

VECTOR GAS DISTRIBUTION SERVICES PRICING METHODOLOGY

From 1 October 2019

Pursuant to:

The Gas Distribution Information Disclosure Determination 2012
(Consolidated April 2018)

EXECUTIVE SUMMARY

We recover the cost of owning and operating our gas distribution network (Network) through a combination of standard (published) and non-standard prices for gas distribution services, and capital contributions for new connections. We are regulated by the Commerce Commission (Commission) and are required to publish our pricing methodology for gas distribution services (Pricing Methodology).

This document sets out our Pricing Methodology to meet the requirements of the Information Disclosure Determination 2012 (ID)¹. It explains the consumer groups, the price categories and components within each consumer group, how prices are set and the Cost of Service Model (COSM) allocation of target revenue to consumer groups. The ID requires price change commentary relating to the pricing strategy², but Vector does not currently have a pricing strategy as defined in the ID.



PY20 prices³ = PY19 prices adjusted for inflation (Consumer Price Index, CPI) + change in pass-through and recoverable costs + headroom⁴



When setting prices, historical price structures, minimising rate shock to consumers, and minimising recovery risk are taken into account



Given network costs are largely fixed we typically apply any price increases to fixed components and price decreases to variable components



The prices determined are checked to ensure they will not earn revenue "out of step" with target revenue for each consumer group



Price setting is an iterative process, where the prices are only finalised once the price path compliance is managed, bill impacts are fair and tolerable and prices deliver revenue from each consumer group consistent with their target revenue allocation

¹ Gas Distribution Information Disclosure Determination 2012 (consolidated April 2018)

² A pricing strategy is a decision made by the Directors of a gas distribution business on that business' plans or strategy to amend or develop prices in the future, and recorded in writing

³ Pricing year 2020 (PY20) is 1 October 2019 to 30 September 2020

⁴ Headroom is the difference between Allowable Notional Revenue (ANR) and Notional Revenue (NR) from the previous year. It is 'notional' as it is based on quantities that are "two years" lagged, rather than the quantities for the year in question

Figure 1: Vector's gas distribution network








1 – CONSUMER GROUPS & PRICE CATEGORIES

Consumer groups are determined on how they use the network and the nature of the network service they receive. These consumer groups are determined at a relatively high level, due to the physical nature of gas distribution networks and the information that is available on consumer demand characteristics, as outlined below:

- There is a high degree of network meshing and interconnection of consumers;
- End consumers are not generally geographically segmented in their use of different network assets, for example, there are very few purely “industrial zones” or “residential zones”; and
- There is a mix of consumers, including a large number of consumers with relatively low individual consumption, and vice versa.

We have maintained the same four standard consumer groups as in PY19, based on a measure of gas capacity and the maximum flow rate of their connection, measured in scm/h (standard cubic metres per hour) as shown in Table 1.

Table 1: Consumer groups and price categories

Consumer group		Max. flow rate (scm/h)	Price category code	Price category description
Mass market		< 10	<ul style="list-style-type: none"> ➤ GA0R ➤ GA01 	<ul style="list-style-type: none"> ➤ Residential ➤ General
Small commercial		10 to 40	<ul style="list-style-type: none"> ➤ GA02 	<ul style="list-style-type: none"> ➤ Small commercial
Large commercial		40 to 200	<ul style="list-style-type: none"> ➤ GA03 	<ul style="list-style-type: none"> ➤ Large commercial
Industrial		> 200	<ul style="list-style-type: none"> ➤ GA04 ➤ GA05 	<ul style="list-style-type: none"> ➤ Industrial ➤ Large industrial
Non-standard		Various	<ul style="list-style-type: none"> ➤ 1G40 ➤ 1G60 	<ul style="list-style-type: none"> ➤ Non-standard

Consumers on non-standard contracts which have met certain eligibility criteria, as outlined in Section 4, are included in a separate consumer group.

Consumer groups are mutually exclusive so a consumer can only be in one group.

The mass market consumer group is split into two price categories: residential and general. The small and large commercial consumer groups map directly to price categories.

