

Attachment 13.1

# Tariff Variation Mechanisms and Tariff Structure

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SA Final Plan July 2021 – June 2026  
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## 1. Introduction

In this attachment we describe our proposed form of revenue control, tariff variation mechanism and how we develop tariff classes in order to group network users together on an economically efficient basis.

We also show how the revenue generated by our tariffs lies between the standalone and avoidable costs of providing reference services for each tariff class.

We also discuss how we take into account the Long Run Marginal Cost of the reference services we provide.

## 2. Tariff Variation Mechanisms

We are allowed to vary our prices over the next AA period in accordance with procedures approved in our AA Document (referred to as approved price or tariff variation mechanisms). We are proposing price variation mechanisms in the next AA period that are similar to that applying in the current AA period. In particular, we are proposing:

- to maintain the current annual tariff variation mechanism in the form of a weighted average price cap (WAPC) formula for the next AA period; and
- certain cost-pass-through events for the next AA period.

These matters are discussed in the remainder of this attachment.

### 2.1.1. Form of Revenue Control

We are proposing to maintain the same form of revenue control in respect of HRS that applies in the current AA period. This control places a constraint on the overall average movement in prices from one year to the next (referred to as a weighted average price cap, or WAPC).<sup>1</sup> The constraint allows average prices to increase by the annual change in the Consumer Price Index (CPI) less the X-factor (as determined in Chapter 13) plus an adjustment factor.<sup>2</sup>

This price cap form of revenue control is therefore applied to average prices rather than the total revenue that we can recover. This provides a stronger incentive on the business to increase customer connections and usage relative to a revenue cap. This is because our revenue will increase as the number of customers connected to our network and/or usage increases, whereas the revenue recovered under a revenue cap does not vary with increased usage.

We consider the incentive to increase usage under a price cap is consistent with the growth incentive that applies to a gas distribution network more generally. This reflects that gas is a fuel of choice for most applications (all applications in the case of residential customers). The price cap form of control therefore complements our:

- pricing structures discussed in Chapter 13, particularly our declining price bands that are aimed at encouraging greater network usage/utilisation; and

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<sup>1</sup> The WAPC is a form of tariff basket control, and as such, is consistent with Rule 97(2)(b) of the NGR.

<sup>2</sup> Consistent with the current AA period, we are proposing to increase ARS by the CPI only.

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- marketing initiatives that are aimed at increasing customer connections and network usage (see Chapter 7).

Both initiatives, by encouraging greater network usage, will lower prices to existing customers. This is because prices are determined by dividing building block total revenue (as derived in Chapter 13) by total network usage (as derived in Chapter 12). This means that prices will fall as usage increases.

The proposed WAPC formula, which is consistent with the form of control used in the past three AA periods, is shown in Box 1. The right hand side of the WAPC formula calculates the weighted average of the notional revenues determined for the current year (year t), and the previous year (year t-1), which revenues are determined by applying the actual quantities of gas delivered two years prior (year t-2) to the:

- tariffs proposed to apply in year t (which is the year where the adjusted tariffs will apply); divided by
- tariffs applied to customers in year t-1 (which refers to the tariffs currently applying).

The weighted average of these notional revenues is constrained by the left hand side of the WAPC formula, which allows tariffs to increase by no more than the Consumer Price Index (CPI) less the X factor (the X factor was determined in Chapter 13 of this AAI). The price control formula forms part of Annexure E of the AA Document and is described in more detail in Attachment 14.2.

**Box 1: Tariff Control Formula**

$$(1 + CPI_t)(1 - X_t)(1 + U_t)(1 + PT_t) \geq \frac{\sum_{i=1}^n \sum_{j=1}^m p_t^{ij} q_{t-2}^{ij}}{\sum_{i=1}^n \sum_{j=1}^m p_{t-1}^{ij} q_{t-2}^{ij}} \quad i=1, \dots, n.$$

where:

$CPI_t$  is the annual percentage change in the ABS CPI All Groups, Weighted Average of Eight Capital Cities from the December quarter in year  $t-2$  to the December quarter in year  $t-1$ , calculated using the following method:

The ABS CPI All Groups, Weighted Average of Eight Capital Cities for the December quarter in financial

year  $t-1$

divided by

The ABS CPI All Groups, Weighted Average of Eight Capital Cities for the December quarter in financial

year  $t-2$

minus one.

If the ABS does not, or ceases to, publish the index, then CPI will mean an index which the AER considers is the best available alternative index.

