



10

GAS DISTRIBUTION



Natural gas distribution networks transport gas from gas transmission pipelines and reticulate it into residential houses, offices, hospitals and businesses. Their main customers are energy retailers, which aggregate loads for sale to end users. For small gas users, distribution charges for metering and transport often represent the most significant component—up to 60 per cent—of retail gas prices.

10 GAS DISTRIBUTION

This chapter considers:

- > Australia's gas distribution sector
- > the structure of the sector, including industry participants and ownership changes over time
- > the economic regulation of distribution networks
- > new investment in distribution networks
- > financial indicators and service performance of the distribution sector.

10.1 Role of distribution networks

A distribution network typically consists of high, medium and low pressure pipelines. The high and medium pressure mains provide a 'backbone' that services areas of high demand and transports gas between population concentrations within a distribution area. The low pressure pipes lead off the high pressure mains to end customers.

Gate stations (city gates) link transmission pipelines with distribution networks. The stations measure the natural gas entering a distribution system for billing and gas balancing purposes. They also adjust the pressure of the gas before it enters the distribution network.

Distributors can further adjust gas pressure at regulating stations in the network to ensure that the delivered gas is at a suitable pressure for the operation of customer equipment and appliances.

Australian laws require odorant to be added to gas that enters a distribution system. This promotes safety by making leaks easier to detect. The odorant is usually added at the gate station.

10.2 Australia's distribution networks

The total length of Australia's gas distribution networks expanded from around 67 000 kilometres in 1997 to over 81 000 kilometres in 2007. The networks deliver

over 300 petajoules of gas a year and have a combined valuation of over \$7 billion. Investment to augment and expand the networks is forecast at around \$2 billion in the current regulatory cycle. Table 10.1 provides summary details of the major networks.

Figure 10.1 shows the location of gas distribution networks in Australia. In the past few years, new networks have been rolled out in north-western New South Wales (Central Ranges) and Tasmania following the construction of transmission pipelines into these regions. Natural gas is now reticulated to most Australian capital cities, major regional areas and towns.

10.3 Ownership of distribution networks

The major gas distribution networks in Australia are privately owned. South Australia, Victoria, Western Australia and Queensland privatised their state-owned networks in 1993, 1997, 2000 and 2006, respectively. The principal New South Wales network has always been in private hands.¹ Over time, structural reform and capital market drivers have led to specialist network businesses acquiring most assets in the sector. Figure 10.2 shows key ownership changes since 1994.

Two significant ownership changes in 2006 were the sale of AGL's New South Wales networks to Alinta and the privatisation of Queensland's Allgas network, which was sold to the APA Group. In 2007, the sale of Alinta led to Singapore Power International and Babcock & Brown Infrastructure acquiring gas distribution assets.

By 2008, ownership consolidation had reduced the number of principal players in the gas distribution sector to four:

- > Singapore Power International owns the principal New South Wales gas distribution network (Alinta AGN). It has a 51 per cent share in the Victorian network (SP AusNet) and a 50 per cent share of the Australian Capital Territory (ACT) network (ActewAGL). In August 2008, Singapore Power International rebranded its gas distribution entities as Jemena.
- > Envestra, a public company in which the APA Group and Cheung Kong Infrastructure each have a 17 per cent shareholding, owns networks in Victoria, South Australia and Queensland, as well as a small Northern Territory network.
- > Babcock & Brown Infrastructure owns the Tasmanian distribution network (Powerco) and is the majority owner of the Western Australian network.
- > The APA Group owns the Allgas network in Queensland, and has a 17 per cent stake in Envestra.

Other players include:

- > DUET Group, which is the majority owner of Victoria's Multinet network and a minority owner of the Western Australian network. DUET Group contracts out the operation of its networks.
- > Cheung Kong Infrastructure, which owns a 17 per cent interest in Envestra.

There are increasing ownership linkages between gas distribution and other energy networks. In particular, Singapore Power International, Babcock & Brown Infrastructure and the APA Group own and operate both gas transmission and distribution infrastructure. In addition, Singapore Power International, the APA Group, Cheung Kong Infrastructure and DUET Group all have ownership interests—in some cases, substantial interests—in the electricity network sector (see chapters 4, 5 and 9).

1 There are remnants of state-owned gas distribution networks in rural New South Wales and Queensland.

2 DUET Group comprises a number of trusts, the responsible entities for which are owned by Macquarie Bank and AMP Capital Holdings.

Table 10.1 Australian natural gas distribution networks

DISTRIBUTION NETWORK	LOCATION	LENGTH OF MAINS (KM)	ASSET BASE (\$ MILLION 2007)	INVESTMENT —CURRENT REGULATORY PERIOD (\$ MILLION 2007)	CURRENT REGULATORY PERIOD	OWNER
NEW SOUTH WALES AND ACT						
NSW Gas Networks (Alinta AGN)	Sydney, Newcastle/ Central Coast and Wollongong	23800	2088	518	1 July 2005–30 June 2010	Jemena (Singapore Power International (Australia))
Central Ranges System	Dubbo to Tamworth region	250	n/a	n/a	2006–2019	APA Group
Wagga Wagga distribution	Wagga Wagga and surrounding areas	622	47	8	1 July 2005–30 June 2010	Country Energy (NSW Govt)
ActewAGL Distribution (Canberra network)	ACT and Queanbeyan	3621	247	49	1 July 2004–30 June 2010	ACTEW Corporation (ACT Govt) 50%; Jemena (Singapore Power International (Australia)) 50%
VICTORIA						
Multinet	Melbourne's eastern and south-eastern suburbs	9513	888	251	1 Jan 2008–31 Dec 2012	DUET Group 79.9%; BBI 20.1%
Envestra (Stratus)	Melbourne, north-east and central Victoria, and Albury –Wodonga region	9350	859	394	1 Jan 2008–31 Dec 2012	Envestra (Cheung Kong Infrastructure 17%, APA Group 17%)
SP AusNet (Westar)	Western Victoria	9140	955	343	1 Jan 2008–31 Dec 2012	SP AusNet (listed company: Singapore Power International 51%)
QUEENSLAND						
Allgas	South of the Brisbane River	2515	307	155	1 July 2006–30 June 2011	APA Group
Envestra	Brisbane, Gladstone and Rockhampton	2261	235	100	1 July 2006–30 June 2011	Envestra (Cheung Kong Infrastructure 17%, APA Group 17%)
SOUTH AUSTRALIA						
South Australian distribution	Adelaide and surrounds	7377	851	204	1 July 2006–30 June 2011	Envestra (Cheung Kong Infrastructure 17%, APA Group 17%)
WESTERN AUSTRALIA						
Alinta Gas Networks	Mid-west and south-west regions	12157	708	157	1 Jan 2005–31 Dec 2009	BBI 74.1%, DUET Group 25.9%. Operated by WestNet Energy (owned by BBI)
TASMANIA						
Tasmanian Gas Network	Hobart, Launceston and other towns	683	100	n/a	Not covered	Powerco (BBI)
National totals		81289	7285	2179		