The industrial consumer group is split into two price categories: industrial and large industrial with the large industrial price category suitable for consumers with annual consumption greater than approximately 17,600 MWh per annum.⁵

⁵ MWh is a megawatt-hour, a unit of energy being the product of power in megawatts and time in hours

2 – PRICE SETTING

Our prices are subject to the Gas Distribution Services Default Price-Quality Path Determination 2017 (DPP)⁴ which sets our Maximum Allowable Revenue (MAR) that can be earned from prices for the 12 months from 1 October 2017 to 30 September 2018.

In the following four years of the regulatory period, prices are essentially only allowed to increase by: inflation, any under/over recovery from the previous year (headroom) and the recovery of costs that are largely outside of our control, known as pass-through and recoverable costs. These include council rates and statutory levies.



PY20 prices = PY19 prices adjusted for inflation (CPI) + change in pass-through and recoverable costs + headroom

From 1 October 2019 (the third year of the regulatory period), Vector's gas distribution prices are increasing by a weighted average 1.9% (2.0% for standard prices) with a breakdown shown in Figure 2.

The majority of consumers have simple meters that record total use over monthly or two-monthly meter-reading cycles and do not record time of use or maximum demand. This limits the price components to a fixed daily price (\$/day) and a variable volume price (\$/kWh), shown in Table 2.

We are conscious of the effect of price changes for consumers. Our starting point for calculating prices is the corresponding price from the previous year.



When setting prices, historical price structures, minimising rate shock to consumers, and minimising recovery risk are taken into account