$t$  is the financial year for which tariffs are being set;

$X_t$  is the X factor for each financial year of the 2021–26 Access Arrangement Period as determined in the PTRM as approved in the AER's final decision, and annually revised for the return on debt update calculated for the relevant financial year during the Access Arrangement period in accordance with that approved in the AER's Final Decision;

$U_t$  is the adjustment factor to accommodate unaccounted for gas price variations as outlined in Box 4;

$PT_t$  is the cost pass through factor as outlined Box 5;

$n$  is the number of different Reference Tariffs;

$m$  is the different components, elements or variables ("components") comprised within a Reference Tariff;

$p_t^{ij}$  is the proposed component  $j$  of reference tariff  $i$  in year  $t$ ;

$p_{t-1}^{ij}$  is the prevailing component  $j$  of reference tariff  $i$  in year  $t-1$ ; and

$q_{t-2}^{ij}$  is the audited quantity of component  $j$  of reference tariff  $i$  that was sold in year  $t-2$  (expressed in the units in which that component is expressed (e.g. GJ)).

The adjustment factor is used in both the price control formula. This factor allows for the following pass through adjustment amounts to be recovered from or returned to our customers:

- any pass through amount approved by the AER; and
- any adjustment required to accommodate variations in the price of unaccounted for gas.

### **2.1.2. Rebalancing Control Mechanism**

The rebalancing control provides greater flexibility to adjust prices from one year to the next than allowed for by the price control on its own. The proposed rebalancing control formula is consistent with that used in the current AA period (see Box 2).

The rebalancing control is intended to provide price certainty to customers as it limits the movement in each tariff class to CPI plus X plus 2%. The rebalancing control formula forms part of Annexure E of the Access Arrangement.

**Box 2: Rebalancing Control Formula**

The following formula applies to each tariff class separately

$$(1 + CPI_t)(1 - X_t)(1 + U_t)(1 + PT_t)(1 + 0.02) \geq \frac{\sum_{i=1}^n \sum_{j=1}^m p_t^{ij} q_{t-2}^{ij}}{\sum_{i=1}^n \sum_{j=1}^m p_{t-1}^{ij} q_{t-2}^{ij}}$$

where:

$CPI_t$  is the annual percentage change in the ABS CPI All Groups, Weighted Average of Eight Capital Cities from the December quarter in year  $t-2$  to the December quarter in year  $t-1$ , calculated using the following method:

The ABS CPI All Groups, Weighted Average of Eight Capital Cities for the December quarter in financial

year  $t-1$

divided by

The ABS CPI All Groups, Weighted Average of Eight Capital Cities for the December quarter in financial

year  $t-2$

minus one;

If the ABS does not, or ceases to, publish the index, then CPI will mean an index which the AER considers is the best available alternative index.

$t$  is the financial year for which tariffs are being set.

$X_t$  is the X factor for each financial year of the 2021–26 access arrangement period as determined in the PTRM as approved in the AER's final decision, and annually revised for the return on debt update calculated for the relevant financial year during the access arrangement period in accordance with that approved in the AER's Final Decision;

$U_t$  is the adjustment factor to accommodate unaccounted for gas price variations as outlined in Box 4;

$PT_t$  is the cost pass through factor as outlined Box 5;

$n$  is the number of different reference tariffs in each tariff class;

$m$  is the different components, elements or variables ("components") comprised within a reference tariff;

$p_t^{ij}$  is the proposed component  $j$  of reference tariff  $i$  in year  $t$ ;

$p_{t-1}^{ij}$  is the prevailing component  $j$  of reference tariff  $i$  in year  $t-1$ ; and

$q_{t-2}^{ij}$  is the audited quantity of component  $j$  of reference tariff  $i$  that was sold in year  $t-2$  (expressed in the units in which that component is expressed (e.g. GJ)).

### 2.1.3. Annual Update of Return on Debt Formula

In accordance with the AER's Rate of Return Instrument we will update the return on debt component of the rate of return annually from years 2 to 5 of the next AA period. The calculation for the update to the return on debt is in Box 3 below. These formulas will change to reflect Box 3 below and this is reflected in the amended Access Arrangement document.

#### Box 3: Annual Update of Return on Debt Formula

The annual update of the return on debt component of the rate of return in each regulatory year, starting from 1 July 2022, of the access arrangement period is to be calculated as follows:

For financial year 2021-22:	$R_{2021-22} = (0.5 \times R_{2016-17}) + (0.1 \times R_{2017-18}) + (0.1 \times R_{2018-19}) + (0.1 \times R_{2019-20}) + (0.1 \times R_{2020-21}) + (0.1 \times R_{2021-22})$
For financial year 2022-23:	$R_{2022-23} = (0.4 \times R_{2016-17}) + (0.1 \times R_{2017-18}) + (0.1 \times R_{2018-19}) + (0.1 \times R_{2019-20}) + (0.1 \times R_{2020-21}) + (0.1 \times R_{2021-22}) + (0.1 \times R_{2022-23})$
For financial year 2023-24:	$R_{2023-24} = (0.3 \times R_{2016-17}) + (0.1 \times R_{2017-18}) + (0.1 \times R_{2018-19}) + (0.1 \times R_{2019-20}) + (0.1 \times R_{2020-21}) + (0.1 \times R_{2021-22}) + (0.1 \times R_{2022-23}) + (0.1 \times R_{2023-24})$
For financial year 2024-25:	$R_{2024-25} = (0.2 \times R_{2016-17}) + (0.1 \times R_{2017-18}) + (0.1 \times R_{2018-19}) + (0.1 \times R_{2019-20}) + (0.1 \times R_{2020-21}) + (0.1 \times R_{2021-22}) + (0.1 \times R_{2022-23}) + (0.1 \times R_{2023-24}) + (0.1 \times R_{2024-25})$
For financial year 2025-26:	$R_{2025-26} = (0.1 \times R_{2016-17}) + (0.1 \times R_{2017-18}) + (0.1 \times R_{2018-19}) + (0.1 \times R_{2019-20}) + (0.1 \times R_{2020-21}) + (0.1 \times R_{2021-22}) + (0.1 \times R_{2022-23}) + (0.1 \times R_{2023-24}) + (0.1 \times R_{2024-25}) + (0.1 \times R_{2025-26})$