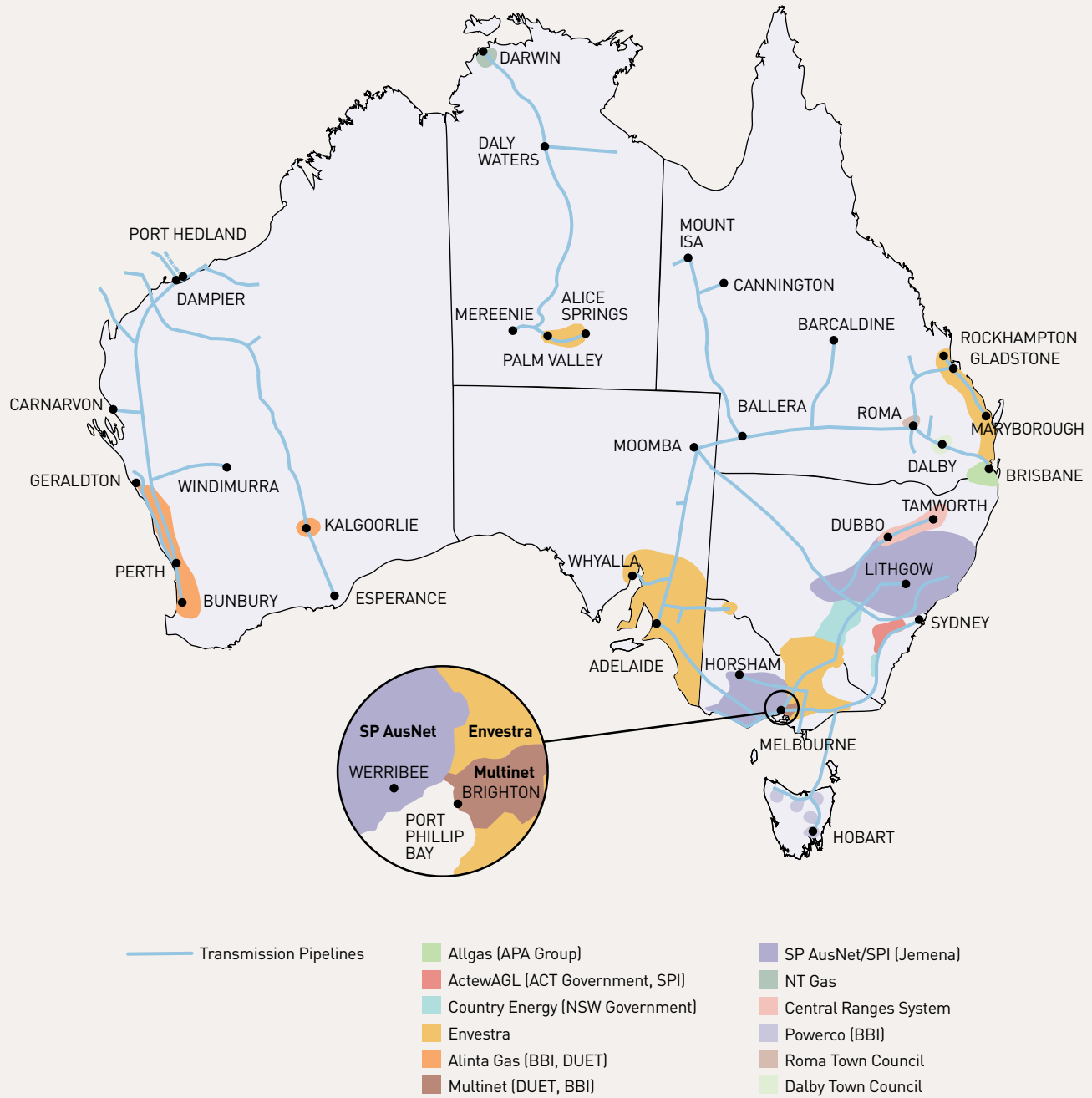
BBI, Babcock & Brown Infrastructure; n/a, not available.

Notes:

1. For Tasmania, the asset value is an estimated construction cost. For other networks, the asset value is the opening regulated asset base for the current regulatory period, adjusted to June 2007 dollars.
2. Investment data are forecasts for the current asset arrangement period, adjusted to June 2007 dollars.
3. Some corporate names have been abbreviated or shortened.

Sources: Access arrangements for covered pipelines; company websites.

Figure 10.1
Gas distribution networks in Australia



Notes:

1. Locations of the distribution systems are indicative only.
2. Some corporate names have been abbreviated or shortened.

Source: Australian Gas Association submission to the Productivity Commission, Review of the gas access regime, August 2003, submission 13, p. 102; supplemented with additional information.

10.4 Regulation of distribution networks

Gas distribution networks are capital intensive and incur declining costs as output increases. This gives rise to a natural monopoly industry structure. In Australia, the networks are regulated to manage the risk of monopoly pricing.

The National Gas Law and National Gas Rules (Gas Rules), which took effect on 1 July 2008, provide the overarching regulatory framework for the gas distribution sector. These instruments replace the Gas Pipelines Access Law and the National Gas Code (Gas Code), which provided the regulatory framework from 1997 to 30 June 2008.

The Gas Rules (previously the Gas Code) include a coverage mechanism to determine which pipelines are subject to economic regulation. At July 2008, the Gas Rules covered 12 distribution networks, including all major networks in New South Wales, Victoria, Queensland, Western Australia and South Australia. The only major unregulated network is the Tasmanian distribution network, which is currently being rolled out. In addition, a number of small regional networks are not covered.³

The main aim of regulating a distribution network is to ensure that energy retailers and other third parties can negotiate access on reasonable terms and conditions. This may require an independent regulator to vet prices to ensure they are not set at monopolistic rates.⁴

10.4.1 Regulatory framework

The regulation of covered distribution networks was transferred from state and territory regulators to the Australian Energy Regulator (AER) on 1 July 2008.⁵ In Western Australia, the local regulator—the Economic Regulation Authority—will continue to regulate covered networks.

