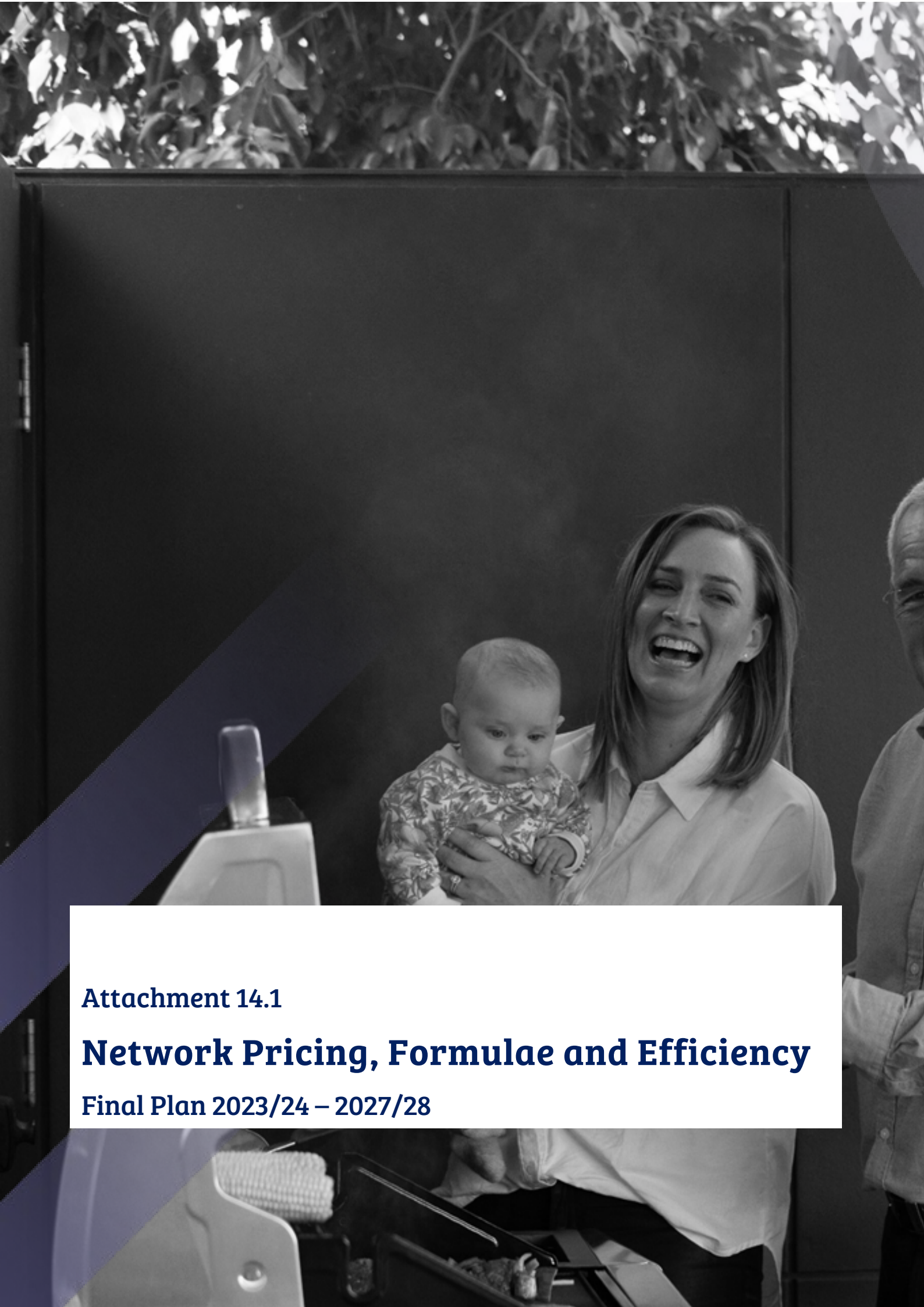

Attachment 14.1

Network Pricing, Formulae and Efficiency

Final Plan 2023/24 – 2027/28

1 Introduction

Multinet Gas Distribution Partnership (MGN) charges tariffs to customers connected to the MGN natural gas distribution network (the network) in order to recover revenue and fund network operations. MGN is proposing to remove the seasonal component of the tariff structures that currently apply in the networks.

