previous <b>meter</b> read date</p> <p>(e) Null checks</p> <p>(f) Dial capacity and decimal point check, and</p> <p>(g) <b>Metering data</b> is consistent with the correct <b>meter</b> type for that <b>delivery point</b>.</p>	<p>Amend – to remove duplication with clause 4.4.2(a), delete first sentence.</p> <p>Consequential to the amendment to clause 4.4.1, retitle the clause “Approved validation methodology”.</p>	<p>1. <u>Approved validation methodology</u></p> <p>The validation rules that may be applied to the <b>metering data</b> from the <b>meter</b> of a <b>basic metering installation</b> are:</p> <p>(a) <b>Meter</b> read value is numeric and <math>\geq 0</math></p> <p>(b) <b>Meter</b> read value is <math>\geq</math> previous meter read value</p> <p>(c) <b>Meter</b> read value passes high/low test</p> <p>(d) <b>Meter</b> read date &gt; previous <b>meter</b> read date</p> <p>(e) Null checks</p> <p>(f) Dial capacity and decimal point check, and</p> <p>(g) <b>Metering data</b> is consistent with the correct <b>meter</b> type for that <b>delivery point</b>.</p>
<p>2. Requirement to produce substituted metering data</p> <p>In accordance with clause 4.4.2(b) of this industry code, <b>metering data</b> for a <b>basic metering installation</b> will be required to be substituted where:</p> <p>(a) the <b>actual meter reading</b> fails the validation tests</p> <p>(b) there is a failure of the <b>metering installation</b></p> <p>(c) an inspection or test on the <b>metering installation</b> establishes that a measurement error</p> <p>(d) exists, or</p> <p>(e) an <b>estimated read</b> is permitted under Energy Customer Transfer and Consent Code and is required to transfer a <b>customer</b> to a new <b>retailer</b>.</p>	<p>Delete – duplicates clauses 4.4.2(b) and 4.4.3.</p>	

Current provision	Nature of amendment	Proposed new provision
3. Requirements to produce estimated metering data In accordance with clause 4.5 of this industry code, <b>metering data</b> for a <b>basic metering installation</b> will be required to be estimated where the <b>metering data</b> cannot be obtained in the timeframe required for settlement of the market.	Delete – duplicates clause 4.5.1.	
4. Distributor obligations (a) The <b>distributor</b> may use Types 1, 2, 3, 4, 5 or 6 techniques in accordance with clause 5 of this schedule 2, when the <b>metering data</b> is required to be substituted.	Amend – move sub-clause 4(a) to a separate clause and retitle “Approved substitution methodology”. Refer to clauses 4 and 5 rather than just clause 5.	<u>2. Approved substitution methodology</u> The <b>distributor</b> may use Types 1, 2, 3, 4, 5 or 6 techniques in accordance with <u>clauses 4 and 5</u> of this schedule 2, when the <b>metering data</b> is required to be substituted.
(b) The <b>distributor</b> may use Types 1, 2, or 3 techniques in accordance with clause 5 of this schedule 2, when the <b>metering data</b> is required to be estimated.	Amend – move sub-clause 4(b) to a separate clause and retitle “Approved estimation methodology”. Refer to clauses 4 and 5 rather than just clause 5.	<u>3. Approved estimation methodology</u> The <b>distributor</b> may use Types 1, 2, or 3 techniques in accordance with <u>clauses 4 and 5</u> of this schedule 2, when the <b>metering data</b> is required to be estimated.
	Amend – retitle clause 4 that contains the remaining subclauses	<u>4. When substitution and estimation types may be used</u>
4. Distributor obligations  (d) The <b>distributor</b> must notify the <b>retailer</b> where substituted or estimated <b>metering data</b> is used.	Delete – duplicates obligation to notify retailer when metering data is substituted and, for consistency, obligation to notify retailer when metering data is estimated is moved to new clause 4.5.2.	
	New clauses – include additional obligations to ensure that the distributor takes into account any changes in the composition of gas when estimating or substituting metering data	(f) When estimating or substituting <b>metering data</b> using Types 1 or 2, the <b>distributor</b> must take into consideration any changes in the composition of <b>gas</b> that have occurred since the <b>meter</b> read period last year or the previous <b>meter</b> read period.  (g) When estimating or substituting <b>metering data</b> using Type 3, the <b>distributor</b> must take into consideration any differences in the composition of <b>gas</b> for <b>customers</b> in the <b>customer</b> class.