The AER's first regulatory review in gas distribution will assess prices and other access terms and conditions from July 2010 for covered networks in New South Wales and the ACT. The AER is working closely with jurisdictional regulators and network businesses to maintain regulatory certainty in the transition period.

The service provider⁶ of a covered distribution network must comply with the provisions of the National Gas Law and Gas Rules. Typically this requires submitting an access arrangement—including pipeline tariffs—to the regulator for approval. The legislation also allows for a light regulation option in some circumstances, in which the service provider is obliged only to publish terms and conditions of access on its website.

An access arrangement must set out the terms and conditions of third party access. It must specify at least one reference service that is commonly sought by customers, and a reference (benchmark) tariff for that service. The reference service can be set for different zones (different customer locations across the network) and may comprise different components.

A reference tariff provides a benchmark for negotiating prices, but is also enforceable by the regulator. Reference tariffs may apply to one or more of the network services offered, including capacity reservation (managed capacity services), volume (throughput services), peak, off-peak and metering (data) services. A network may also deliver non-reference services.

3 A party may seek a change in the coverage status of a pipeline by applying to the National Competition Council. At present, the non-covered networks include the South West Slopes and Temora extensions of the NSW Gas Network; the Dalby and Roma town systems in Queensland; the Alice Springs network in the Northern Territory; and the Mildura system in Victoria.

4 The new gas access regime, which took effect in 2008, allows a light regulation option, without direct price control, under certain conditions. See section 9.3.

5 While the AER assumed the role of economic regulator of distribution networks on 1 July 2008, existing access arrangements will continue to be administered by the jurisdictional regulators – in Victoria, the Essential Services Commission of Victoria (ESC); in South Australia, the Essential Services Commission of South Australia (ESCOSA); in New South Wales, the Independent Pricing and Regulatory Tribunal (IPART); in Queensland, the Queensland Competition Authority (QCA); and in the Australian Capital Territory, the Independent Competition and Regulatory Commission (ICRC).

6 In accordance with the National Gas Law, the service provider may be the owner or operator of the whole pipeline or any part of the pipeline.

Figure 10.2
Distribution network ownership

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
NSW and the ACT	NSW Gas Networks	AGL											Alinta	Singapore Power	
	Wagga Wagga	Country Energy (NSW Government)													
	Canberra Distribution	AGL				ActewAGL (ACT Government, AGL)							ACT Govt, Singapore Power		
Vic	GasCor	Government		Stratus	Envestra										
			Multinet	AMP Soc & Utilicorp			DUET (79.9%), Alinta (20.1%)			DUET (80%), BBI (20%)					
			Westar	TXU				SP AusNet (SPI 51%)							
Tas	Tasmanian Distribution									Babcock & Brown Infrastructure					
Qld	Allgas	Government											APA Group		
	Gas Corp of Qld	Boral		Envestra											
SA	SAGASCO														
NT	Centre Gas Systems	Boral													
	NT Gas	Amadeus Gas Trust					Amadeus Gas Trust (96% APT)								
WA	SECWA	Govt	AlintaGas				WAGH (45%)		Alinta (74%), DUET (26%)			BBI (74%), DUET (26%)			

BBI, Babcock & Brown Infrastructure; SECWA, State Energy Commission of Western Australia; WAGH, WA Gas Holdings.
Note: Some corporate names have been abbreviated or shortened.

Most network providers use a building block approach to determine total revenues. Under the Gas Rules, total revenues should reflect efficient costs, recover depreciation and operating expenditure, and provide a return on capital. Reference tariffs are set by dividing total revenue by forecast sales volumes for the relevant reference services. Tariffs are typically adjusted annually for inflation and other approved factors.⁷

While the new regulatory framework—which commenced on 1 July 2008—makes some changes to the decision-making process and the timing of regulatory decisions, the approach to assessing reference tariffs remains largely unchanged. Chapter 9 provides a summary of key changes affecting regulatory decision making under the new legislation.

Figure 10.3 shows the revenue components in the latest access arrangement for Multinet in Victoria (owned by DUET Group and Babcock & Brown Infrastructure). It illustrates the relative importance of the building block components in a typical reference tariff determination. Returns on assets and depreciation account for around two-thirds of the revenue determination. Operating and maintenance costs; tax; and efficiency carry-overs account for the balance.

⁷ See also chapter 9 for background on the regulatory framework for gas transmission. The frameworks for gas transmission and distribution are similar.



Babcock & Brown Infrastructure

Construction of the South Gippsland Natural Gas Pipeline (Multinet)

10.5 Investment in distribution networks

Investment in gas distribution typically involves capital works to upgrade and expand the capacity of existing networks and extend the networks into new residential and commercial developments, regional centres and towns. While most major centres already have a distribution network in place, there are also recent examples of new networks being constructed—for example, the Central Ranges (New South Wales) and Tasmanian networks. Mostly, however, distribution investment relates to discrete development and upgrade projects that are relatively small compared to capital projects in gas transmission. This tends to result in distribution investment recording relatively stable trends over time, compared to the ‘lumpy’ investment cycles often seen for gas transmission.

The cost of distribution investment depends on a range of factors, including:

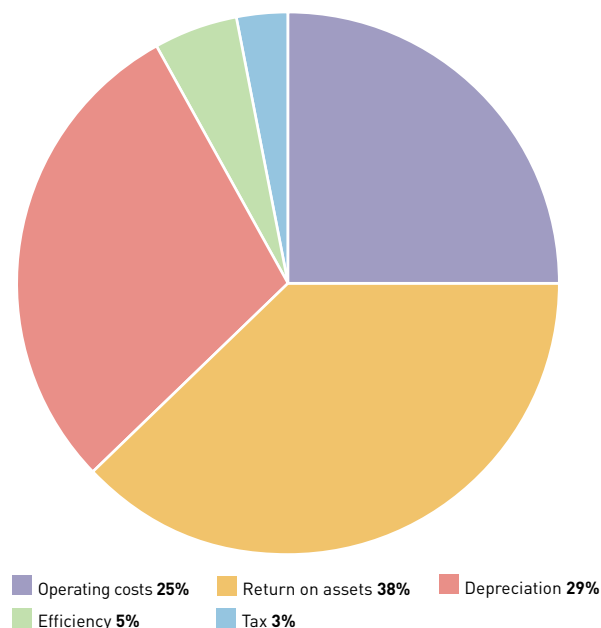
- > the distance of new infrastructure from access points on gas transmission lines or gas distribution mains
- > the density of housing and the presence of other industrial and commercial users in the area.