This Attachment details the proposed tariffs to apply over the next (2023/24 to 2027/28) Access Arrangement (AA) period including the formula by which these tariffs may be adjusted.

2 Efficient Tariffs

We are required by the National Gas Rules (NGR) to allocate total recoverable revenue between our Reference and Other Services on an efficient basis, reflective of the allocation of costs to each service.[1] We recover this allocated revenue by charging customers who use this service a tariff.

This section outlines how our tariffs are efficient, reflective of our customer base and, as such, are consistent with the NGR. It provides:

- demonstration of efficient prices, including estimates of:
  - i) stand-alone and avoidable costs;
  - ii) long-run marginal costs (LRMC);
  - iii) consideration of transaction costs; and
  - iv) consideration of a customer's ability to respond to price signals.

2.1 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 an upper bound representing the stand alone cost of providing the reference service to customers who belong to that class and a lower bound representing the avoidable cost of not providing the reference service to those customers.

MGN has 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. 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.

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. MGN has defined avoidable cost for each tariff class to be the cost that can be avoided by not providing reference services to that tariff class.

MGN's Cost Allocation Model (CAM, provided as Attachment 14.2) 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

[1] Rule 93 of the NGR imposes requirements on MGN regarding the allocation of revenue and costs to Reference Services. Further information on the Regulatory Framework is provided in Attachment 1.1.

stand alone and avoidable cost of providing reference services. The methodology applied in the CAM is the same as used for the Victoria and Albury networks, which approach has been approved by the AER as satisfying Rule 94(3).[2]

Table 2.1 shows the outputs of the CAM regarding stand-alone and avoidable costs, excluding Goods and Services Tax. The table demonstrates that the 2023/24 weighted average revenue for each tariff class lies above the lower bound avoidable cost and below the upper bound stand alone cost. MGN's Reference Tariffs therefore comply with Rule 94(3) of the NGR in all cases.

Table 2.1: Multinet Avoidable, Expected and Stand Alone Costs $2022/23

Tariff Class	Avoidable Costs ($ million)	Expected Revenue ($ million)	Stand Alone Costs ($ million)	Complies
Residential (Metro)	$5.21	$200.99	$205.85	Yes
Residential (YV)	$0.04	$2.21	$2.87	Yes
Residential (SG)	$0.05	$2.20	$2.89	Yes
Non res (Metro)	$0.29	$10.07	$11.72	Yes
Non res (YV)	$0.00	$0.16	$1.27	Yes
Non res (SG)	$0.00	$0.43	$1.35	Yes
Tariff L	$0.00	$0.02	$1.31	Yes
Tariff D (Metro)	$0.00	$1.84	$2.44	Yes
Tariff D (SG)	$0.00	$0.08	$1.22	Yes
Turn On / Reconnections	$0.00	$0.04	$0.04	Yes
Meter Investigations	$0.00	$0.42	$0.42	Yes
Disconnections	$0.00	$0.62	$0.62	Yes
Special meter reading	$0.00	$0.25	$0.25	Yes
Meter Removals	$0.00	$0.01	$0.01	Yes

[2] AER, *Final decision Australian Gas Networks Access Arrangement – Attachment 10 – Reference Tariff Setting*, May 2016, page 10-12.

2.2 Long-Run Marginal Costs

Rule 94(4)(a) requires MGN to take account of the LRMC for the Reference Services and for each element of each Reference Service when setting tariffs. For this purpose, MGN defines 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 although MGN notes no such definition exists in the NGR.[3]

2.2.1 MGN's Approach to Calculating LRMC

MGN's approach to calculating the LRMC was developed with regard to the methodologies adopted for the last Victoria and Albury AA review and the more recent South Australian AA review. 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. These factors are reflected in MGN's tariff classes, and as a result, MGN has attempted to calculate the LRMC for each of its tariff classes.