Confidentiality		
4.7 Confidentiality 4.7.1 The <b>distributor</b> and <b>retailers</b> must keep <b>metering data</b> confidential and use <b>best endeavours</b> to protect and preserve the confidential nature of the <b>metering data</b> and must comply with any <b>applicable regulatory instrument</b> .	Amend – remove duplication with the NGR.	4.7 Confidentiality 4.7.1 <u><b>Metering data</b> is classified as confidential information by the retail market procedures for the purposes of Part 16 of the National Gas Rules.</u>
4.7.2 – 4.7.4	Delete – consequential amendment with the new clause 4.7.1	

Current provision	Nature of amendment	Proposed new provision
Sealing of gas meters		
<p>2.7 Security</p> <p>2.7.3 Following notification that a seal has been broken the <b>distributor</b> must replace a broken seal on the earlier of:</p> <p>(a) the first occasion the metering installation is visited to take a reading, or</p> <p>(b) 70 <b>business days</b>.</p> <hr/> <p>2.7.5 If as a result of or in connection with the breaking of a seal, the relevant <b>metering installation</b> may no longer meet the relevant <b>minimum standards</b> of accuracy, the <b>distributor</b> must:</p> <p>(a) test the <b>metering installation</b> in accordance with clause 3, within 15 <b>business days</b>, or</p> <p>(b) replace the <b>metering installation</b> in accordance with clause 3.6.</p>	<p>Amend – merge clauses 2.7.3 and 2.7.5 to clarify obligations when a seal is broken.</p>	<p>2.7.3 Following notification that a seal has been broken:</p> <p>(a) if, as a result of or in connection with the breaking of that seal, the relevant <b>metering installation</b> may no longer meet the relevant <b>minimum standards</b> of accuracy, the <b>distributor</b> must:</p> <p><u>(i) test the <b>metering installation</b> in accordance with clause 3, within 15 <b>business days</b>, and/or</u></p> <p><u>(ii) replace the <b>metering installation</b> in accordance with clause 3.6, and</u></p> <p>(b) the <b>distributor</b> must replace a broken seal on the earlier of:</p> <p><u>(i) if the <b>metering installation</b> is tested and is not replaced, when the <b>metering installation</b> is tested</u></p> <p><u>(ii) if the <b>metering installation</b> is not tested, the first occasion the <b>metering installation</b> is visited to take a reading, or</u></p> <p><u>(iii) 70 <b>business days</b>.</u></p>
3.8 Sealing and labelling	Amend – delete reference to sealing in the heading.	3.8 Labelling
Role of the Technical Regulator		
<p>2.2 Non reversion</p> <p>2.2.2 The <b>distributor</b> must report to the <b>Commission</b> on an annual basis all instances where it has replaced an <b>interval metering installation</b> with a <b>basic metering installation</b> pursuant to a determination of the <b>distributor</b> made under clause 2.2.1.</p>	<p>Amend – reporting on the replacement of interval metering installations with basic metering installations to the Technical Regulator rather than the Commission, and only on request.</p>	<p>2.2 Non reversion</p> <p>2.2.2 The <b>distributor</b> must, <u>upon request by the <b>Technical Regulator</b></u>, report to the <b>Technical Regulator</b> on instances where it has replaced an <b>interval metering installation</b> with a <b>basic metering installation</b> pursuant to a determination of the <b>distributor</b> made under clause 2.2.1.</p>
<p>3.5 Provision of test results</p> <p>3.5.1 The <b>distributor</b> must, upon request by the <b>Commission</b>, provide the <b>Commission</b> with the results of any test conducted in accordance with this industry code.</p>	<p>Amend – test results to be provided to the Technical Regulator rather than the Commission.</p>	<p>3.5 Provision of test results</p> <p>3.5.1 The <b>distributor</b> must, upon request by the <b>Technical Regulator</b>, provide the <b>Technical Regulator</b> with the results of any test conducted in accordance with this industry code.</p>

Current provision	Nature of amendment	Proposed new provision
Digital metering		
<p>2.1 Obligation to install meters</p> <p>2.1.2 The <b>distributor</b> must not unreasonably withhold its consent to the request of a <b>retailer</b> to install a <b>metering installation</b> of a type that is different from that already installed, or that the <b>distributor</b> would otherwise install, provided that the <b>metering installation</b> satisfies any applicable technical requirements (including those reasonably required by the <b>distributor</b>).</p>	<p>Amend – broaden application of clause to customers.</p>	<p>2.1 Obligation to install meters</p> <p>2.1.2 The <b>distributor</b> must not unreasonably withhold its consent to the request of a <b>retailer</b> or <b>customer</b> to install a <b>metering installation</b> of a type that is different from that already installed, or that the <b>distributor</b> would otherwise install, provided that the <b>metering installation</b> satisfies any applicable technical requirements (including those reasonably required by the <b>distributor</b>).</p>