Figure 10.4 shows the opening regulated asset bases (RABs)⁸ and forecast investment over the current regulatory period (typically five years) for the major networks. Figure 10.5 shows annual investment in each network in the current decade, based on actual data where available, and forecast data for other years. The forecast data relates to proposed investment that the regulator has approved as efficient. The chart excludes the Tasmanian distribution network, which is not covered by the Gas Rules. The graphs depict real data in June 2007 dollars.

Investment in gas distribution networks has grown steadily in recent years:

- > Investment was forecast at around \$400 million in 2007–08, and grew on average, by around 8 per cent annually over the preceding five years.

Figure 10.3
Revenue components for Victoria’s Multinet gas network, 2008–12



Source: ESC, *Gas access arrangement review 2008–2012, Final decision*, 2008.

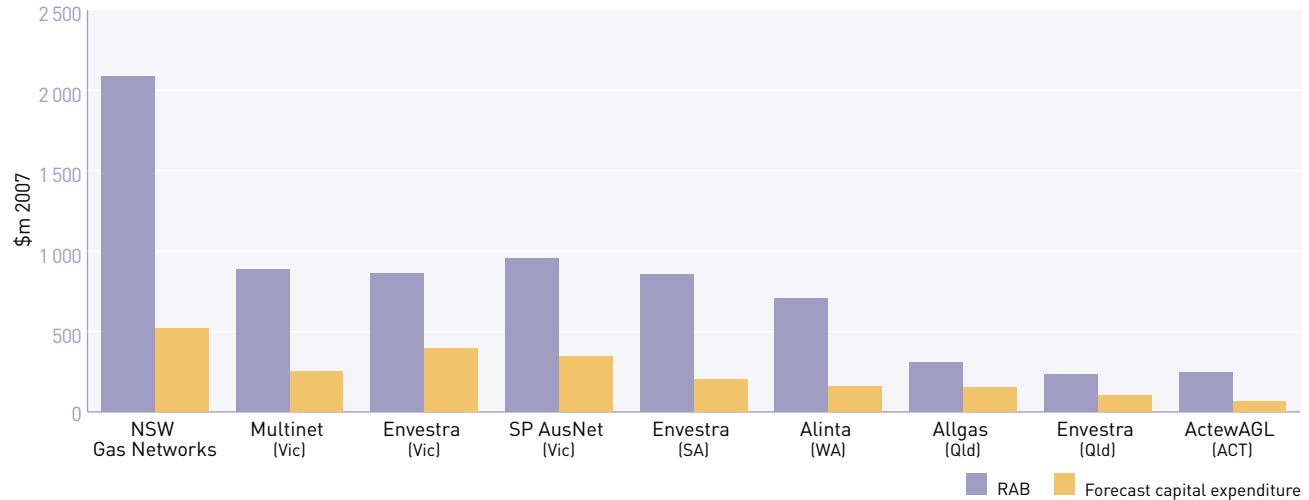
- > Over the longer term, real investment of around \$2 billion is forecast during the current regulatory periods for the major networks. This represents both substantial real investment in new infrastructure as well as rising resource costs in the construction sector.⁹
- > Investment over the current regulatory cycle is running at around 25 per cent of the underlying asset base in most networks, but around 35 per cent for SP AusNet (Victoria) and 40–50 per cent for Envestra (Victoria) and the Queensland networks.
- > The combined Victorian networks attract significantly higher investment than New South Wales, in part reflecting the penetration of natural gas as a major heating source in Victoria. More generally, different outcomes between jurisdictions reflect a range of variables, including development activity; incentives or policies that encourage gas supply; market conditions; and investment drivers such as the scale and age of the networks.

⁸ The regulated asset base estimates the depreciated optimised replacement cost of an asset.

⁹ Some resource costs in the energy construction sector are rising faster than general inflation, as measured by the Consumer Price Index. Chapter 4 provides data on rising costs. See section 4.4, including figures 4.7 and 4.8.

Figure 10.4

Gas distribution assets and investment—current regulatory period (real)



Notes:

1. The asset valuation for each pipeline is the RAB published in a regulator-approved access arrangement.
2. Investment data represents forecast capital expenditure over the current regulatory period (see table 10.1).
3. All estimates are converted to June 2007 dollars.

Sources: Access arrangements and regulatory determinations published by ESC (Vic); IPART (NSW); QCA (Qld); ESCOSA (SA); ERA (WA); and ICRC (ACT).

- > Investment is forecast to rise strongly during the current decade in Queensland, South Australia and Victoria. Recent regulatory determinations for these jurisdictions reflect a significant step-increase in forecast investment in the current regulatory cycle. Looking forward, the introduction of carbon emission reduction policies may further accelerate the development of natural gas as an energy source, and influence investment.
- > The investment data mostly reflects the incremental expansion of existing networks. For example, Envestra began a \$3.7 million project in 2005 to upgrade and extend its Queensland network. The construction of new transmission pipelines also provides opportunities to develop new distribution networks. For example, the Tasmanian distribution network is being rolled out in major cities and towns following the construction of a transmission pipeline from Victoria to Tasmania.
- > Gas distribution investment tends to reflect more stable trends over time than gas transmission. This reflects the nature of gas distribution investment, which typically focuses on roll-out and upgrade projects. There is some volatility due to factors such as timing differences between the commissioning

and completion of projects. More generally, the network businesses have some flexibility to manage and reprioritise the timing of capital expenditure over the regulatory period. Transitions between regulatory periods, and from actual to forecast data, also cause some data volatility.