2.2.2 Calculation Outcomes

MGN was 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 Victoria and Albury. The LRMC values calculated were either too large (relative to the actual tariffs within each tariff class) or negative. Further, MGN is not aware of any other suitable or practical approaches to quantifying the LRMC in light of the issues identified above.

Despite not being able to quantify the LRMC, MGN has still had regard for the LRMC when determining its tariffs. Consistent with MGN's approach in South Australia, MGN has designed its tariff parameters in order to effectively signal LRMC to network users, in particular to signal the impact that network users will have on the cost of providing network services. This is evidenced in MGN's tariffs by the use of:

1. geographic price signals – which signal the cost to the customer of connecting to a particular geographic zone;
2. declining block structure – which signal to the customer the declining incremental cost of additional gas consumption (reflecting the low margin cost of services); and
3. capacity based charges – which signal to demand customers the impact of peak demand on capital expenditure.

2.2.3LRMC and Ancillary Reference Services

The provision of ARS is an operating expense incurred by MGN. There is no change in the long-run cost of providing the services irrespective of the quantity of these services demanded. The tariff applied to customers requiring an ARS is therefore a flat rate as there is no LRMC to signal to customers.

2.3 Response to Price Signals

Rule (94)(4)(b)(ii) of the NGR requires that a tariff, and if it consists of two or more charging parameters, 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. MGN has developed its tariffs and the charging parameters that constitute each tariff in such a manner that customers are able or likely to respond to price signals.

The way in which the MGN's Residential, Commercial and Demand tariffs and their associated charging parameters, have been developed is set out below. MGN's proposed Reference Tariffs for 2023/24 are set out in Section 3 of this Attachment.

3 AEMC, *National Electricity Rules* – Version 71, April 2015, page 1,166.

2.3.1 Haulage Reference Services

Domestic and Non-Domestic 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 the MGN network. Both these measures promote efficient use of the network and assist MGN to address the long-term decline in average consumption.

As discussed in Chapter 14, we are proposing to change the seasonal aspect of our tariff structure. Currently we have a seasonal tariff structure which varies tariffs across the five volumetric blocks throughout the year. The Peak period which covers the coldest time of year and hence the highest gas consumption period of June to September, Off-Peak which covers the warmer months and hence lowest consumption period of November to April and shoulder periods May and October.

We consider this structure overly complex, with fifteen different volumetric charging parameters applying in each of the Residential and Commercial segments, in addition to the fixed charge. The peak period prices are the highest when demand for gas is at its greatest for space heating, and therefore the least discretionary for customers.

We also consider the complex structures drive higher transaction costs for retailers (i.e. the costs of maintaining the tariff structures and indeed billing according to the tariff structures). These transaction costs are then passed on to consumers, with more complex structures generating more cost.

The removal of seasonal pricing was tested with customers directly through our customer workshops, with around 80% of participants supporting the change. We therefore see an opportunity to simplify our tariff structures, lowering these transactional costs, sending clearer price signals to customers and providing more transparency for all stakeholders in the long-term. In this Final Plan we propose to remove the seasonality in our prices.

Also, as advised in the Chapter 14, we will cease to offer Tariff L to customers from 1 July 2023, unless a customer was assigned to Tariff L prior to that date. We are proposing this action as we have fewer than 15 customers assigned to this tariff.

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 Maximum Hourly Quantity (MHQ), not the actual consumption of gas consumed on any given day. Consequently, the demand tariff structures motivate customers to manage their actual gas consumption within the constraints of their agreed MHQ. This promotes better capacity utilisation of MGN's network (noting that agreed MHQ will decrease if actual MHQ decreases).

Ancillary Reference Services

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

3 Network Pricing

MGN recovers its regulated revenue by charging Reference Tariffs to customers for Haulage Reference Services (HRS) and Ancillary Reference Services (ARS). As we have shown, the proposed tariffs are modelled to be revenue neutral and fall between the stand alone and avoidable costs of providing reference services to these zones. The tariff structures are efficient, contain no cross-subsidy and have taken into account factors such as transaction costs, LRMC and the ability for consumers to respond to price changes.

The proposed tariffs to take effect as at 1 July 2023 are detailed in Tables 3.1 through 3.4.