where:

$kd_t$  is the annual return on debt for financial year t of this Access Arrangement Period;

and

$R_t$  is the annual return on debt observation for each financial year t of this Access Arrangement Period calculated in accordance with the on-the-day return on debt calculation set out in the Rate of Return Instrument.

#### Averaging periods

The averaging periods specified in the AER's Final Decision must be used for the purposes of calculating the annual return on debt observation for each financial year of this Access Arrangement Period.

#### Notification and AER determination of the annual return on debt observation

In the 'PTRM input' sheet of AGN's final decision PTRM, update the relevant cell to reflect the updated return on debt estimate ( $kd_t$ ) each financial year of the Access Arrangement Period.

On the 'X factors' sheet of the final decision PTRM, update the relevant X factor each financial year of the Access Arrangement Period.

The AER will notify AGN of the updated Return on Debt and X factor within 15 business days after the end of AGN's averaging period.

### 2.1.4. Unaccounted for Gas Price Variation Formula

In accordance with the current AA period, we are proposing to deal with the uncertainty surrounding the forecast gas price through the inclusion of a 'true-up' adjustment in our tariff variation mechanism.

In effect, this means that if the actual price we are required to pay for gas is lower (higher) than forecast, then the lower (higher) price will be passed through to our customers.

The price we pay will be the weighted average of wholesale price of natural gas under our UAFG contract and the price of any renewable/carbon neutral gas we are able to secure (either directly from the source, or through our UAFG contract).

We will adjust our tariffs for any variation in unaccounted for gas prices in years 2-5 of the next AA period according to the formula in Annexure E of the Access Arrangement, shown in Box 4 below.

#### Box 4: Unaccounted for Gas Price Variation Formula

The following formula adjusts for price variations in unaccounted for gas

$$U_t = \frac{(1+U'_t)}{(1+U'_{t-1})} - 1$$

where:

$U'_{t-1}$  is:

- (a) zero when financial year  $t-1$  refers to financial year 2021–22
- (b) the value of  $U'_t$ , determined in the financial year  $t-1$  for all other financial years in the Access Arrangement Period

$$U'_t = \frac{DP_{t-2} \times (1 + \text{realWACC}_t) \times (1 + \text{realWACC}_{t-1}) \times (1 + \text{CPI}_{t-1})}{(1 - X_t) \sum_{i=1}^n \sum_{j=1}^m p_{t-1}^{ij} q_{t-2}^{ij}}$$

where:

$t$  is the financial year for which tariffs are being set.

$DP_{t-2}$  is the difference between the actual unaccounted for gas price and the forecast unaccounted for gas price calculated as:

$$DP_{t-2} = (UP_{t-2} \times FQ_{t-2}) - (FP_{t-2} \times FQ_{t-2})$$



where:

$UP_{t-2}$  is the actual price for unaccounted for gas as calculated as the sum of retail gas prices for wholesale, maximum daily quantity (MDQ) and transmission gas in financial year  $t-2$

$FP_{t-2}$  is the price used to forecast the unaccounted for gas (UAFG) allowance in financial year  $t-2$  and is as set out below:

**Forecast Price for UAFG (\$/GJ)(\$2019/20)**

<b>2021/22</b>	12.00
<b>2022/23</b>	12.00
<b>2023/24</b>	12.00
<b>2024/25</b>	12.00
<b>2025/26</b>	12.00

$CPI_t$  is the annual percentage change in the ABS CPI All Groups, Weighted Average of Eight Capital Cities from the December quarter in year  $t-2$  to the December quarter in year  $t-1$ , calculated using the following method:

The ABS CPI All Groups, Weighted Average of Eight Capital Cities for the December quarter in financial

year  $t-1$

divided by

The ABS CPI All Groups, Weighted Average of Eight Capital Cities for the December quarter in financial

year  $t-2$

minus one.

If the ABS does not, or ceases to, publish the index, then CPI will mean an index which the AER considers is the best available alternative index.