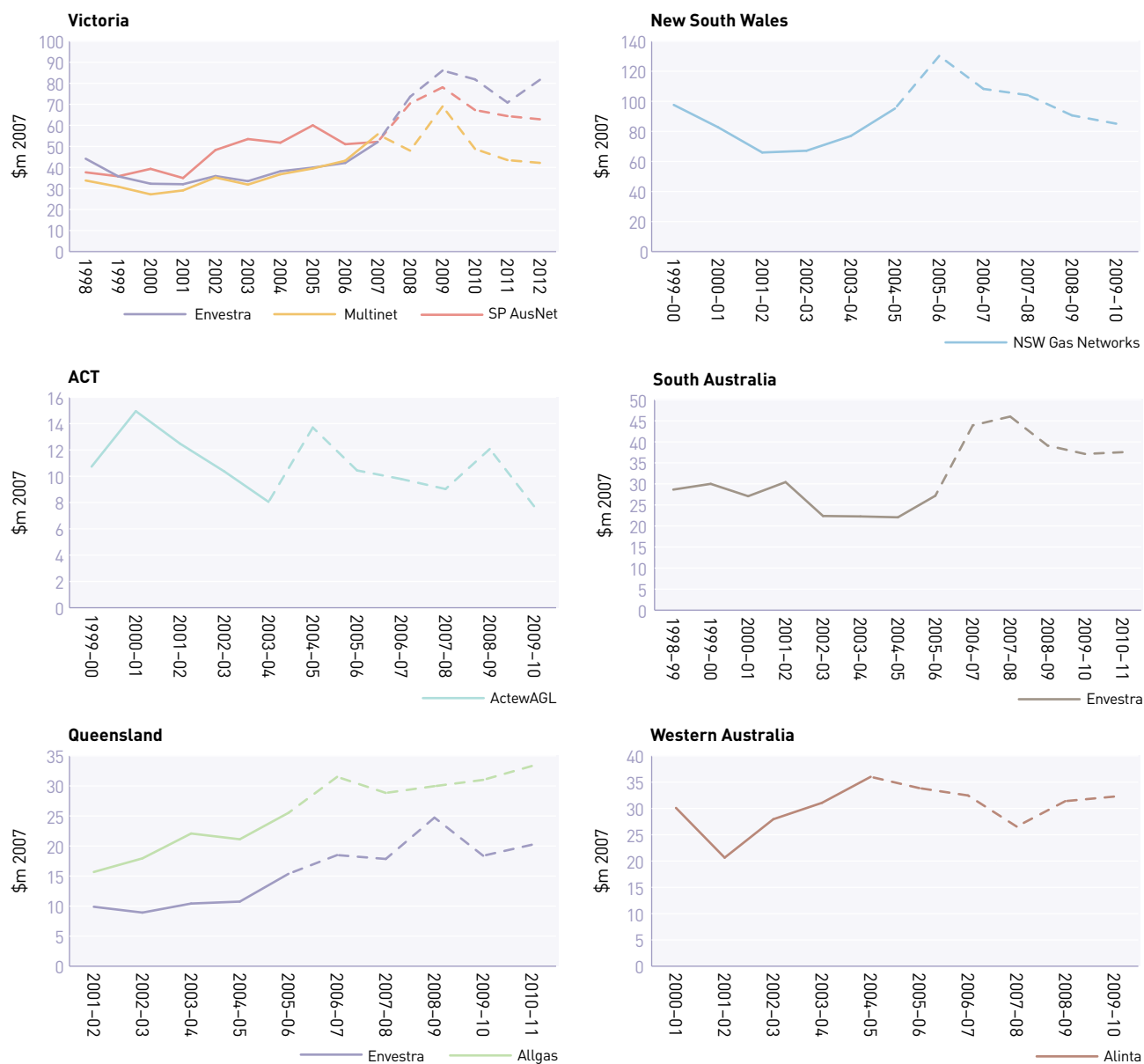
10.6 Financial indicators

Some jurisdictional regulators have published annual performance reports on gas distribution networks. The reports reflect the dual roles of some jurisdictional agencies as technical and economic regulators. In addition, regulatory determinations include both historical performance data for the preceding regulatory period and forecasts of future outcomes. The data set out in section 10.6 are derived from regulatory forecasts.

10.6.1 Revenues

Figure 10.6 charts real revenues for the major networks, based on forecasts in regulatory decisions. Real revenues have remained stable over time, with modest growth—reflecting rising demand—in some instances.

Figure 10.5
Network investment (real)

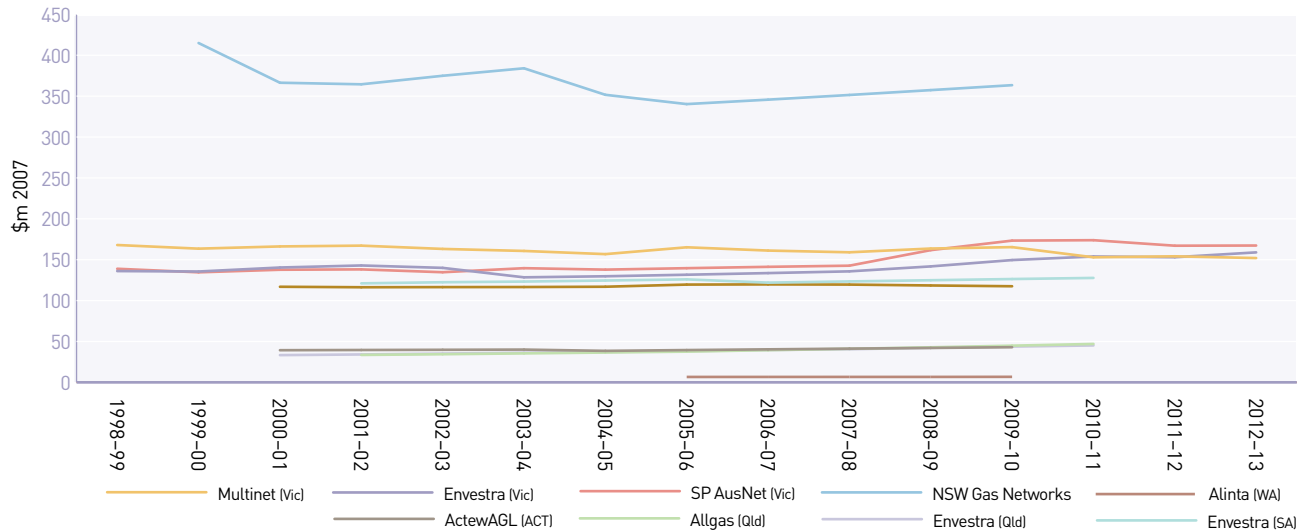


Notes:

1. The asset valuation for each pipeline is the RAB published in a regulator-approved access arrangement.
2. Actual data (unbroken lines) used when available and forecasts (broken lines) for other years.

Sources: Access arrangements, regulatory determinations and network performance reports published by ESC (Vic); IPART (NSW); QCA (Qld); ESCOSA (SA); ERA (WA); and ICRC (ACT).

Figure 10.6
Revenue forecasts (real)



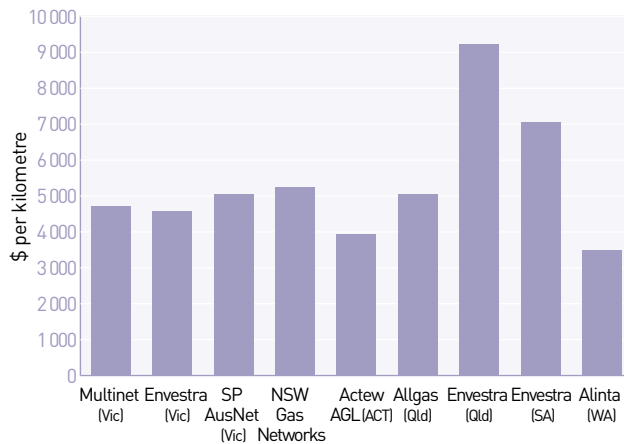
Notes:

1. Forecast data for year ended 30 June. Victorian data are for previous calendar year (for example, 2006-07 refers to calendar year 2006).
2. All data converted to 2007 dollars.