Table 3.1: Tariff R – Residential Haulage Service Tariffs 2023/24

Charges (excluding Goods and Services Tax $nominal)	
Tariff V – Multinet Metro	
Base Charge ($ per day)	0.1870
Charge for the first 0.05 gigajoules of gas delivered ($ per gigajoule)	9.0846
Charge for the next 0.05 gigajoules of gas delivered ($ per gigajoule)	6.0710
Charge for the next 0.05 gigajoules of gas delivered ($ per gigajoule)	2.9434
Charge for the next 0.10 gigajoules of gas delivered ($ per gigajoule)	1.5062
Charge for additional gas delivered ($ per gigajoule)	1.1302
Tariff V – Multinet Yarra Valley Towns	
Base Charge ($ per day)	0.1870
Charge for the first 0.05 gigajoules of gas delivered ($ per gigajoule)	11.1290
Charge for the next 0.05 gigajoules of gas delivered ($ per gigajoule)	8.3922
Charge for the next 0.05 gigajoules of gas delivered ($ per gigajoule)	5.6223
Charge for the next 0.10 gigajoules of gas delivered ($ per gigajoule)	4.4789
Charge for additional gas delivered ($ per gigajoule)	4.1901
Tariff V – Multinet Gippsland Towns	
Base Charge ($ per day)	0.1870
Charge for the first 0.05 gigajoules of gas delivered ($ per gigajoule)	12.1529
Charge for the next 0.05 gigajoules of gas delivered ($ per gigajoule)	9.2374
Charge for the next 0.05 gigajoules of gas delivered ($ per gigajoule)	6.2503
Charge for the next 0.10 gigajoules of gas delivered ($ per gigajoule)	5.0229
Charge for additional gas delivered ($ per gigajoule)	4.7049

Table 3.2: Tariff C Non-Residential Haulage Service Tariffs 2023/24

Charges (excluding Goods and Services Tax $nominal)	
Tariff V – Multinet Metro	
Base Charge ($ per day)	0.3084
Charge for the first 0.25 gigajoules of gas delivered ($ per gigajoule)	4.0771
Charge for the next 0.75 gigajoules of gas delivered ($ per gigajoule)	2.3996
Charge for the next 0.50 gigajoules of gas delivered ($ per gigajoule)	1.3410
Charge for the next 3.5 gigajoules of gas delivered ($ per gigajoule)	0.7789
Charge for additional gas delivered ($ per gigajoule)	0.2446
Tariff V – Multinet Yarra Valley Towns	
Base Charge ($ per day)	0.3070
Charge for the first 0.25 gigajoules of gas delivered ($ per gigajoule)	7.1992
Charge for the next 0.75 gigajoules of gas delivered ($ per gigajoule)	5.5069
Charge for the next 0.50 gigajoules of gas delivered ($ per gigajoule)	4.3841
Charge for the next 3.5 gigajoules of gas delivered ($ per gigajoule)	3.9123
Charge for additional gas delivered ($ per gigajoule)	3.4793
Tariff V – Multinet Gippsland Towns	
Base Charge ($ per day)	0.3084
Charge for the first 0.25 gigajoules of gas delivered ($ per gigajoule)	7.9544
Charge for the next 0.75 gigajoules of gas delivered ($ per gigajoule)	6.1246
Charge for the next 0.50 gigajoules of gas delivered ($ per gigajoule)	4.8973
Charge for the next 3.5 gigajoules of gas delivered ($ per gigajoule)	4.4146
Charge for additional gas delivered ($ per gigajoule)	3.9520

Table 3.3: Tariff D Demand Haulage Service Tariffs 2023/24 ($nominal)

Tariff D – Multinet	Metro	Gippsland Towns
50 gigajoules or less ($ per GJ MHQ)	635.4985	686.6530
Additional gigajoules ($ per GJ MHQ)	108.1330	116.8212

Table 3.4: Tariff L Tariffs 2023/24 ($nominal)