$CPI_{t-1}$  is the value of  $CPI_t$  determined in financial year  $t-1$

$realWACC_t$  is the real vanilla weighted average cost of capital as set out in this final decision and updated annually within the PTRM

$realWACC_{t-1}$  is the real vanilla weighted average cost of capital as determined in financial year  $t-1$

$X_t$  is the X factor for each financial year of the 2021–26 Access Arrangement Period as determined in the PTRM as approved in the AER's Final Decision, and annually revised for the return on debt update calculated for the relevant financial year during the access arrangement period in accordance with Box 3

$n$  is the number of different reference tariffs

$m$	is the different components, elements or variables ("components") comprised within a reference tariff
$p_{t-1}^{ij}$	is the prevailing component $j$ of reference tariff $i$ in year $t-1$
$q_{t-2}^{ij}$	is the audited quantity of component $j$ of reference tariff $i$ that was sold in year $t-2$ (expressed in the units in which that component is expressed (e.g. GJ)).

### 2.1.5. Price Variation Process

We are proposing a consistent approach to that applying in the current AA period to varying prices in respect of the annual price adjustments that are to be made over the next AA period. These annual price adjustments are required to account for the annual change in inflation and the applicable X-factor for each year and enables us to recover our allowed building block revenues.

In summary, we will notify the AER in respect of any variations to our prices at least 50 business days before those prices are proposed to come into effect. The notification to the AER will continue to provide an explanation of how the proposed variations comply with the price control and rebalancing control. We will also continue to publish our prices, including our pricing proposals, on our website.

### 2.1.6. Cost-Pass-Through Events

We are allowed to adjust our prices during an AA period:

- to reflect changes in our costs that are not within our control; and/or
- where it is unreasonable to accurately determine the impact of costs; and/or
- where the occurrence of the event is uncertain.

We are only allowed to recover these costs where the cost is considered to be material, which is defined by the AER as an event that has an impact of 1.0% of forecast revenue in the year(s) the event occurs. Any Cost-Pass-Through event must first be approved by the AER before being passed through to customers.

The proposed Cost-Pass-Through Events are consistent with those that applied in the current AA period aside from some minor changes to align with relevant legislation such as the Criminal Code Act 1995 (Cth) with respect to the Terrorism Event and to the NGR with respect to the Network User Failure Event (as rule 531 has been removed from the NGR).

The Pass Through Adjustment Factor Formula will be used to adjust our prices for any cost-pass-through events in the next AA period and is shown in Box 5 below.

**Box 5: Pass Thorough Adjustment Factor Formula**

The following formula adjusts for approved cost pass through events

$$PT_t = \frac{(1 + PT'_t)}{(1 + PT'_{t-1})} - 1$$

where:

$PT'_{t-1}$  is:

- (a) zero when financial year  $t-1$  refers to financial year 2021–22
- (b) the value of  $PT'_t$  determined in the financial year  $t-1$  for all other financial years in the Access

Arrangement Period

and

$$PT'_t = \frac{AP_t}{(1 + CPI_t)(1 - X_t)(1 + U_t) \sum_{i=1}^n \sum_{j=1}^m p_{t-1}^{ij} q_{t-2}^{ij}}$$

where

$AP_t$  is:

- (a) any determined pass through amount that the AER approves in whole or part in financial year  $t$ ; and/or
- (b) any pass through amounts arising from pass through events (as that term is defined in the Access Arrangement applying to AGN in the immediately prior Access Arrangement Period) occurring in the immediately prior Access Arrangement period that AGN proposed to pass through in whole or in part in financial year  $t$ ,

that includes an amount to reflect the time value of money between incurring the costs and recovering the costs, and excludes any amounts already passed through in reference tariffs.

$CPI_t$  is the annual percentage change in the ABS CPI All Groups, Weighted Average of Eight Capital Cities from the December quarter in year  $t-2$  to the December quarter in year  $t-1$ , calculated using the following method:

The ABS CPI All Groups, Weighted Average of Eight Capital Cities for the December quarter in financial

year  $t-1$

divided by

The ABS CPI All Groups, Weighted Average of Eight Capital Cities for the December quarter in financial year  $t-2$  minus one.

If the ABS does not, or ceases to, publish the index, then CPI will mean an index which the AER considers is the best available alternative index.

$t$  is the financial year for which tariffs are being set.

$X_t$  is the X factor for each financial year of the 2021–26 Access Arrangement Period as determined in the PTRM as approved in the AER's Final Decision, and annually revised for the return on debt update calculated for the relevant financial year during the Access Arrangement Period in accordance with Box 3

$U_t$  is the adjustment factor to accommodate unaccounted for gas price variations as outlined in Box 4

$p_t^{ij}$  is the proposed component  $j$  of reference tariff  $i$  in year  $t$

$p_{t-1}^{ij}$  is the prevailing component  $j$  of reference tariff  $i$  in year  $t-1$

$q_{t-2}^{ij}$  is the audited quantity of component  $j$  of reference tariff  $i$  that was sold in year  $t-2$  (expressed in the units in which that component is expressed (e.g. GJ)).