Figure 2: Change to Price Path PY20

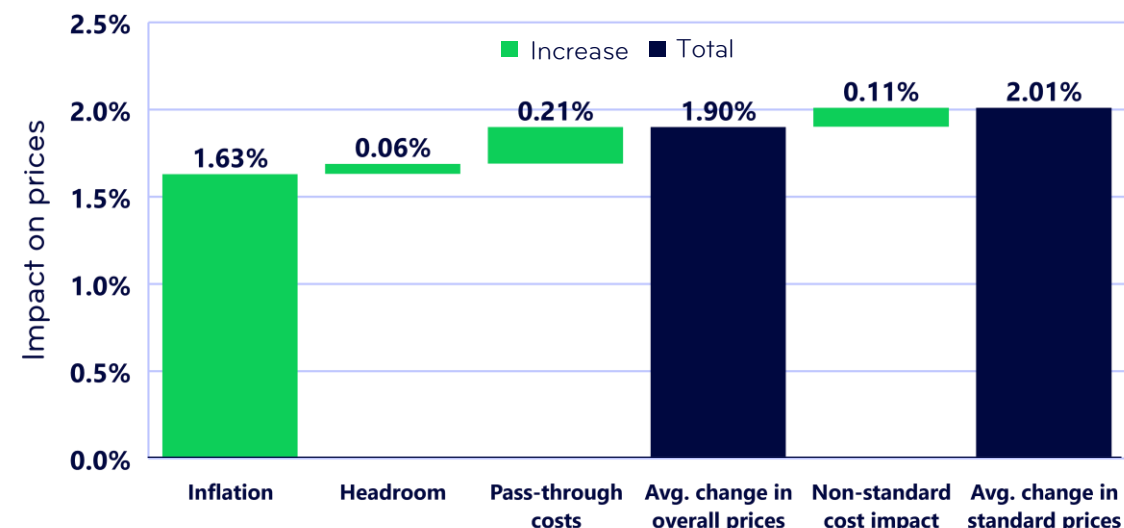


Table 2: Price components

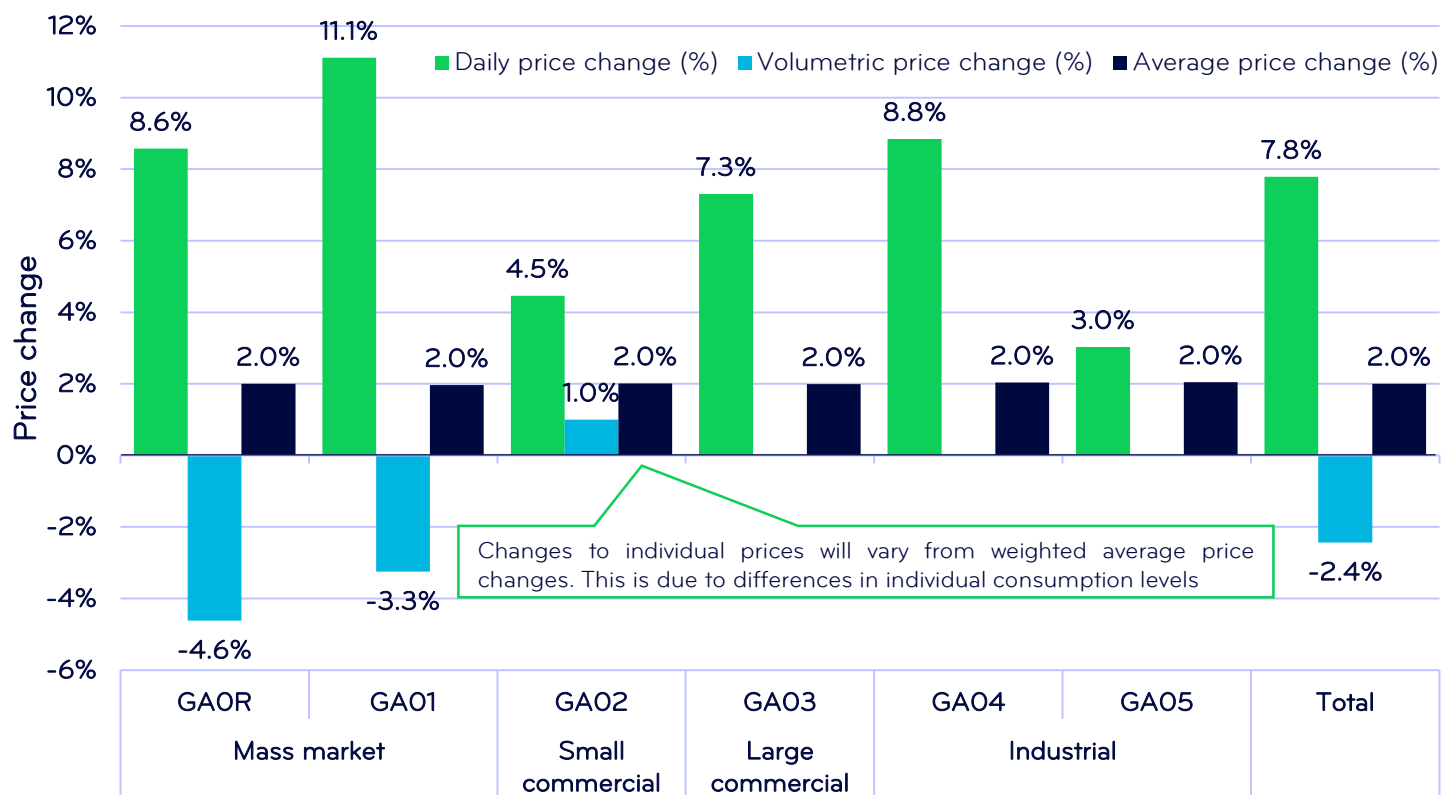
Price component	Code	Units	Description	
Fixed	Daily	FIXD	\$/day	Applied to the number of days each consumer's point of connection is connected to the gas distribution network.
Variable	Volume	24UC	\$/kWh	Applied to all gas distributed to each consumer.

3 – STANDARD PRICING

The structure of our prices is constrained by the limitations of consumer consumption information and the price sensitivity of consumers. The level of the fixed daily price component for each price category increases with consumer capacity, i.e. the larger the consumer’s capacity requirement, the higher the daily price.

There are no structural changes to prices for the period 1 October 2019 to 30 September 2020. We have applied the price changes across all standard price categories to give them an equal nominal weighted average change of 2.0% as shown in Figure 3.⁶

Figure 3: Weighted average price change by standard price category



Given network costs are largely fixed we typically apply any price increases to fixed components and price decreases to variable components

This is proposed to be achieved by predominantly applying the increase to daily prices, limiting the change to less than the greater of 10% or \$30 per annum, with the volume prices remaining unchanged unless required to meet the target of a 2.0% estimated weighted average change.