<p>2.1.3 The incremental cost of providing and installing a new <b>metering installation</b> under clause 2.1.2 shall, to the extent permitted by an <b>applicable regulatory instrument</b>, be paid by the party that initiates the change.</p>	<p>Amend – broaden application of clause to distributors choosing to install a different metering installation.</p>	<p>2.1.3 The incremental cost of providing and installing a new <b>metering installation</b>:</p> <p>(a) under clause 2.1.2, or</p> <p>(b) where the <b>distributor</b> elects to install a different <b>metering installation</b> to that required by the <b>applicable regulatory instruments</b> or ordinarily installed by the <b>distributor</b> for that type of <b>customer</b>,</p> <p>shall, to the extent permitted by an <b>applicable regulatory instrument</b>, be paid by the party that initiates the change.</p>
	<p>New clause – to require distributors to notify the relevant retailer customer where a different metering installation is installed.</p>	<p>2.1.4 Where the <b>distributor</b> elects to install a different <b>metering installation</b> to that required by the <b>applicable regulatory instruments</b> or ordinarily installed by the <b>distributor</b> for that type of <b>customer</b>, the <b>distributor</b> must notify the relevant <b>retailer</b> and <b>customer</b> at least 5 <b>business days</b> prior to the installation.</p>
Editorial issues		
<p>1.6 Other Acts, Codes and guidelines</p> <p>1.6.1(b) the <b>National Gas Law</b> and <b>National Gas Regulations</b></p>	<p>Amend – add reference to the National Gas Rules.</p>	<p>1.6 Other Acts, Codes and guidelines</p> <p>1.6.1(b) the <b>National Gas Law</b>, <b>National Gas Regulations</b> and <b>National Gas Rules</b></p>
<p>1.6.1(g) the retail market procedures, and</p>	<p>Amend – italicise and bold the defined term ‘retail market procedures’.</p>	<p>1.6.1(g) the <b>retail market procedures</b>, and</p>
<p>2.5 Installation database</p> <p>2.5.1 A distributor must maintain an installation database in respect of each metering installation.</p>	<p>Amend – italicise and bold the defined terms.</p>	<p>2.5 Installation database</p> <p>2.5.1 A <b>distributor</b> must maintain an <b>installation database</b> in respect of each <b>metering installation</b>.</p>

Current provision	Nature of amendment	Proposed new provision
<p>2.5.4 The <b>distributor</b> must provide, upon request <i>in writing</i>, access to an <b>affected party</b> to information in the <b>installation database</b> relevant to that person:</p> <p>(a) within two <b>business days</b>, where the information is in an accessible format as required by clause 2.5.3(a), and</p> <p>(b) otherwise within 30 <b>business days</b>, from the date of receipt of the request.</p>	<p>Amend – change “two business days” to “2 business days” and add a paragraph break before “from the date of receipt”.</p>	<p>2.5.4 The <b>distributor</b> must provide, upon request <i>in writing</i>, access to an <b>affected party</b> to information in the <b>installation database</b> relevant to that person:</p> <p>(a) within <u>2</u> <b>business days</b>, where the information is in an accessible format as required by clause 2.5.3(a), and</p> <p>(b) otherwise within 30 <b>business days</b>, from the date of receipt of the request.</p>
<p>3.2 Acceptance testing and type testing of metering installations</p> <p>3.2.2 The distributor must only adopt a new type of metering installation if that metering installation has been type tested.</p>	<p>Amend – italicise and bold the defined terms.</p>	<p>3.2 Acceptance testing and type testing of metering installations</p> <p>3.2.2 The <b>distributor</b> must only adopt a new type of <b><i>metering installation</i></b> if that <b><i>metering installation</i></b> has been <b><i>type tested</i></b>.</p>
<p>3.2.3 The <b>distributor</b> must provide a <b>retailer</b>, copies of the relevant <b>type test</b> certificates in its possession in relation to a <b>meter</b> on request.</p>	<p>Amend – move the words “on request” so that they refer to the retailer.</p>	<p>3.2.3 The <b>distributor</b> must provide a <b>retailer</b>, <u>on request</u>, copies of the relevant <b>type test</b> certificates in its possession in relation to a <b>meter</b>.</p>