Tariff L – Multinet Metro	
5 gigajoules or less ($ per gigajoule)	0.5486
Additional gigajoules ($ per gigajoule)	0.1338
Rolling 12-month Maximum MHQ Distribution Demand tariff component ($/MHQ per day)	0.5491
Peak MHQ Distribution Demand tariff component ($/MHQ per day)	1.6429

Table 3.5: Ancillary Reference Services Tariffs 2023/24 ($nominal)

Ancillary Reference Service	$ nominal
Turn On / Reconnections	$52.87
Meter Investigations	$179.03
Disconnections	$62.72
Special meter reading	$8.04
Meter Removals	$72.15

4 Tariff Variation Mechanisms

MGN proposes to align the annual tariff variation mechanism in the form of a weighted average price cap (WAPC) formula with that applying to the Victoria & Albury networks in the current AA period. The WAPC is a form of tariff basket control, and as such, is allowed for under Rule 97(2)(b) of the NGR. A WAPC constrains the overall movement in Reference Tariffs (as opposed to the movement in individual tariffs) within the AA period.

The proposed WAPC formula is shown in Box 3.1. The left 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:

1. tariffs proposed to apply in year t (which is the year where the adjusted tariffs will apply); divided by
2. 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 plus a cost pass through factor.

The tariff control formula forms part of Annexure D of the Reference Tariff Policy of the AA Document.

4.1 Tariff Control Formula

Box 3.1: Formula 1 – Tariff Control Formula

The following formula applies separately to each of Tariff R, C and D:

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

where:

ΔCPI_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 year *t-1*

divided by

The ABS CPI All Groups, Weighted Average of Eight Capital Cities for the December quarter in 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 year for which tariffs are being set;

X_t is the X factor for each regulatory year of the 2023/24-2027/28 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 year during the Access Arrangement Period in accordance with that approved in the AER's final decision;

PT_t is the cost pass through factor for year t calculated as outlined in Box 2;

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 Regulatory Year *t*;

p_{t-1}^{ij} is the prevailing component j of Reference Tariff *i* in Regulatory Year *t–1*; and

q_{t-2}^{ij} is the verified annual quantity of component of Reference Tariff *i* sold in Regulatory Year *t–2* (expressed in the units in which that component is expressed (e.g., GJ))

4.2 Pass Through Factor Formula

The proposed pass through factor formula is the same as applies in the current AA period (see Box 3.2).

The pass through factor formula forms part of Annexure D of the Reference Tariff Policy of the AA Document.

Box 3.2: Pass through Factor Formula

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

where:

t is the year for which tariffs are being set;

PT'_{t-1} is:

a) zero when financial year *t–1* refers to year 2023/24;

b) the value of PT'_t determined in the year *t-1* for all other years in the Access Arrangement Period.

and

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

AP_t is:

a) any determined pass through amount that the AER approves in whole or part in 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 MGN in the immediately prior Access Arrangement Period) occurring in the immediately prior Access Arrangement Period that MGN proposed to pass through in whole or in part in 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:

ΔCPI_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 year *t-1*

divided by

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

X_t	is the X factor for each regulatory year of the 2023/24 - 2027/28 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;
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 annual quantity of component *j* of reference tariff *i* sold in year *t–2* (expressed in the units in which that component is expressed (e.g. GJ)).

4.3 Rebalancing Control Mechanism

The proposed rebalancing control formula is also consistent with that used in the current AA period. 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 D of the Reference Tariff Policy of the AA Document.

Box 3.3: Rebalancing Control Formula

The following formula applies separately to each Tariff Class:

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

where:

ΔCPI_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 year *t-1*

divided by

The ABS CPI All Groups, Weighted Average of Eight Capital Cities for the December quarter in 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 year for which tariffs are being set;

X_t is the X factor for each regulatory year of the 2023/24-2027/28 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;

PT_t is the cost pass through factor for year *t* calculated as outlined in Box 2;

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*;

q_{t-2}^{ij} is the audited annual 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 intent of the rebalancing control formula is to provide price certainty to customers. The formula therefore places a constraint on the movement in individual reference tariffs, where each reference tariff can increase by 2% over and above the increase permitted by the right hand side of the tariff control formula. The rebalancing control formula forms part of Annexure D of the Reference Tariff Policy of the AA Document.