Source: Approved access arrangement for each pipeline.

Figure 10.7

Operating and maintenance expenditure per kilometre of pipeline, 2007



Notes:

1. Forecast data for year ended 30 June. Victorian data are for 2006 calendar year.
2. All data converted to 2007 dollars.

Sources: Approved access arrangement for each pipeline; network performance reports published by ESC (Vic); IPART (NSW); QCA (Qld); ESCOSA (SA); ERA (WA); and ICRC (ACT).

The variations between networks reflect differences in market conditions and cost drivers such as the scale and age of the networks. For example, the relatively high revenues for NSW Gas Networks in part reflects that the network covers most of the state. In comparison, Victoria has three major networks.

10.6.2 Operating and maintenance expenditure

Figure 10.7 compares forecast operating and maintenance expenditure for the networks on a per kilometre basis. Most networks have expenses ranging from about \$4000 to \$7000 per kilometre of network line length. Differences may arise for a number of reasons, including the age and condition of the networks and geographical factors. Normalising on a per kilometre basis may bias against high-density urban networks with relatively short line lengths. Envestra, which has been expanding its Queensland network, recorded higher per kilometre costs than the other networks.

Table 10.2 Gas distribution performance: reporting arrangements

JURISDICTION	REPORTING ARRANGEMENTS
New South Wales	Distribution businesses report annually to the Department of Water and Energy on network integrity and safety information, network reliability and consumer-related matters. As of 1 March 2008, the most recent published data was for 2001–02.
Victoria	The Essential Services Commission publishes annual performance reports for the three gas distribution businesses, covering financial performance, reliability of supply, network integrity, and customer service.
Queensland	The Queensland Competition Authority publishes annual performance reports for the two distribution businesses, covering unaccounted-for gas, reliability of supply and customer service.
South Australia	The Essential Services Commission of South Australia publishes annual performance reports, covering financial performance, reliability of supply, network integrity and customer service.
Western Australia	The Economic Regulation Authority published its first compliance report for gas distribution in 2007, covering reliability of supply and network integrity. New licensing arrangements will widen the range of published data over time, including performance indicators based on the Victorian model.
Tasmania	The Office of the Tasmanian Energy Regulator publishes annual performance reports, covering reliability of supply, network integrity, and customer service.
ACT	The Independent Competition and Regulatory Commission publishes annual performance reports, covering network performance and consumer protection. As of 1 March 2008, the most recent published data was for 2004–05.

10.7 Quality of service

Quality of service monitoring for gas distribution services typically relates to:

- > reliability of gas supply (the provision of a continuous gas supply to customers)
- > network integrity (gas leaks; the effectiveness of operational and maintenance activities)
- > customer service (responsiveness to issues such as complaints and reported gas leaks).

While the Utility Regulators Forum established national reporting indicators on service quality for electricity distribution and energy retailing, there are no equivalent indicators for gas distribution. Instead, the practice has been to develop jurisdiction-specific service standards and reporting arrangements. Some of these technical and service standards are connected with jurisdictional licensing requirements. The jurisdictional reporting arrangements are outlined in table 10.2.

As noted, the monitoring and reporting of service quality is less comprehensive in the natural gas sector than in the electricity sector. This reflects:

- > different approaches to reporting across jurisdictions
- > the greater reliance on electricity than natural gas as a major energy source for most end-users
- > technical characteristics inherent in the distribution of gas.

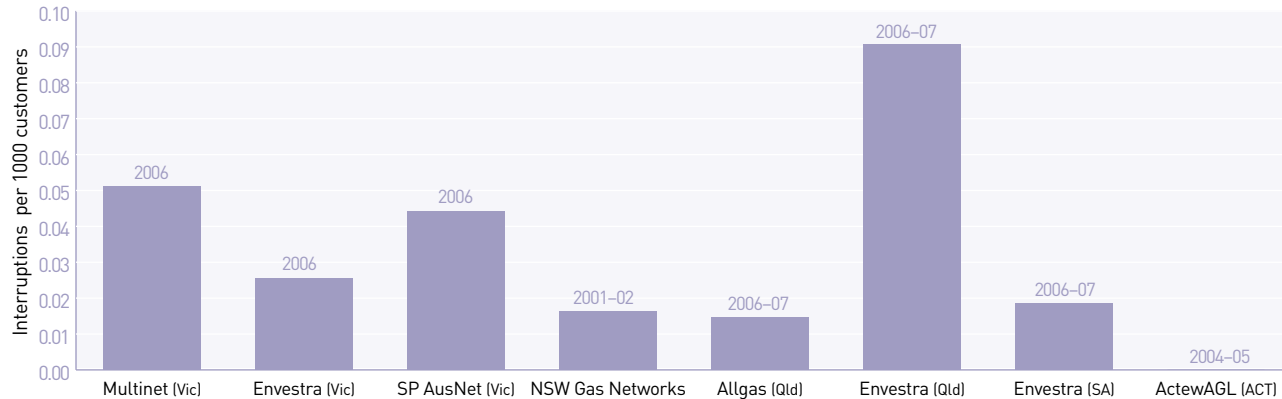
A distinguishing feature of reliability and network integrity issues in the gas sector compared with the electricity sector is the management of safety issues and the scope for widespread damage and injury from incidents such as gas explosions. The oversight of these gas network integrity and safety issues is undertaken by technical jurisdictional regulators, and is generally administered through licensing requirements.

10.7.1 Reliability of supply

The reliability of gas supply refers to the continuity of supply to customers. Most jurisdictions impose reliability requirements on gas distributors as part of their licence conditions and publish performance data. In some cases, jurisdictions impose statutory obligations for network operators and owners, relating to the continuity of gas supply.

From a reliability perspective, gas distribution networks can maintain continuous gas flow to most customers in the event of a disruption to part of the network. In the case of planned renewals, or unplanned incidents such as gas explosions, third party damage, water entering the mains or directions from the technical regulator, customers in the vicinity of the incident or those affected by the technical direction of the regulator may experience a loss of gas flow. However, even if a gas

Figure 10.8
Significant unplanned interruptions per 1000 customers



Notes: Latest year of available data. Includes only interruptions affecting five or more customers.

