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5

REGULATED GAS NETWORKS

Gas pipeline networks transport gas from upstream producers to energy customers. Australia's gas pipeline networks consist of: (1) long haul transmission pipelines that carry gas from producing basins to major population centres, power stations and large industrial and commercial plant, and (2) urban and regional distribution networks, which are spaghetti-like cluster of smaller pipes that transports gas to customers in local communities. This chapter covers the 14 gas pipelines and networks regulated by the Australian Energy Regulator (AER), which are located in states and territories other than Tasmania and Western Australia.¹

Unlike the electricity network sector, many gas pipelines are unregulated or face only limited regulation. This chapter explains the various tiers of regulation that apply, but focuses on 'full regulation' pipelines—those for which the AER sets access prices.² The AER sets access prices for three transmission pipelines—the Roma to Brisbane Pipeline (Queensland), the Victoria Transmission System, and the Amadeus Gas Pipeline (Northern Territory). In gas distribution, the AER sets access prices for networks in New South Wales (NSW), Victoria, South Australia and the Australian Capital Territory (ACT).

5.1 Gas pipeline services

Gas pipeline businesses earn revenue by providing access (selling capacity) to parties needing to transport gas. Those parties include (1) energy retailers seeking to transport gas to energy users, and (2) commercial and industrial users, and liquefied natural gas (LNG) exporters, which buy gas directly from producers and contract with a pipeline owner to ship it.

An interconnected transmission pipeline grid links gas basins in Queensland, central Australia and Victoria with retail markets across eastern and southern Australia (figure 5.1). This interconnected network further expanded with the opening in 2018 of the Northern Gas Pipeline linking the Northern Territory with Queensland.

The most common service provided by a transmission pipelines is haulage—that is, transporting gas in a forward direction from an injection point on the pipeline to an offtake point further along. Haulage may be offered on a firm (guaranteed) or interruptible (only if spare capacity

is available) basis. Some customers seek backhaul too, which is reverse direction transport. Gas can also be stored (parked) in a pipeline on a firm or interruptible basis. As the gas market evolves, a wider range of services are being offered. These new services include compression (adjusting pressure for delivery), loans (loaning gas to a third party), redirection, and in-pipe trades.

Distribution networks consist of high, medium and low pressure pipelines, and run underground. The high and medium pressure mains provide a 'backbone' that services high demand zones, while the low pressure pipes lead off high pressure mains to commercial and industrial customers, and residential homes. While the nature of gas transmission services is evolving to meet changing market needs, distribution pipeline businesses tend to offer fairly standard services—namely, allowing gas injections into a pipeline, conveying gas to supply points, and allowing gas to be withdrawn.

The total length of gas distribution networks in eastern Australia is around 74 000 kilometres. Gas is distributed to most Australian capital cities, major regional areas, and towns. Victoria and Queensland each have multiple distribution networks serving particular areas of the state. NSW, South Australia, Tasmania and the ACT each have a single network.³

While gas distributors transport gas to energy customers, they do not sell gas. Energy retailers purchase gas from producers, and pipeline services from pipeline businesses, and sell them as a packaged retail product to their customers. Many retailers offer both gas and electricity products.

5.2 Gas pipeline ownership

Australia's gas pipelines are privately owned. Table 5.2 details ownership arrangements for pipelines regulated by the AER, and chapter 4 includes information for other pipelines.