4.4 Annual Update of Return on Debt Formula

The proposed annual update of return on debt formula implements the annual update to the return on debt building block required as a result of the adoption of a trailing average approach to determining the cost of debt. The proposed formula is the same as that applying in the current AA period. The annual update of return on debt formula forms part of Annexure D of the Reference Tariff Policy of the AA Document. We note that the AER's 2022 Rate of Return instrument has yet to be published and we will update in our Revised Proposal.

Box 3.4: 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 2023/24, of the Access Arrangement Period is to be calculated as follows:

For regulatory year 2023/24: $kd_{2023/24} = (0.45 \times R_{2018}) + (0.1 \times R_{2019}) + (0.1 \times R_{2020}) + (0.1 \times R_{2021}) + (0.1 \times R_{2022}) + (0.05 \times R_{HY2023}) + (0.1 \times R_{2023/24})$

For regulatory year 2024/25: $kd_{2023/24} = (0.35 \times R_{2018}) + (0.1 \times R_{2019}) + (0.1 \times R_{2020}) + (0.1 \times R_{2021}) + (0.1 \times R_{2022}) + (0.05 \times R_{HY2023}) + (0.1 \times R_{2023/24}) + (0.1 \times R_{2024/25})$

For regulatory year 2025/26: $kd_{2023/24} = (0.25 \times R_{2018}) + (0.1 \times R_{2019}) + (0.1 \times R_{2020}) + (0.1 \times R_{2021}) + (0.1 \times R_{2022}) + (0.05 \times R_{HY2023}) + (0.1 \times R_{2023/24}) + (0.1 \times R_{2024/25}) + (0.1 \times R_{2025/26})$

For regulatory year 2026/27: $kd_{2023/24} = (0.15 \times R_{2018}) + (0.1 \times R_{2019}) + (0.1 \times R_{2020}) + (0.1 \times R_{2021}) + (0.1 \times R_{2022}) + (0.05 \times R_{HY2023}) + (0.1 \times R_{2023/24}) + (0.1 \times R_{2024/25}) + (0.1 \times R_{2025/26}) + (0.1 \times R_{2026/27})$

For regulatory year 2027/28: $kd_{2023/24} = (0.05 \times R_{2018}) + (0.1 \times R_{2019}) + (0.1 \times R_{2020}) + (0.1 \times R_{2021}) + (0.1 \times R_{2022}) + (0.05 \times R_{HY2023}) + (0.1 \times R_{2023/24}) + (0.1 \times R_{2024/25}) + (0.1 \times R_{2025/26}) + (0.1 \times R_{2026/27}) + (0.1 \times R_{2027/28})$

where:

kd_t is the annual return on debt for regulatory year *t* of this Access Arrangement Period; and

R_t is the annual return on debt observation for each regulatory year *t* of this Access Arrangement Period (other than regulatory year 2018) calculated in accordance with steps 1 to 17 below. For regulatory year 2018, R_{2018}= 4.65 per cent.

Regulatory year $_t$ is defined as a consecutive 12 month period for which the AER has made a discrete tariff determination

Calculation of the annual return on debt observation

The return on debt observation for each financial year will be calculated by automatic application of the following formula. This requires three stages:

a) calculation of the adjusted RBA estimate;
b) calculation of the adjusted BVAL estimate;
c) calculation of the final estimate—where the AER combines its implementations of the RBA estimate and the BVAL estimate;

These formula steps relate to the approach specified in the AER's Final Decision. In the event that data availability changes during the Access Arrangement Period, the formulas below will change to reflect the contingencies set out in the AER's Final Decision.

Calculation of the adjusted RBA estimate

To calculate the adjusted RBA estimate:

1) Download RBA table F3—'Aggregate measures of Australian corporate bond yields' from the RBA website.

2) From this file, download the 7 and 10 year 'Non-financial corporate BBB-rated bonds—Yield' entries for dates:
   a) from the most recent published RBA date prior to the commencement of the nominated averaging period for debt
   b) to the first published RBA date following the conclusion of the nominated averaging period for debt
   c) all published dates between a. and b.