The decision to primarily increase the daily prices reflects the fact that the majority of our costs are fixed and sunk, so implicitly increasing the fixed portion of revenues aligns the recovery of revenues with the way costs are incurred.

We did not directly seek the views of consumers when setting prices. Rather, we consulted with retailers on behalf of consumers on the proposed price changes. We have not received any feedback that was unresponsive of the proposed price changes.

⁶ For the actual prices see our Annual Price Reviews, available at <https://www.vector.co.nz/about-us/regulatory/disclosures-gas/pricing>

4 – NON-STANDARD PRICING

Table 3: Non-standard pricing approach

Approach	Description
Criteria	<p>Non-standard contracts allow tailored prices and non-standard commercial arrangements to be applied to individual consumers. Consumers may be assessed for non-standard terms or pricing if they meet one of the two following criteria:</p> <ul style="list-style-type: none"> ➤ The annual quantity is greater than 10TJ⁷ and the consumer's point of connection to our gas distribution network is within 2km of a gas network not owned or operated by us; or ➤ It can be demonstrated that the alternative sources of energy (including but not limited to wood, coal or electricity) that could meet the consumer's requirements are technically, operationally and commercially viable and have a reasonable prospect of being able to be successfully implemented. <p>We assess whether to apply non-standard pricing and the corresponding contractual arrangements to consumers on a case-by-case basis. Meeting one or more of the assessment criteria does not mean that a non-standard arrangement will apply, merely that the consumer may be considered by us to determine whether standard pricing and standard contractual terms are suitable, given the consumer's individual circumstances.</p> <p>At the conclusion of a non-standard pricing agreement, the consumer will be required to negotiate in good faith at our request before seeking to access standard prices.</p>
New investments	<p>For new investments that qualify for non-standard pricing, we use actual costs and/or allocated costs derived from an allocation model to determine prices. This allocation model is consistent with the Cost of Service Model (COSM) used in assessing standard pricing.</p> <p>For new non-standard investments, we also apply our capital contributions policy. Our policy for determining capital contributions on our gas distribution network is available at http://vector.co.nz/disclosures/gas/capital-contributions.</p>
Obligations & responsibilities	<p>Our obligations and responsibilities to consumers on non-standard contracts are the same as our obligations to consumers on standard contracts in the event that the supply of gas distribution services to the consumer is interrupted and has no impact on determining prices for those consumers on non-standard contracts.</p>

⁷ TJ is a terajoule, a unit of energy, with 1TJ equal to approximately 278MWh

5 – TARGET REVENUE AND ITS CATEGORISATION



Our COSM is used to allocate target revenue to consumer groups using various cost drivers. The model structure is outlined in Figure 4.

Target revenue is the total revenue we expect to recover from our prices (complying with the regulated price path) and our forecasted quantities. The total target revenue for PY20 is \$49.1m (\$48.1m for PY19).

The total target revenue is broken down into the key components required to cover the costs and return on investment associated with the provision of gas distribution services as shown in Figure 5. These key components are categorised by cost driver i.e. either 'asset' or 'non-asset' (Figure 6). These categorisations determine the way that the target revenue is allocated to consumer groups.

The key components categorised as 'asset costs' are those associated with expenditure and return on the gas distribution network assets.

'Non-asset costs' can be broadly described as overhead costs and pass-through and recoverable costs.