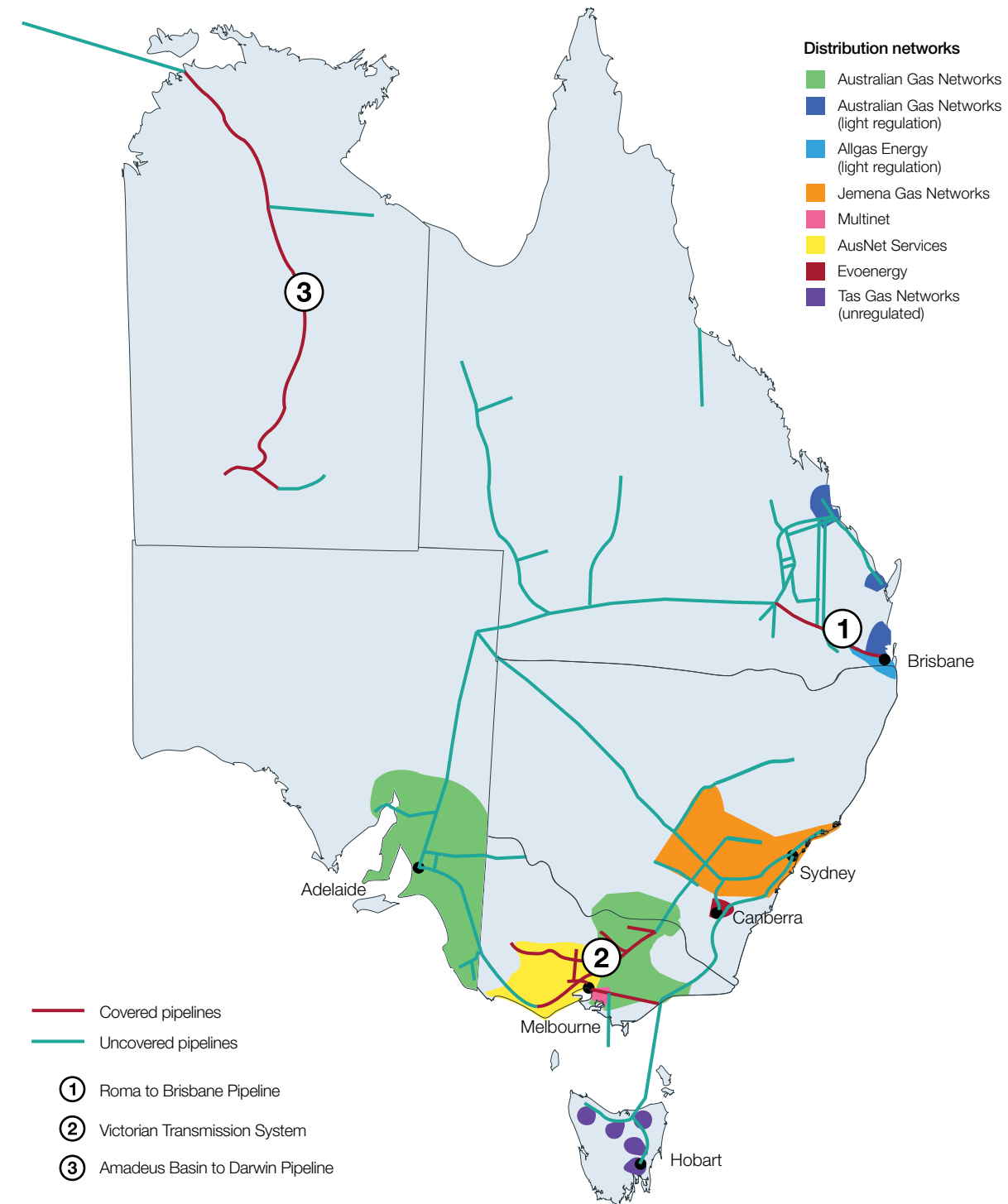
The publicly listed APA Group (APA) is Australia's largest gas pipeline business, with a portfolio mainly in gas transmission. Other sector participants include Jemena (owned by the State Grid Corporation of China and Singapore Power International) and Cheung Kong Infrastructure Holdings Limited (CKI Group) (which operate Australian Gas Networks). The State Grid Corporation of China and Singapore Power International also have interests in the publicly listed AusNet Services.

¹ The Economic Regulation Authority (ERA) administers separate regulatory arrangements in Western Australia (www.erawa.com.au). The Office of the Tasmanian Economic Regulator (OTTER) administers separate regulatory arrangements in Tasmania (www.economicregulator.tas.gov.au/gas).

² Chapter 4 discusses the wider gas transmission sector, including pipelines not under full regulation.

³ Some jurisdictions also have smaller unregulated regional networks, such as the Wagga Wagga network in NSW.

Figure 5.1 Major gas transmission pipelines and distribution networks



Source: AER.

Box 5.1 How the AER regulates gas pipelines

The Australian Energy Regulator's (AER) role in gas pipeline regulation varies depending on the type of regulation applying to a pipeline:

- For *full regulation* pipelines, we set a reference tariff (prices) for at least one service offered by the pipeline, following our assessment of the pipeline's efficient costs and revenue needs. We undertake this role for three major transmission pipelines (in Queensland, Victoria and the Northern Territory), and for gas distribution networks in NSW, Victoria, South Australia and the ACT.
- For *light regulation* pipelines, we arbitrate disputes referred to us by access seekers, and monitor pipeline businesses' compliance with their price disclosure obligations.
- For pipelines under *Part 23 regulation*, we set guidelines on the disclosure of financial and pipeline use information, and monitor and enforce compliance with these obligations. We also establish a pool of experienced arbitrators to deal with disputes, and we can be called on to appoint an arbitrator. We also set conditions for exempting a pipeline from Part 23 obligations.

The State Grid Corporation of China, Singapore Power International, and the CKI Group also have ownership interests (some substantial) in the electricity network sector, including distribution networks in Victoria, South Australia and the ACT (chapter 3).

In 2018 the CKI Group launched a takeover bid for APA. While the Australian Competition and Consumer Commission (ACCC) cleared the bid of anti-competitive concerns, the Treasurer (on advice from the Foreign Investment Review Board) rejected the bid as 'contrary to the national interest'. The Treasurer cited concerns the takeover would result in an 'undue concentration of foreign ownership by a single company group in [Australia's] most significant gas transmission business'.⁴

5.3 How gas pipelines are regulated

Gas pipelines are capital intensive, so average costs will fall as output rises. A natural monopoly industry structure results, where it is more efficient to have a single network provider than to have multiple providers offering the same service. Because monopolies face no competitive pressure, they have the opportunity and incentive to charge unfair prices. This opportunity poses a serious risk to consumers, because pipeline charges make up a significant portion of a residential gas bill (section 6.4.2). For this reason, many gas pipelines are regulated to manage the risk of monopoly pricing.