<p>3.3 Obligation to test metering installations</p> <p>3.3.3 If as a result of the test requested by a <b>retailer</b> under clause 3.3.1, the <b>metering installation</b> is found to be:</p> <p>(a) <b>defective</b>, the <b>distributor</b> must bear the cost incurred in conducting the test, or</p> <p>(b) not <b>defective</b>, the <b>distributor</b> may seek to recover the cost incurred in conducting the test.</p>	<p>Amend – for clarity, insert a comma after “If”.</p>	<p>3.3 Obligation to test metering installations</p> <p>3.3.3 <u>If, as</u> a result of the test requested by a <b>retailer</b> under clause 3.3.1, the metering installation is found to be:</p> <p>(a) <b>defective</b>, the <b>distributor</b> must bear the cost incurred in conducting the test, or</p> <p>(b) not <b>defective</b>, the <b>distributor</b> may seek to recover the cost incurred in conducting the test.</p>
<p>3.3.6 If a test carried out under clause 3.3.1 requires the flow of <b>gas</b> through a delivery point, then the <b>distributor</b> must ensure that the <b>customer</b> does not pay any material amount for any <b>gas</b> used for the test and not utilised by the <b>customer</b>.</p>	<p>Amend – italicise and bold all defined terms.</p>	<p>3.3.6 If a test carried out under clause 3.3.1 requires the flow of <b>gas</b> through a <b><i>delivery point</i></b>, then the <b>distributor</b> must ensure that the <b>customer</b> does not pay any material amount for any <b>gas</b> used for the test and not utilised by the <b>customer</b>.</p>



Current provision	Nature of amendment	Proposed new provision
<p>3.6 Non-compliant meters</p> <p>3.6.1 If the accuracy of a <b>metering installation</b> does not comply with the requirements of this industry code, or if a <b>distributor</b> becomes aware of any matter which could affect the integrity of the metering data, the <b>distributor</b> must at the cost of the <b>distributor</b>:</p> <p>(a) notify the <b>affected parties</b> as soon as practicable</p> <p>(b) arrange for the accuracy of the <b>metering installation</b> to be restored so that it meets the <b>minimum standards</b> of accuracy, or for the <b>metering installation</b> to be replaced, within 10 <b>business days</b> where the consumption at the <b>delivery point</b> is less than 10 terajoules per annum and 5 <b>business days</b> where the consumption at the <b>delivery point</b> is 10 terajoules per annum or more, or such longer period as may be approved by the <b>Technical Regulator</b>, and</p> <p>(c) until the restoration or replacement of the <b>metering installation</b> in accordance with clause 3.6.1(b) use substitute readings.</p>	<p>Amend – consequential amendment with inclusion of new defined term “substituted meter reading”.</p>	<p>3.6 Non-compliant meters</p> <p>3.6.1 If the accuracy of a <b>metering installation</b> does not comply with the requirements of this industry code, or if a <b>distributor</b> becomes aware of any matter which could affect the integrity of the metering data, the <b>distributor</b> must at the cost of the <b>distributor</b>:</p> <p>(a) notify the <b>affected parties</b> as soon as practicable</p> <p>(b) arrange for the accuracy of the <b>metering installation</b> to be restored so that it meets the <b>minimum standards</b> of accuracy, or for the <b>metering installation</b> to be replaced, within 10 <b>business days</b> where the consumption at the <b>delivery point</b> is less than 10 terajoules per annum and 5 <b>business days</b> where the consumption at the <b>delivery point</b> is 10 terajoules per annum or more, or such longer period as may be approved by the <b>Technical Regulator</b>, and</p> <p>(c) until the restoration or replacement of the <b>metering installation</b> in accordance with clause 3.6.1(b) use <u>substituted meter readings</u>.</p>