Figure 4: COSM structure

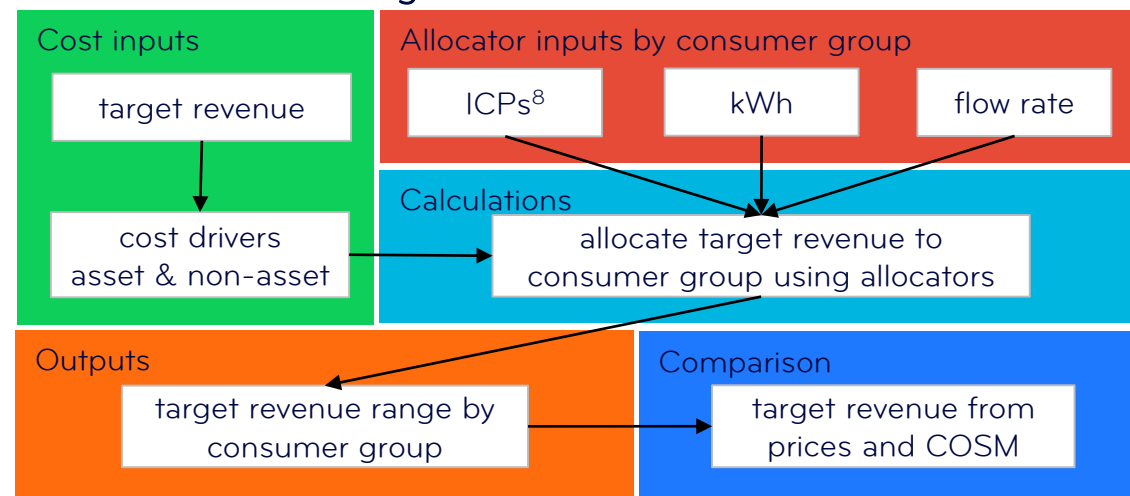


Figure 5: Target revenue by key components

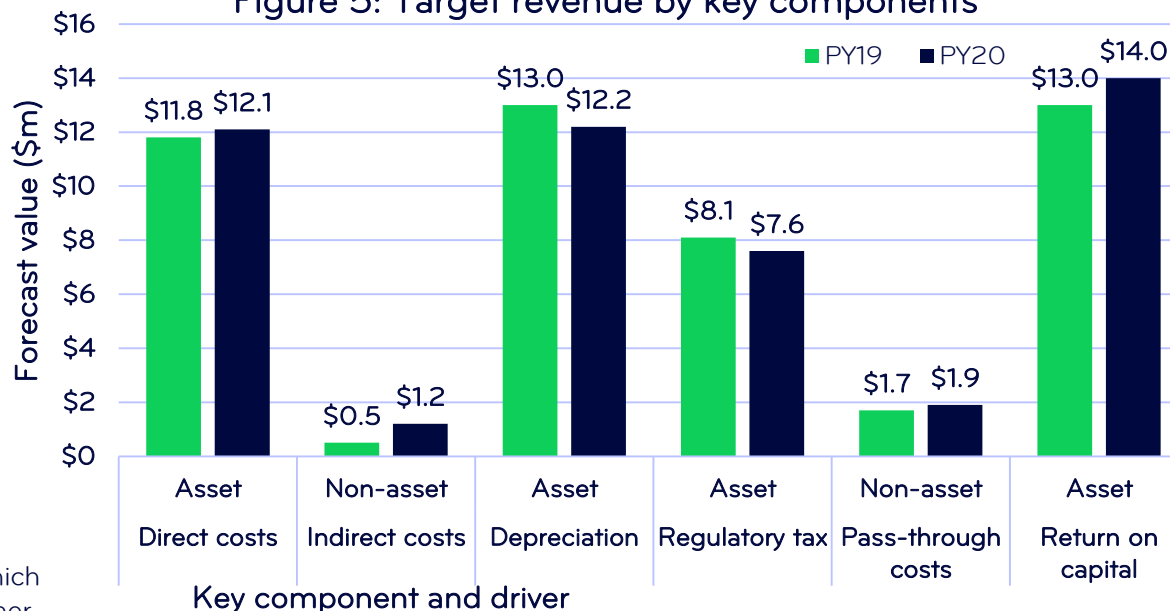
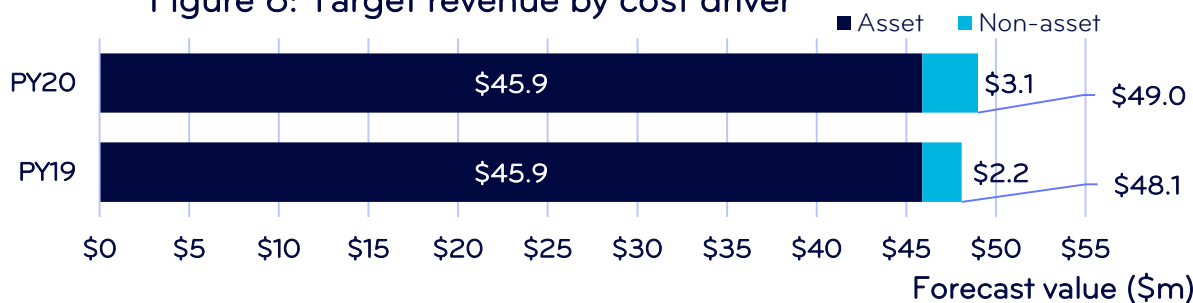