Sources: Network performance reports published by ESC (Vic); QCA (Qld); ESCOSA (SA); ICRC (ACT); and Department of Water and Energy (NSW).

main is damaged, the gas can usually still flow across the distribution network, leaving supply to most customers unaffected. If necessary, a distribution network operator can load-shed some customers to manage a more serious supply interruption (as will be discussed later in the chapter).

Figure 10.8 shows the most recent data for each jurisdiction on the number of significant¹⁰ unplanned supply interruptions per 1000 customers. The Victorian, Queensland and South Australian regulators publish these data annually. Tasmania also publishes annual data, but not on a comparable basis to the mainland networks. The Tasmanian data are likely to record volatility while the state's distribution network is being rolled out. The ACT recorded negligible interruptions in the only year of published data. The New South Wales Department of Water and Energy collects annual reliability data from network businesses, but the latest published data are for 2001-02.

Figure 10.8 indicates that the rate of interruptions is low for all networks, with most recording fewer than 0.05 events per 1000 customers. The Essential Services Commission (ESC) reported in 2007 that the average Victorian customer may expect to lose supply about once every 40 years.¹¹ In part, these outcomes reflect the

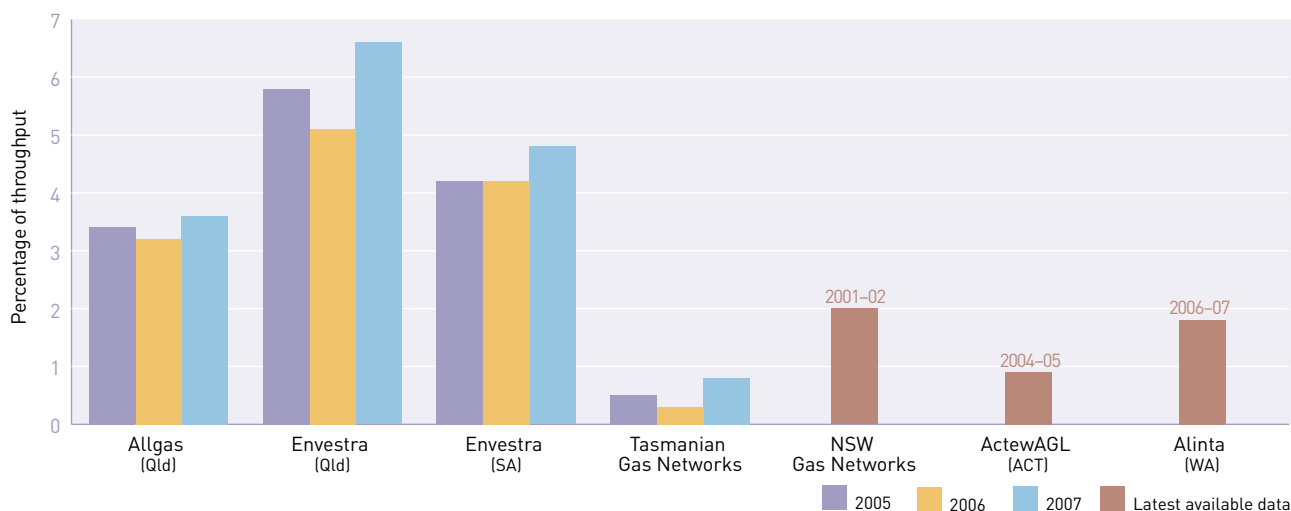
inherently reliable nature of gas distribution networks. Envestra's Queensland network, which recorded a higher rate of interruptions than other networks, received a significant increase in investment allowances in the current regulatory period. This may improve the network's reliability performance over time.

There were significant reliability issues in New South Wales and the ACT from 22-24 June 2007 when capacity on the Eastern Gas Pipeline and gas flows on the Moomba to Sydney Pipeline were insufficient to meet higher than expected demand. The distribution network operator was able to manage this issue by load-shedding large industrial and commercial customers, resulting in interruptions to their gas supplies. This enabled gas flows to continue without interruption to smaller retail customers. While there was no underlying infrastructure failure in this instance, the New South Wales Government established a *Gas Continuity Scheme* in 2008 to mitigate the risk of a recurrence. The scheme will provide commercial incentives for producers to increase supplies and customers to reduce gas usage in the event of a shortfall event.

¹⁰ Affecting five or more customers.

¹¹ ESC, *Gas Distribution Businesses, Comparative Performance Report 2006, 2007*, p. 2.

Figure 10.9
Unaccounted-for gas



Note: Limited data available for New South Wales, Western Australia and the ACT.

Sources: Network performance reports published by ESC (Vic); QCA (Qld); ESCOSA (SA); ICRC (ACT); and Department of Water and Energy (NSW)

10.7.2 Network integrity

Network integrity issues relate to matters such as the frequency of gas leaks and the amount of unaccounted-for gas. Victoria, Queensland, Western Australia and the ACT publish data on gas leaks, but the indicators differ between jurisdictions. Victoria and the ACT publish annual data on the number of gas leaks per kilometre of pipe. The Victorian networks typically record around 1.3 gas leaks per kilometre each year, but most leaks affect few customers. In 2007, Western Australia began publishing data on the number of reported gas leaks occurring in public areas. Queensland reports a separate data series on the response time to repair gas leaks. The data indicate a typical response time of just under one hour for a network business to secure the site of a leak.

Unaccounted-for gas refers to the difference between the amount of gas injected into a distribution network and the amount of gas ultimately delivered to customers. Losses can occur for a number of reasons, including gas leaks, meter reading errors and theft. Queensland, South Australia, Western Australia and Tasmania report