The proposed Cost-Pass-Through Events are set out below and in Section 4.5 of the Access Arrangement document (Attachment 14.2).

Cost Pass through Events are:

- a a Regulatory Change Event;
- b a Service Standard Event;
- c a Tax Change Event;
- d a Terrorism Event;
- e a Network User Failure Event;
- f an Insurer Credit Risk Event;
- g an Insurance Cap Event; and
- h a Natural Disaster Event.

Where:

**'Regulatory Change Event'** means:

A change in a regulatory obligation or requirement that:

- a falls within no other category of pass through event; and
- b occurs during the course of an Access Arrangement Period; and
- c substantially affects the manner in which AGN provides Reference Services; and
- d materially increases or materially decreases the costs of providing those services.

**'Service Standard Event'** means:

A legislative or administrative act or decision that:

- a has the effect of:
  - i substantially varying, during the course of an Access Arrangement Period, the manner in which AGN is required to provide the Reference Service; or
  - ii imposing, removing or varying, during the course of an Access Arrangement Period, minimum service standards applicable to the Reference Service; or
  - iii altering, during the course of an access arrangement period, the nature or scope of the Reference Service, provided by AGN; and
- b materially increases or materially decreases the costs to AGN of providing the Reference Service.

**'Tax Change Event'** means:

A tax change event occurs if any of the following occurs during the course of an Access Arrangement Period for AGN:

- a a change in a Relevant Tax, in the application or official interpretation of a Relevant Tax, in the rate of a Relevant Tax, or in the way a Relevant Tax is calculated; or
- b the removal of a Relevant Tax; or
- c the imposition of a Relevant Tax; and
- d in consequence, the costs to AGN of providing prescribed reference services are materially increased or decreased.

**'Terrorism Event'** means:

An act (including, but not limited to, the use of force or violence or the threat of force or violence) of any person or group of persons (whether acting alone or on behalf of or in connection with any organisation or government), which:

- a from its nature or context is done for, or in connection with the intention of advancing a political, religious, ideological or similar cause (including the intention to coerce or influence, by intimidating any government and/or intimidating the public, or any section of the public); and
- b increases the costs to AGN of providing the Reference Service.

Note for the avoidance of doubt, in making a determination on a Terrorism Event, the AER will have regard to, amongst other things:

- i whether AGN has insurance against the event;

- ii the level of insurance that an efficient and prudent service provider would obtain in respect of the event; and
- iii whether a declaration has been made by a relevant government authority that an act of terrorism has occurred.

**'Network User Failure Event'** means:

The occurrence of an event where:

- a a Retailer of Last Resort (RoLR) Event as defined in section 122 of the National Energy Retail Law has occurred; and
- b AGN incurs costs in responding to the RoLR event in accordance with its obligations under the NERL, NERR, NGL or NGR (including Guidelines and procedures that are binding under those instruments), and
- c the costs are not recoverable by AGN under other provisions of the NERL, NERR, NGL or NGR as in force at the time of the event, including but not limited to the NGR and other pass through events in this Access Arrangement.

Note for the avoidance of doubt, in making a determination on a Network User Failure Event, the AER will have regard to, amongst other things, the extent to which AGN has taken steps to minimise the costs associated with its responsibilities in a RoLR Event, both prior to, and after, the RoLR Event was triggered.

**'Insurer Credit Risk Event'** means:

An event where:

- a an insurer of AGN becomes insolvent; and
- b as a result, in respect of an existing, or potential, claim for a risk that was insured by the insolvent insurer, AGN:
  - i is subject to a higher or lower claim limit or a higher or lower deductible than would have otherwise applied under the insolvent insurer's policy; or
  - ii incurs additional costs associated with self-funding an insurance claim, which would otherwise have been covered by the insolvent insurer.

Note for the avoidance of doubt, in making a determination on an Insurer Credit Risk Event, the AER will have regard to, amongst other things:

- a AGN's attempts to mitigate and prevent the event from occurring by reviewing and considering the insurer's track record, size, credit rating and reputation; and
- b in the event that a claim would have been made after the insurance provider became insolvent, whether AGN had reasonable opportunity to insure the risk with a different insurer.

**'Insurance Cap Event'** means:

An event where:

- a AGN makes a claim or claims and receives the benefit of a payment or payments under a relevant insurance policy;
- b AGN incurs costs beyond the relevant policy limit; and
- c the costs beyond the relevant policy limit increase the costs to AGN of providing the Reference Service.

For this Insurance Cap Event:

- d a relevant insurance policy is an insurance policy held during the Access Arrangement Period or a previous period in which access to the pipeline services was regulated; and
- e AGN will be deemed to have made a claim on a relevant insurance policy if the claim is made by a related party of AGN in relation to any aspect of the Network of AGN's business.