Figure 6: Target revenue by cost driver



⁸ An ICP is an installation control point being a physical point of connection on a local network which a distributor nominates as the point at which a retailer will be deemed to supply gas to a consumer

6 – TARGET REVENUE ALLOCATION

A key feature of a gas distribution network is interconnected assets. Many consumers on the network share assets and it is difficult to identify precisely who benefits from which assets. While this means that the allocation of target revenue between consumers or groups of consumers can be made in many ways, it also means that the cost of providing the network is shared widely and therefore the cost of network services is generally low for each consumer.

'Asset costs' have been allocated based on the proportion of flow rate x number of consumers (scm/h x ICPs) for each consumer group as shown in Table 4. This allocates based on the weighted average of flow rate per consumer that are in each consumer group, effectively capturing

Table 4: Allocators used in the COSM

Cost driver	Allocator
Asset	Flow rate x number of consumers (scm/h x ICP)
Non-asset	Number of consumers (ICPs) or annual consumption (MWh)

Table 5: Value of allocators and target revenue allocation range

Consumer group	No. of consumers ⁹		Annual consumption ⁹		Flow rate ¹⁰	Flow rate x no. of consumers		Target revenue (\$m)		
	Unit	ICPs	MWh			scm/h	scm/h x ICPs	Lower	Upper	
Mass market		101,828	96%	733,759	19%	5	509,138	61%	28.7	30.5
Small commercial		2,764	3%	265,937	7%	25	69,103	8%	3.8	4.0
Large commercial		934	1%	556,663	14%	120	112,040	13%	6.1	6.6
Industrial		162	0%	1,112,172	29%	690	112,045	13%	6.1	7.1
Non-standard		35	0%	1,211,003	31%	1,000	35,269	4%	2.7	2.7
Total		105,723		3,879,534			837,595			

⁹ Weighted average of last five year's values from the billed quantities in Schedule 8 of Vector's annual Gas Information Disclosure (available at <https://www.vector.co.nz/about-us/regulatory/disclosures-gas/gas-financial-and-network-information>), with each year being weighted twice the previous year

¹⁰ For mass market and commercial consumer groups, the midpoint of the maximum flow rates from Table 1 is used. For industrial and non-standard consumer groups, the average maximum hourly quantity specified in current and previous Network Charge Agreements is used

each consumer group's utilisation of network assets. The scm/h x ICPs is an appropriate allocator for assets and direct networks costs as the required pressure of a consumer will affect capacity of the network assets.

'Non-asset costs' have no direct allocator so a band of cost allocations is chosen using annual consumption and the number of consumers as the allocators.

The result of using the different allocators (shown in Table 5) creates a target revenue range by consumer group as the use of different allocators gives rise to different financial allocation results. The bands represent the lower and upper bounds of the different allocation approaches, as shown in two right hand columns of Table 5.

The pricing for non-standard consumers is calculated separately from the other consumer groups, the COSM produces forecasted target revenue of \$2.7m (5.5%) to be recovered from the 19 non-standard consumers.

7 – PRICE COMPARISON

Figure 7 shows target revenue calculated from PY19 and PY20 prices by consumer group compared with the COSM allocation. The result is that PY20 prices produce forecast revenues that are in an acceptable range when compared to target revenue allocations.



The prices determined are checked to ensure they will not earn revenue "out of step" with target revenue for each consumer group

Figure 8 shows the price categories target revenue by price component. Residential, large industrial and non-standard are expected to have the majority of the revenue generated from the fixed daily component.