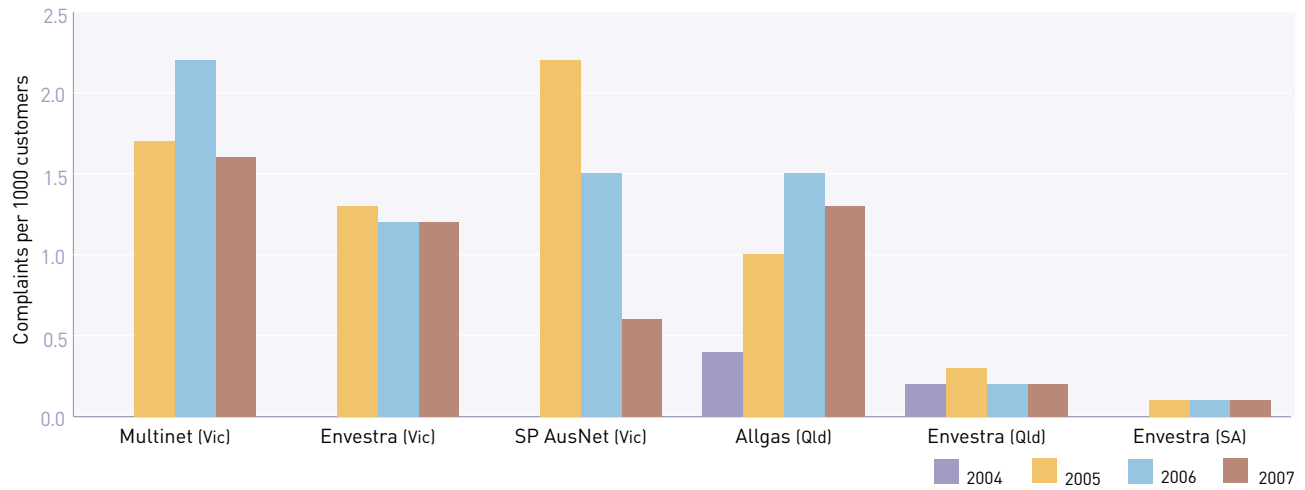
annually on this data. The Western Australian regulator published these data for the first time in 2007. The ACT last published data on unaccounted-for gas in 2004–05. The latest reported New South Wales data are for 2001–02. Figure 10.9 sets out the latest three years of data for Queensland, South Australia and Tasmania, and the limited data available for Western Australia, New South Wales and the ACT.

Figure 10.9 indicates that up to 7 per cent of gas injected into a pipeline may be unaccounted for. The Essential Services Commission of South Australia noted in its 2006–2007 performance report that unaccounted-for gas had almost doubled in the Envestra network since 2002–03. The issue may be linked to the existence of older cast iron pipelines in parts of network. Envestra is undertaking a capital works program to replace around 100 kilometres of cast iron pipes a year.¹² In 2007, the Queensland Competition Authority also noted a high rate of unaccounted-for gas in Envestra's Queensland network. Envestra reported that infrastructure replacement programs would likely reduce unaccounted-for gas over time.¹³ Conversely, the low

12 ESCOSA, *2006–07 Annual performance report: Performance of South Australian energy networks*, 2007, p. 77.

13 Queensland Competition Authority, *Gas Distribution—Service Quality Performance for the Year Ending 30 June 2007*, 2007, p. 7.

Figure 10.10
Customer complaints per 1000 customers

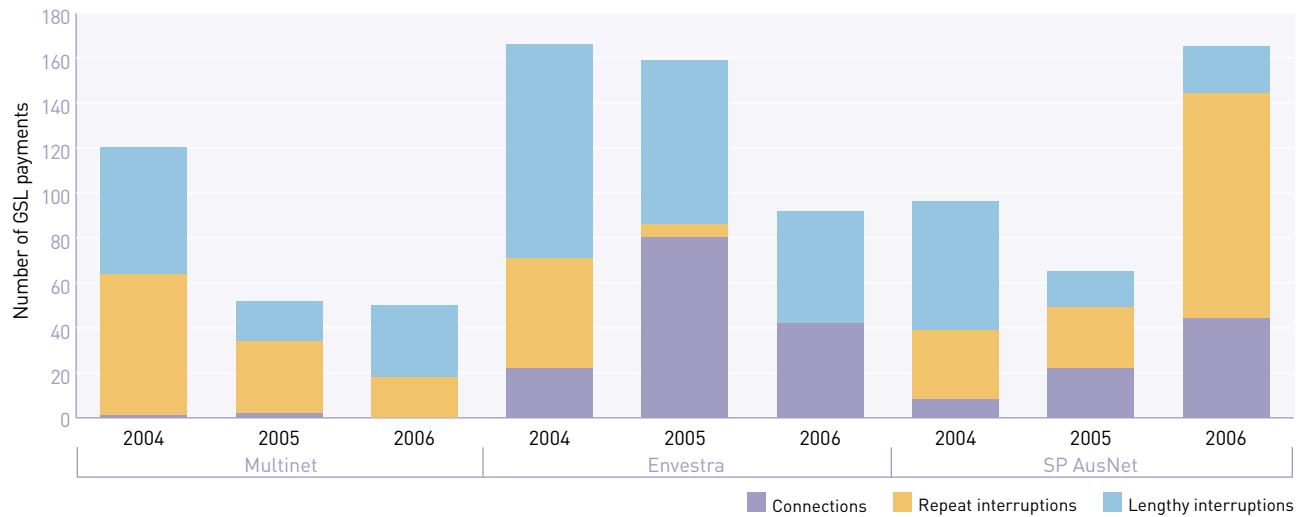


Notes:

1. Data for year ended 30 June. Victorian data are for preceding calendar year (for example, 2006–07 refers to calendar year 2006).
2. Victorian and South Australian data only available from 2004–05.

Sources: Network performance reports published by ESC (Vic), QCA (Qld); and ESCOSA (SA).

Figure 10.11
Guaranteed service level payments—Victoria



Sources: Essential Services Commission (ESC), Victoria, *Gas distribution businesses—comparative performance report 2006, 2007*.

rate of unaccounted-for gas in Tasmania may in part reflect the fact that the distribution network is relatively new and embodies more recent technology than some other networks.

10.7.3 Customer service

The level of customer service achieved by a distributor can be measured in terms of timeliness and responsiveness across a range of customer interactions, including customer calls, arranging new connections, keeping appointments, and the number and nature of complaints made about service providers. Victoria, Queensland and South Australia report annually on this information (figure 10.10). The latest reported New South Wales data is for 2001–02. As of 1 March 2008, the latest data for the ACT were for 2004–05.

The number of customer complaints has tended to lie in a range of 0.5 to 2 complaints per 1000 customers. Envestra achieved a significantly lower rate of complaints in both Queensland and South Australia. The complaints rate has tended to fall in Victoria over the past three years. A number of factors may limit the validity of comparisons between the networks, including differences in measurement and auditing systems.

Victoria applies guaranteed service levels that distributors must meet, or pay penalties for breaches. Figure 10.11 sets the number of payments made by each distributor for failures to meet target service levels over a three-year period. The ESC reported that, in 2006, distributors made 307 payments worth almost \$30 000. The number of payments declined by 12 per cent and their total value by 8 per cent from 2005, although performance levels varied between networks.¹⁴

14 Essential Services Commission (ESC), Victoria, *Gas distribution businesses—comparative performance report 2006, 2007*.