<p>3.6.2 Where a measurement error exists and the <b>distributor</b> proposes to substitute previous meter readings, the <b>distributor</b> must limit the substitution of <b>meter</b> readings to:</p> <p>(a) the period where the measurement error was greater than 1.5 times the <b>minimum standards</b> of accuracy, and</p> <p>(b) the period where the measurement error exists, but no earlier than 12 months prior to when the measurement error was known if the measurement error resulted in the <b>customer</b> being undercharged.</p>	<p>Amend – consequential amendment with inclusion of new defined term “substituted meter reading”.</p>	<p>3.6.2 Where a measurement error exists and the <b>distributor</b> proposes to substitute previous meter readings, the <b>distributor</b> must limit the <u>use of substituted meter readings</u> to:</p> <p>(a) the period where the measurement error was greater than 1.5 times the <b>minimum standards</b> of accuracy, and</p> <p>(b) the period where the measurement error exists, but no earlier than 12 months prior to when the measurement error was known if the measurement error resulted in the <b>customer</b> being undercharged.</p>

Current provision	Nature of amendment	Proposed new provision
<p>3.7 Correction</p> <p>3.7.2 A <b>distributor</b> can only make an adjustment for <b>meter</b> error using a <b>corrector</b> or a <b>correction factor</b> when:</p> <p>(a) the <b>corrector</b> and <b>meter</b> for the specified correction is uniquely identified;</p> <p>(b) the accuracy of the <b>meter</b> and/or <b>corrector</b> is within the <b>minimum standards</b></p> <p>(c) the method of adjustment by the <b>corrector</b> can be varied, and</p> <p>(d) the <b>affected parties</b> are advised of the compensation device and the settings used.</p>	Amend – delete semi-colon at the end of subclause (a).	<p>3.7 Correction</p> <p>3.7.2 A <b>distributor</b> can only make an adjustment for <b>meter</b> error using a <b>corrector</b> or a <b>correction factor</b> when:</p> <p>(a) the <b>corrector</b> and <b>meter</b> for the specified correction is uniquely <u>identified</u></p> <p>(b) the accuracy of the <b>meter</b> and/or <b>corrector</b> is within the <b>minimum standards</b></p> <p>(c) the method of adjustment by the <b>corrector</b> can be varied, and</p> <p>(d) the <b>affected parties</b> are advised of the compensation device and the settings used.</p>
<p>4.1 Gas heating value</p> <p>4.1.1 <b>Gas</b> is to be metered by quantity and converted to units of energy for billing purposes using the heating value calculated by the <b>distributor</b> in accordance with a methodology approved by the <b>Technical Regulator</b>.</p>	Amend – for clarity, differentiate between heating value data and heating value methodology, and clarify that the heating value methodology is to be approved by the Technical Regulator.	<p>4.1 Gas heating value</p> <p>4.1.1 <b>Gas</b> is to be metered by quantity and converted to units of energy for billing purposes using the heating value <u>data</u> calculated by the <b>distributor</b> in accordance with a <u>heating value</u> methodology <u>that has been approved</u> by the <b>Technical Regulator</b>.</p>
<p>4.3 Collection of metering data</p> <p>4.3.6 If there is any discrepancy between:</p> <p>(a) the data stored in a metering installation, and</p> <p>(b) metering data in respect of that metering installation, the data stored in the metering installation is to be the prima facie evidence of the quantity of gas or energy, if applicable, supplied to the relevant customer.</p>	Amend – bold and italicise the defined terms.	<p>4.3 Collection of metering data</p> <p>4.3.6 If there is any discrepancy between:</p> <p>(a) the data stored in a <u><b>metering installation</b></u>, and</p> <p>(b) <u><b>metering data</b></u> in respect of that <u><b>metering installation</b></u>, the data stored in the <u><b>metering installation</b></u> is to be the prima facie evidence of the quantity of <u><b>gas</b></u> or energy, if applicable, supplied to the relevant <u><b>customer</b></u>.</p>
<p>4.6 Access to metering data</p> <p>4.6.3 When providing data required under clauses 4.6.1 and 4.6.2, this data must be provided within the timeframes required for the provision of this data contained in the <b>Retail Market Procedures</b>.</p>	Amend – use lower case to refer to defined term 'retail market procedures'.	<p>4.6 Access to metering data</p> <p>4.6.3 When providing data required under clauses 4.6.1 and 4.6.2, this data must be provided within the timeframes required for the provision of this data contained in the <u><b>retail market procedures</b></u>.</p>
<p>6. Definitions and Interpretation</p> <p>"<b>Act</b>" means the <i>Gas Act 1997 (SA)</i></p>	Amend – for consistency with reference to other regulatory instruments.	<p>6. Definitions and Interpretation</p> <p>"<b>Act</b>" means the <i>Gas Act 1997 (SA)</i> <u>as amended from time to time</u></p>
<p>"<b>AER</b>" means the Australian Energy Regulator established under Part IIIA of the <i>Competition and Consumer Act 2010</i></p>	Delete – the defined term is not referred to elsewhere in the Code.	