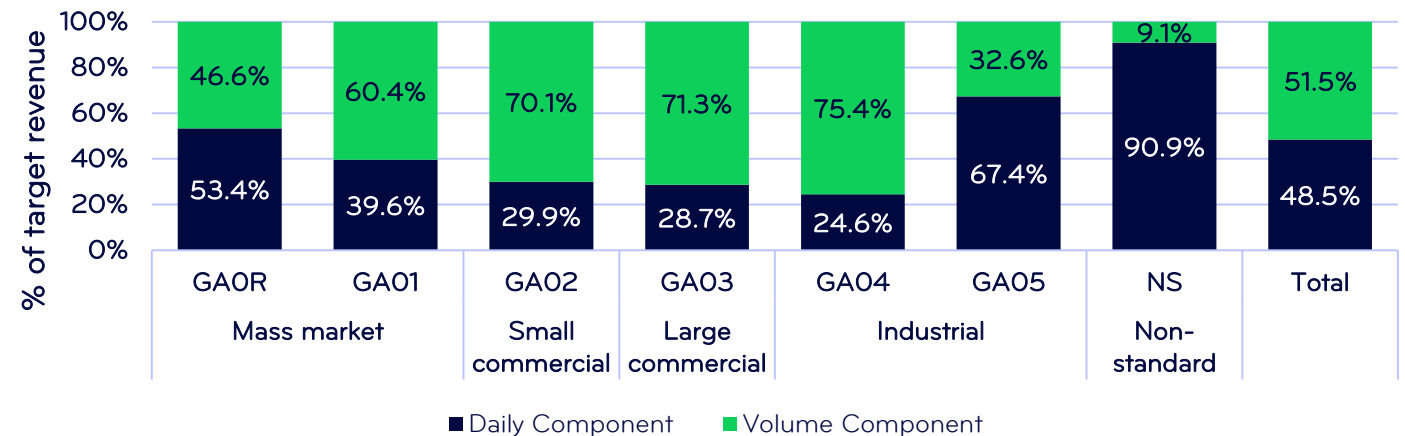


Price setting is an iterative process, where the prices are only finalised once the price path compliance is managed, bill impacts are fair and tolerable and prices deliver revenue from each consumer group consistent with their target revenue allocation

Figure 7: Target PY19 & PY20 revenue from prices compared with COSM allocations



Figure 8: Target revenue by price component and category



APPENDIX – CONSISTENCY WITH PRICING PRINCIPLES

The Pricing Principles are specified in clause 2.5.2 of the Input Methodologies Determination¹¹

Table 6: Pricing principles

Principle #1: Economic costs of service provision

Prices are to signal the economic costs of service provision, by -

a) being subsidy free, that is, equal to or greater than incremental costs and less than or equal to standalone costs, except where subsidies arise from compliance with legislation and/or other regulation;

The incremental cost test can be applied both for individual consumers and for groups of consumers. The incremental cost for an individual consumer is the cost of connecting that consumer to the network, and therefore excludes the cost of shared assets. The incremental cost for a group of consumers is the cost of connecting that group of consumers to the network, and includes the cost of assets shared by that group. Our capital contributions policy ensures that individual consumers generally pay the costs of connecting them to the network. Applying the incremental cost test at a group level is more stringent because it includes shared costs for the group. Revenues for the group must be higher than just the sum of the incremental cost for each individual consumer.

While we monitor the cost of alternative options for consumers, it can be difficult to apply these on a consumer-specific basis. In some instances, the economic value of the service, including where that is set by the cost of an alternative form of supply, may be notified to us by the consumer. In these situations, this pricing principle is delivered through the operation of pricing principle #3, detailed on the following page.

b) having regard, to the extent practicable, to the level of available service capacity; and

c) signalling, to the extent practicable, the effect of additional usage on future investment costs.

There are no constraints on available service capacity in the gas distribution network that impact on the economic cost of service provision. Indeed, given the level of available service capacity, it is appropriate that pricing is set in a manner that encourages greater utilisation of the gas distribution network.