3) Download, from RBA table F16—'Indicative Mid Rates of Australian Government Securities', daily yields on CGSs for dates within the Service Provider's averaging period.

4) Linearly interpolate between the two nearest bonds straddling 7 years remaining term to maturity, and the two nearest CGS bonds straddling 10 years remaining term to maturity. This should be done using the following formula:

$$\text{yield}_{\text{interpolated}} = \text{yield}_{\text{lower straddle bond}} + (\text{yield}_{\text{upper straddle bond}} - \text{yield}_{\text{lower straddle bond}}) * (\text{date}_{\text{10 years from interpolation date}} - \text{maturity date}_{\text{lower straddle bond}}) / (\text{maturity date}_{\text{upper straddle bond}} - \text{maturity date}_{\text{lower straddle bond}}).$$

5) Linearly extrapolate the published RBA 10 year yield (from step 2) from its published effective term to an effective term of 10 years using the formula below:

$$\text{yield}_{10} = \text{yield}_{10\text{ year published}} + [(\text{spread-to-swap}_{10\text{ year published}} - \text{spread-to-swap}_{7\text{ year published}})/(\text{effective term}_{10\text{ year published}} - \text{effective term}_{7\text{ year published}})] * (10 - \text{effective term}_{10\text{ year published}}).$$

6) Linearly extrapolate the published RBA 7 year yield (from step 2) from its published effective term to an effective term of 7 years using the formula below:

$$\text{yield}_{7} = \text{yield}_{7\text{ year published}} + [(\text{spread-to-swap}_{10\text{ year published}} - \text{spread-to-swap}_{7\text{ year published}})/(\text{effective term}_{10\text{ year published}} - \text{effective term}_{7\text{ year published}})] * (7 - \text{effective term}_{7\text{ year published}}).$$

7) Subtract from the extrapolated 10 year RBA yield on each publication date the interpolated CGS yield on that date. For the 10 year term, use the RBA series as adjusted in step 5. These are the adjusted RBA 10 year spreads.

8) Obtain daily RBA spread estimates by linear interpolation of the adjusted RBA spreads (from steps 5 and 6) for both 7 and 10 year terms between the published dates identified in step 2. Use the adjusted RBA spread estimates as calculated in step 6. This should be done using the following formula:

$$\text{spread}_{\text{interpolated}} = \text{spread}_{\text{first straddling publication date}} + (\text{date}_{\text{interpolation}} - \text{date}_{\text{first straddling publication date}}) * (\text{spread}_{\text{second straddling publication date}} - \text{spread}_{\text{first straddling publication date}}) / (\text{date}_{\text{second straddling publication date}} - \text{date}_{\text{first straddling publication date}})$$

Note: If the annual return on debt estimate must be finalised before a final published RBA month-end estimate is available, hold the last observed RBA spread constant to the end of the averaging period.

9) Add to these daily spreads (from step 8), daily interpolated estimates of the CGS (from step 4) for all business days in the service providers averaging period. Specifically:
   a) add the 7 year interpolated CGS estimates to the 7 year interpolated RBA spreads. These are the interpolated RBA daily 7-year yield estimates.
   b) add the 10 year interpolated CGS estimate to the 10 year interpolated RBA spread. These are the interpolated RBA daily 10-year yield estimates.

10) Convert the interpolated daily yield estimates (from step 9) to effective annual rates, using the formula:

$$\text{effective annual rate} = ((1 + \text{yield} / 200)2 - 1)*100$$

11) Average the yield estimate for the 10 year RBA yield estimate over all business days in the service provider's averaging period. This is our adjusted RBA estimate.

Calculation of the adjusted BVAL estimate

To calculate the adjusted BVAL estimate:

12) For dates after 14 April 2015, download the 10 year Corporate BBB rated Australian BVAL curve (BVCSAB10). For dates before 14 April 2015, download from Bloomberg the 7 year Corporate BBB rated Australian BVAL curve (BVCSAB07 index) for all business days in the service provider's averaging period.