Current provision	Nature of amendment	Proposed new provision
" <b>Commission</b> " means the Essential Services Commission established under the <b>ESC Act</b>	Amend – use full name of the legislation for the ESC Act.	" <b>Commission</b> " means the Essential Services Commission established under the <u>Essential Services Commission Act 2002 (SA)</u> as amended from time to time
" <b>Demand Delivery Point</b> " has the meaning given in the <b>distributor's Access Arrangement</b>	Delete – the defined term is not referred to elsewhere in the Code.	
" <b>distribution pipeline</b> " has the meaning given to that term in the <i>National Gas (South Australia) Act 2008</i>	Delete – for consistency, refer to the NGL.	" <b>distribution pipeline</b> " has the meaning given to that term in the <b>National Gas Law</b>
" <b>National Energy Retail Law</b> " has the meaning given to that term in the <i>National Energy Retail Law (South Australia) Act 2011</i> as in force from time to time	Amend – replace "as in force from time to time" with "as amended from time to time".	" <b>National Energy Retail Law</b> " has the meaning given to that term in the <i>National Energy Retail Law (South Australia) Act 2011</i> as <u>amended</u> from time to time
	Amend – include a definition for the defined term "National Gas Regulations".	" <b>National Gas Regulations</b> " means the Regulations made under Part 3 of the <i>National Gas (South Australia) Act 2008</i>
" <b>National Gas Law</b> " has the meaning given to that term in the <i>National Gas (South Australia) Act 2008 (SA)</i> as in force from time to time	Amend – replace "as in force from time to time" with "as amended from time to time".	" <b>National Gas Law</b> " has the meaning given to that term in the <i>National Gas (South Australia) Act 2008 (SA)</i> as <u>amended</u> from time to time
" <b>Network Operator</b> " means an entity that participates in the retail gas market of South Australia in the registrable capacity of a "Network Operator" under the National Gas Rules and has registered with AEMO under the National Gas Rules in that capacity	Amend – add "(also commonly referred to as a distributor)" for clarity	" <b>Network Operator</b> " means an entity ( <u>also commonly referred to as a distributor</u> ) that participates in the retail gas market of South Australia in the registrable capacity of a "Network Operator" under the National Gas Rules and has registered with AEMO under the National Gas Rules in that capacity
" <b>retail market procedures</b> " means the rules administered and published by <b>AEMO</b>	Amend – specifically refer to the retail market procedures for South Australia.	" <b>retail market procedures</b> " means the Retail Market Procedures (South Australia) administered and published by <b>AEMO</b> under Chapter 2, Part 7, Division 2 of the <b>National Gas Law</b>
" <b>Volume Delivery Point</b> " has the meaning given in the <b>distributor's Access Arrangement</b>	Delete – the defined term is not referred to elsewhere in the Code.	
4. Distributor Obligations e) The <b>distributor</b> may use Types 4, 5, 6 and 7 in the circumstances described in clauses 5.4, 5.5, 5.6 and 5.7 of this schedule 1, respectively.	Amend – delete paragraph break after "clauses 5.4,".	4. Distributor Obligations e) The <b>distributor</b> may use Types 4, 5, 6 and 7 in the circumstances described in clauses <u>5.4, 5.5</u> , 5.6 and 5.7 of this schedule 1, respectively.
5. Substitution and Estimation Types 5.2 Type 2 (table)	Amend – add missing symbols to indicate whether the read is in the same week as the day in the previous year (❖❖) or the week	5. Substitution and Estimation Types 5.2 Type 2 (table)
Tuesday      Wednesday Tuesday Wednesday		Tuesday      Wednesday (❖❖) Tuesday (❖) Wednesday (❖)

Current provision					Nature of amendment	Proposed new provision			
Wednesday	Wednesday	Tuesday	Thursday	Wednesday	preceding that in which the substitution day occurs in the previous year (❖).	Wednesday	Wednesday (❖❖)	Tuesday (❖❖)	Thursday (❖❖)
	Thursday	Tuesday				Wednesday (❖)	Thursday (❖)	Tuesday	

*Source: ACIL Allen.*

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