¹¹ Gas Distribution Services Input Methodologies Determination 2012 (Consolidated April 2018)

APPENDIX – CONSISTENCY WITH PRICING PRINCIPLES



Principle #2: Recovery of any shortfall

Where prices based on 'efficient' incremental costs would under-recover allowed revenues, the shortfall is made up by prices being set in a manner that has regard to consumers' demand responsiveness, to the extent practicable.-

It is generally not practicable to set standard prices in a manner that has regard to a consumers' demand responsiveness. This would require segmenting consumers into groups based on price elasticity of demand, a near impossible task except perhaps on a case-by-case basis for large consumers where the transaction costs of developing non-standard arrangements are small in relation to the value of the network service.

Principle #3: Responsive to requirements of consumers

Provided that prices satisfy (1), prices are responsive to the requirements and circumstances of consumers in order to -

a) discourage uneconomic bypass;

Discouraging uneconomic bypass is an important commercial objective for Vector. Gas distribution services must compete with alternative fuel and energy sources such as electricity, LPG, wood fires, coal, and solar heating.

We consider alternative fuels that may be economically viable for each consumer group. Gas distribution prices are tested to ensure that, in general, they are both greater than the incremental cost and not so high as to provide the incentive for a consumer to switch to an alternative fuel.

We have historically sought to avoid uneconomic bypass using pricing zones based on distance from the transmission system gate stations. Competing networks need to connect to a transmission system gate station to supply downstream consumers so we previously priced consumers closer to the transmission network at a lower price to discourage bypass. The removal of pricing zones significantly simplified our gas distribution pricing, but may have increased the risk of a large consumer near the transmission network bypassing by way of an alternative network.

APPENDIX – CONSISTENCY WITH PRICING PRINCIPLES



Principle #3: Responsive to requirements of consumers (continued)

Provided that prices satisfy #1, prices are responsive to the requirements and circumstances of consumers in order to -
b) allow negotiation to better reflect the economic value of services and enable consumers to make price/quality trade-offs or non-standard arrangements for services.

A standard price schedule will never be able to eliminate all opportunities for uneconomic bypass, and we believe that it is more appropriate to deal with these issues through non-standard contracts as each situation can be dealt with on a case-by-case basis where all consumer-specific factors can be considered.

We believe that the best way to allow consumers to negotiate differing levels of economic value from a service or to mitigate against uneconomic bypass is through non-standard contracts. Large consumers can negotiate with us for different terms and conditions if it is commercially viable and possible for us to provide the service.

Contracts have been negotiated on non-standard pricing structures to allow consumers to manage their risk, including adjustment in prices to allow for atypical demand loads (e.g. seasonal use patterns) or a preference for pricing that is largely, if not wholly, fixed. We are also willing to offer different terms for contracts of varying duration.

Principle #4: Pricing process

Development of prices is transparent, promotes price stability and certainty for consumers, and changes to prices have regard to the effect on consumers

We believe that a simple pricing structure enhances transparency. Costs are clearly identified and allocated to consumer groups on a simple and transparent basis.

A simple pricing structure reduces the likelihood that changes in consumer behaviour will result in significant changes to cost allocations between consumer groups. This means that prices by consumer group, based on the maximum flow rate of connection, will be more stable over time. A simple pricing structure also makes it easier for consumers to understand and estimate their likely costs.

We are particularly conscious of the effect of our pricing on consumers and seek to implement a pricing framework that provides appropriate incentives for consumers to continue to use our distribution services.

In July 2019, we consulted with gas retailers on our proposed price changes. Our proposal did not incorporate any structural changes. We did not receive any feedback that was unsupportive of the proposed price changes.

APPENDIX – DIRECTORS' CERTIFICATION

**Schedule 18: Certification for Disclosures at the
Beginning of a Pricing Year**

Clause 2.9.2

We, Bob Thomson and

Jonathan Mason, being directors of Vector Limited
certify that, having made all reasonable enquiry, to the best of our knowledge:

- (a) the following attached information of Vector Limited prepared for the purposes of clause 2.4.1 of the Gas Distribution Information Disclosure Determination 2012 in all material respects complies with that determination.
- (b) the prospective financial or non-financial information included in the attached information has been forecast on a basis consistent with regulatory requirements or recognised industry standards.



Director



Director

22/08/2019
Date