13) For dates before 14 April 2015, add to the 7 year yield the difference between the 7 and 10 year daily RBA adjusted yields (as calculated in step 8) of the RBA process). This is the extrapolated daily estimate of the BVAL 10 year yield.

14) For all dates, convert the 10 year yields into effective annual rates, using the formula:

effective annual rate = ((1 + yield / 200)2- 1)*100

15) Average the extrapolated daily estimates of the BVAL 10 year yield over all business days in the service provider's averaging period. This is our adjusted BVAL estimate.

Final estimate

16) Take the simple average of the adjusted RBA estimate (from step 11 in the RBA data section) and the adjusted BVAL estimate (from step 15 in the BVAL data section). This is the annual estimate of the return on debt.

17) A business day means a day other than a Saturday, Sunday or a day recognised as a national public holiday or a public holiday in Victorian or New South Wales.

Annual return on debt observation where relevant data not available

For any regulatory year of this Access Arrangement Period, with the exception of the regulatory year 2023/24, for which an annual return on debt observation cannot be calculated in accordance the formula above, due to changes in data availability, adjust the approach in accordance with the contingencies set out in the AER's final decision for MGN.

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 regulatory year of this Access Arrangement Period.

Notification and AER determination of the annual return on debt observation

In the 'PTRM input' sheet of MGN's final decision PTRM, update the relevant cell to reflect the updated return on debt estimate (kd_t). This is:

a) $Kd_{2023/24}$: Cell G388
b) $Kd_{2024/25}$: Cell H388
c) $Kd_{2025/26}$: Cell I388
d) $Kd_{2026/27}$: Cell J388
e) $Kd_{2027/28}$: Cell K388

On the 'X factors' sheet of the final decision PTRM, update the relevant X factor as follows:

a) $Kd_{2023/24}$: 'Set X2 (price cap)'
b) $Kd_{2024/25}$: 'Set X3 (price cap)'
c) $Kd_{2025/26}$: 'Set X4 (price cap)'
d) $Kd_{2026/27}$: 'Set X5 (price cap)'

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

4.5 Ancillary Reference Tariff Variation Mechanism

Subject to the approval of the AER, MGN will vary the Reference Tariffs for Ancillary Reference Services on the basis of the tariff control formula set out in Box 3.1.

The ancillary reference tariff control formula for the Regulatory Years 2023/24 to 2027/28 is shown in Box 3.5.

Box 3.5: Ancillary Reference Tariff Variation Mechanism

$$ART_t = ART_{t-1} \times (1 + CPI_t)$$

where:

- ART_t is the ancillary reference tariff that applies in Regulatory Year *t*;
- ART_{t-1} is the ancillary reference tariff that applies in Regulatory Year *t-1*;
- CPI_t is the annual percentage change in the CPI from the December quarter in year *t-2* to the December quarter in year *t-1*, calculated using the following method:

  The CPI for the December quarter in financial year *t-1*

  Divided by

  The CPI for the December quarter in financial year *t-2*

  minus one.

4.6 Cost Pass Through Events

In accordance with Rule 97(1)(c), MGN has proposed certain Cost-Pass-Through Events for the next AA period. In defining Cost Pass Through Events, MGN has given consideration to events:

- for which it is unreasonable or unable to provide cost forecasts for the purposes of determining the total revenue requirement (whether it be due to the uncertainty of timing/occurrence or magnitude of the event); and
- that are not included in the capital or operating cost forecasts, or for which MGN might already be compensated for through the rate of return.

The proposed Cost Pass Through Events are generally consistent with those that applied in the current AA period and are defined in Section 4.5 of the AA Document and Chapter 14 of the Final Plan.

The formula by which tariffs are adjusted to account for Cost-Pass-Through Events is detailed in Box 3.2 Adjustments Factor Formula.

5 Summary

MGN recovers its regulated revenue by charging Reference Tariffs to customers for Pipeline Services. As described in this Attachment, the proposed tariffs are modelled to be revenue neutral and fall between the stand alone and avoidable costs of providing reference services to these zones. The tariff structures are efficient, contain no cross-subsidy and have taken into account factors such as transaction costs, LRMC and the ability for consumers to respond to price changes.