Note for the avoidance of doubt, in making a determination on an Insurance Cap Event, the AER will have regard to, amongst other things:

- i the insurance policy for the event;
- ii the level of insurance that an efficient and prudent service provider would obtain in respect of the event; and
- iii any assessment by the AER of AGN's insurance in approving the access arrangement for the South Australian gas distribution network for the relevant period.

**'Natural Disaster Event'** means:

Any natural disaster including but not limited to fire, flood or earthquake that occurs during the Access Arrangement Period that increases the cost to the Service Provider in providing the Reference Service, provided the fire, flood or other event was not a consequence of the acts or omissions of AGN.

Note for the avoidance of doubt, in making a determination on a Natural Disaster Event, the AER will have regard to, amongst other things:

- a whether AGN has insurance against the event; and
- b the level of insurance that an efficient and prudent service provider would obtain in respect of the event.

**Materiality threshold** is defined as:

For the purpose of any defined event, an event is considered to materially increase or decrease costs where that event has an impact of one per cent of the smoothed forecast revenue specified in the Access Arrangement Information, in the years of the Access Arrangement Period that the costs are incurred.

### 3. Grouping of Reference Tariffs on an Economically Efficient Basis

We have developed our tariff classes in recognition of the need to group together network users on an economically efficient basis as required by NGR 94(2)(a).

Tariff classes have been developed to ensure that customers with similar characteristics (and therefore cost drivers) are allocated to the same tariff class. The customer characteristics that have been considered are the:

- nature of the Haulage Reference Services (HRS) provided to a Delivery Points (DPs) (i.e. Residential, Commercial or Demand); and
- the location of the customer on the distribution network.

This grouping of customers is consistent with accepted good industry practice.

#### 3.1. Transaction Costs

The proposed reference tariff structures and associated charging parameters effectively balance the objectives of minimising transaction costs (NGR 94(2)(b)) and providing appropriate price signals to network users. This reflects that:

- our proposed tariffs and tariff structures are consistent with industry practice; and that
- our proposed tariffs and tariff structures are the same, with the exception of the change to the name of one existing tariff, as those currently applying in South Australia.

In summary, the transaction costs associated with AGN's tariffs are likely to be consistent with that across the gas industry given its tariff structures are consistent with industry practice. Transaction costs will be no higher than is currently the case given our proposal to maintain the same tariffs that currently apply.

#### 3.2. Stand Alone and Avoidable Costs

Rule 94(3) requires that for each tariff class, the revenue expected to be recovered should lie on or between:

- “(a) an upper bound representing the stand alone cost of providing the reference service to customers who belong to that class; and
- (b) a lower bound representing the avoidable cost of not providing the reference service to those customers.”

We have defined the stand-alone costs for each tariff class as the costs of providing a distribution network to supply only that tariff class. These costs represent the upper bound of providing reference services to each tariff class, because the costs are calculated based on the assumption that no other tariff class uses the network, thereby ignoring the economies of scale arising from sharing fixed costs with other tariff classes.

We have defined the avoidable cost for each tariff class to be the cost that can be avoided by not providing reference services to that tariff class. Put another way, this represents the costs (i.e. the



Table 1: South Australia Avoidable, Expected and Stand Alone Costs (\$2020/21, million)

Tariff Class	Avoidable Costs (\$ million)	Weighted Average Revenue (\$ million)	Stand Alone Costs (\$ million)	Complies
<b>Tariff R</b>	1.2	167.4	197.1	<b>Yes</b>
<b>Tariff C</b>	6.0	32.1	51.1	<b>Yes</b>
<b>Tariff D - Adelaide Northern</b>	2.0	6.6	26.1	<b>Yes</b>
<b>Tariff D - Adelaide Central</b>	1.2	4.4	26.1	<b>Yes</b>
<b>Tariff D - Adelaide Southern</b>	0.5	1.3	26.1	<b>Yes</b>
<b>Tariff D - Port Pirie</b>	0.1	0.5	26.1	<b>Yes</b>
<b>Tariff D – Peterborough</b>	0.0	0.0	26.1	<b>Yes</b>
<b>Tariff D - Riverland</b>	0.0	0.3	26.1	<b>Yes</b>
<b>Tariff D - South East</b>	0.1	0.3	26.1	<b>Yes</b>
<b>Tariff D - Whyalla</b>	0.0	0.0	26.1	<b>Yes</b>

return on capital, depreciation and operating expenditure (opex) associated with dedicated connection assets such as meters, inlets and services.

The tariff cost allocation model (TCAM) calculates the standalone and avoidable cost for each tariff class and demonstrates that the revenue expected to be recovered from each tariff class lies on or between the stand alone and avoidable cost of providing reference services. The methodology applied in the TCAM is the same as that currently used by AGN for our Victorian and Albury networks, which approaches have been approved by the AER as satisfying Rule 94(3).

The stand-alone cost for all tariff classes was determined to be the cost associated with the major transmission and high-pressure distribution mains forming the core of the network plus the regulator stations. These assets comprise the large diameter, high pressure pipes used in the networks to service customers. The derivation of stand-alone costs also includes the dedicated connection assets used to supply residential and non-residential customers.

The avoidable cost is defined as the cost that can be avoided by not providing reference services to a particular tariff class. The avoidable cost for each tariff class is defined as the costs (i.e. return on capital, depreciation and operating expenditure) associated with dedicated connection assets, such as services and meters.

Table 1 shows the outputs of the TCAM regarding stand-alone and avoidable costs, excluding Goods and Services Tax. The table demonstrates that the 2021/22 weighted average revenue for each tariff class lies above the lower bound avoidable cost and below the upper bound stand-alone cost. Our Reference Tariffs therefore comply with Rule 94(3) of the NGR in all cases.

## 4. Long-Run Marginal Costs

### 4.1. Definition of Long-Run Marginal Cost

Under Rule 94(4)(a) we are required to take account of the Long-Run Marginal Cost (LRMC) for the Reference Services and for each element of each Reference Service when setting tariffs. For this purpose, we define LRMC as a measure of the change in costs as output increases, when all factors of production are variable. This aligns closely with the LRMC as defined in the National Electricity Rules as no such definition exists in the NGR.

### 4.2. AGN's Approach to Calculating LRMC

Our approach to calculating the LRMC was developed with regard to the methodologies adopted for our previous South Australian and Victorian AA reviews. This methodology applies the Average Incremental Cost (AIC) approach, whereby the present value of the incremental investment (both capital and operating expenditure) associated with increasing capacity in the long term is divided by the present value of the change in incremental demand.

The AIC approach to calculating the LRMC is set out in Box 6: Average Incremental Cost Approach to Calculating the LRMC.

Using the methodology outlined above, we calculated the LRMC for our distribution networks in South Australia by tariff class. Specifically, the LRMC varies depending on several factors, including customer type, location and gas consumption profiles.

These factors are reflected in our tariff classes, and as a result, we have calculated the LRMC for each tariff class.

Box 6: Average Incremental Cost Approach to Calculating the LRMC

$$MC = \frac{PV(\text{growth related shared network capex}) + PV(\text{growth related shared network opex})}{PV(\text{incremental demand})}$$

where:

- PV refers to the 'present value';
- growth related shared network capex is the forecast annual capital expenditure (capex) in shared network assets required to meet additional demand over the nominated forecast period;
- growth related shared network opex is the forecast annual opex required to operate and maintain the shared network assets required to meet additional demand over the nominated forecast period; and
- incremental demand is the change in gas demand (in gigajoules) for each year over the nominated forecast period.

## 4.3. Considerations in the Calculation of LRMC

### 4.3.1. Growth Related Expenditure

Consistent with past approaches, we have only included forecast expenditure (both capital and operating expenditure) relating to the forecast growth of the shared network to service additional customer demand in the LRMC calculation. This is because the calculation of the LRMC relies on the key assumptions that expenditure on shared network assets is driven by growth in customer demand.

Forecast expenditure associated with connection assets such as meters and services are not included in the LRMC calculation. This is because connection assets are typically dedicated to specific customers and are driven by customer numbers, not demand growth.

### 4.3.2. Forecast Period

The length of the forecast period over which the LRMC is calculated should take into consideration the useful life of shared network assets. However, the forecast period is not typically set to equal the useful life of new network assets (which can be as long as 60 years) because capital expenditure, operating expenditure and demand forecasts cannot be produced for such a long period into the future with any degree of accuracy.

We have adopted a forecast period of 10 years as we consider that this period captures long-run costs without drawing on longer-term forecasts that are more unreliable.

## 4.4. LRMC Calculation Outcomes

We were unable to calculate reasonable values for the LRMC at the tariff class level, by geographical region or even at a whole-of-network level for South Australia. The LRMC values calculated were either too large (relative to the actual tariffs within each tariff class) or negative. This is consistent with the LRMC calculation outcomes achieved for previous South Australian and Victorian AA reviews. AGN analysed the data and underlying assumptions which led to these outcomes and identified that:

- forecast capital and operating expenditure cannot be produced down to the tariff class level or by geographical location in South Australia;
- consequently, expenditure was allocated on a pro-rata basis using a combination of customer numbers and consumption in order to derive expenditure at the tariff class level;
- the forecast growth-related capital expenditure and operating expenditure relates to projects which only affect small segments of the gas distribution network that are experiencing localised growth in customer numbers;
- gas consumption is not growing steadily in any of the tariff classes in South Australia; and
- in fact, demand growth for South Australian volume customers is declining (i.e. negative growth) over the next 10 years (see Chapter 12).

This means that:

- there is insufficient data at the level of detail required to accurately and meaningfully calculate the LRMC by geographical region and by tariff class; and

- the forecast expenditure and demand data suggests that, at the tariff class level, expenditure on shared network assets is not driven by growth in customer demand.

As a result, it is not possible to obtain reasonable LRMC outcomes using the AIC approach given the data limitations. Further, we are not aware of any other suitable or practical approaches to quantifying the LRMC in light of the issues identified above.

#### **4.5. Consideration of LRMC When Developing Tariffs**

Rule 94(4)(a) requires that a tariff, and if it consists of two or more charging parameters, each charging parameter for a tariff class, must take into account the LRMC for the Reference Service or, in the case of a charging parameter, for the element of the service to which the charging parameter relates. In addition, our Final Plan must demonstrate how the relevant LRMC has been taken into account in determining a tariff for a tariff class or the charging parameters within a tariff class.

In developing our Final Plan we have had regard to the LRMC when determining the Reference Tariffs for each tariff class or the charging parameters within each tariff class. Consistent with the approach currently applied for Victoria and Albury, we have designed tariffs and tariff parameters to effectively signal the LRMC to network users.

In particular, the proposed tariffs are developed with regard to:

- the capital costs of network extensions beyond the network's current footprint;
- declining block structure – signalling the declining incremental cost of additional gas consumption; and
- capacity based charges – signalling the impact of peak demand on capex.

The provision of Ancillary Reference Services (ARS) is an operating expense we incur. There is no change in the LRMC of providing these services irrespective of the quantity of these services demanded. The tariffs applied for ARS are therefore based on a flat rate as there is no LRMC to signal to customers.

#### **4.6. Response to Price Signals**

Rule (94)(4)(b)(ii) of the NGR requires that a tariff, and each charging parameter for a tariff class, must be determined having regard to whether customers belonging to the relevant tariff class are able or likely to respond to price signals. The proposed tariffs and the charging parameters that constitute each tariff have been designed in such a manner that customers are able or likely to respond to price signals.

The way in which the Tariffs R, C and D, and their associated charging parameters, have been developed is set out below.

The proposed Reference Tariffs for 2021/22 are set out in Table 13.8, Table 13.9 and Table 13.10 of Chapter 13.

#### **4.7. Demand Tariffs**

Demand tariffs have been structured so that customers can respond to pricing signals whilst providing certainty to customers on the amount of their annual charge. This is because the demand tariffs are structured as 'declining block tariffs' based only on an agreed MDQ, not the

actual consumption of gas consumed on any given day. Consequently, the demand tariff structures motivate our largest customers (who consume the largest share of gas) to manage their actual gas consumption within the constraints of their agreed MDQ. This promotes better capacity utilisation of the network (noting that agreed MDQ will decrease if actual MDQ decreases).

The structure also ensures that the difference in the network charge between demand tariffs and the commercial tariff is as small as possible for a customer consuming 10 terajoules per annum (10 terajoules being the threshold by which a customer is required to shift from a volume-based commercial tariff to a capacity-based demand tariff). These customers currently face an increase to their network charge as they transition to a demand tariff despite not imposing any additional requirements on the network.

#### 4.8. Domestic and Commercial Tariffs

The variable nature of the volume charge for residential and commercial tariffs imply that customers are able to and can respond to price signals, by adjusting their consumption of gas. Furthermore, the residential threshold that defines the step between the first, second and third tariff bands has been set with regard to the spread of appliance penetration across domestic network users in South Australia. Both these measures promote efficient use of the network and help to address the long-term decline in average consumption.

#### 4.9. Ancillary Reference Services

ARS tariffs reflect the operating expense of providing these services. Each tariff reflects the actual cost of providing each service and therefore delivers the appropriate price signal.

### 5. Prudent Discounts

Some of our larger industrial customers have a feasible option of either:

- bypassing the Network to take supply directly from the natural gas transmission pipeline; or
- using electricity rather than gas (noting that, in most cases, natural gas is a fuel of choice).

Under these scenarios, AGN may be required to offer a discount to the Reference Tariff to attract or retain the customer on the Network. AGN is required to determine whether attracting a new or retaining an existing large industrial customer by negotiating a discount to the Reference Tariff (referred to as a prudent discount) is in the best interests of existing customers. This occurs when the incremental revenue received from the customer is higher than the incremental costs of providing HRS to that customer.

The existing customer base is better off under this scenario because the difference between incremental revenue and cost is reflected through lower Reference Tariffs to existing customers than would otherwise be the case. This reflects that any revenue recovered in excess of the incremental cost from serving that customer contributes to the fixed costs of providing HRS (which fixed costs do not change regardless of whether the new customer connects to the Network or not).

The information regarding prudent discounts is confidential as it relates to the particular circumstances of an individual customer (this information is provided in Attachment 13.3 (Prudent Discount Summary)). This attachment is provided on a confidential basis to the AER to verify that

the incremental (discounted) revenue exceeds the incremental cost for each customer that receives a prudent discount.

Given the above, the provision of the prudent discount has lowered Reference Tariffs to existing customers taking supply from the Network. The proposed prudent discounts are therefore consistent with Rule 96(2)(b).