⁴ The Hon. Josh Frydenberg MP (Treasurer), 'Proposed acquisition of APA', Media release, 7 November 2018.

Different tiers of regulation apply to gas pipelines in Australia (discussed below). A case-by-case test assesses the type of regulation that applies to each pipeline, considering whether:

- the pipeline is a natural monopoly
- regulation would promote competition
- regulation would be cost-effective (that is, the benefits of regulation outweigh the costs).

Box 5.1 summarises the AER's role in gas pipeline regulation. Additionally, the AER monitors participants' compliance with the National Gas Law and Rules, and takes enforcement action when needed. Box 4.1 in chapter 4 outlines the AER's work in this area, including work on reforms to facilitate access to idle capacity in transmission pipelines.

More generally, the AER advises policy bodies on issues in the gas pipeline sector. It may propose or participate in rule change processes, and engage in policy reviews with a view to improving gas regulatory arrangements.

5.3.1 Full regulation

Full regulation is the most intensive form of regulation. It involves the pipeline owner submitting its prices to an independent regulatory body for a detailed economic assessment. The AER undertakes this role in jurisdictions other than Western Australia.

In particular, the AER assesses whether the access tariffs (prices) paid by a third party for using a full regulation pipeline are efficient. Currently, the AER applies full regulation to three gas transmission pipelines and six gas distribution networks, with a combined value of almost \$12 billion (table 5.1).

Table 5.1
Full regulation pipelines

| PIPELINE | JURISDICTION | CUSTOMER NUMBERS ¹ | PIPELINE LENGTH (KM) | CAPACITY (TJ/D) ² | ASSET BASE (\$ MILLION) ³ | ANNUAL INVESTMENT (\$ MILLION) ⁴ | ANNUAL REVENUE (\$ MILLION) ⁴ | CURRENT ACCESS ARRANGEMENT ⁵ | OWNER |
|-----------------------------------|--------------|-------------------------------|----------------------|------------------------------|--------------------------------------|---|--|---|--|
| TRANSMISSION | | | | | | | | | |
| APA Victorian Transmission System | Vic | na | 1 992 | 1614 | 1074 | 50 | 109 | 1 Jan 2018 – 31 Dec 2022 | APA Group |
| Roma to Brisbane Pipeline | Qld | na | 559 | 211/125 | 486 | 14 | 46 | 1 July 2017 – 30 June 2022 | APA Group |
| Amandeus Gas Pipeline | NT | na | 1 658 | 120 | 126 | 4 | 22 | 1 July 2016 – 30 June 2021 | APA Group |
| DISTRIBUTION | | | | | | | | | |
| Jemena Gas Networks | NSW | 1 435 824 | 24 715 | na | 3340 | 172 | 408 | 1 July 2020 – 30 June 2025 | Jemena (State Grid Corporation, Singapore Power) |
| AusNet Services | Vic | 710 000 | 11 650 | na | 1727 | 99 | 175 | 1 Jan 2018 – 31 Dec 2022 | Listed Company (Singapore Power 31%, State Grid Corporation 20%) |
| Multinet | Vic | 687 000 | 9 866 | na | 1321 | 82 | 176 | 1 Jan 2018 – 31 Dec 2022 | CKI Group |
| Australian Gas Networks | Vic | 613 454 | 10 447 | na | 1811 | 114 | 228 | 1 Jan 2018 – 31 Dec 2022 | CKI Group |
| Australian Gas Networks | SA | 423 462 | 7 950 | na | 1693 | 120 | 195 | 1 July 2016 – 30 June 2021 | CKI Group |
| Evoenergy | ACT | 146 000 | 4 911 | na | 419 | 17 | 68 | 1 July 2016 – 30 June 2021 | ACTEW Corporation (ACT Government) 50%, Jemena (State Grid Corporation, Singapore Power) 50% |

km, kilometres; na, not available; TJ/d, terajoules per day.

Note: Excludes gas pipelines in Western Australia, which the Economic Regulation Authority (ERA) regulates.

1. Customer numbers and line length are most recent data available, retrieved 20 April 2020.
2. Where two capacity values appear, the first value represents pipeline capacity for the primary gas flow direction. The second value represents reverse flow capacity for bi-directional pipelines.
3. The asset base is the forecast value of network assets based on the closing regulated asset base (RAB) at 30 June 2019, except for the Victorian transmission network (31 March 2019) and Victorian distribution networks (31 December 2019). Values are in June 2020 dollars. Each year the RAB will simultaneously increase due to new investment, and decrease due to depreciation and asset disposals.
4. Investment and revenue are the annual averages for the current period using actual figures where available, and forecast figures for the remaining years.
5. The current access arrangement period at 1 July 2020.

Source: AER access arrangement decisions; AEMO website; Australian Securities Exchange (ASX) releases; company annual reports; company websites; Gas Bulletin Board.

Only a handful of transmission pipelines are fully regulated. Full regulation has been removed from many pipelines over the past 20 years, and no new pipeline commissioned in the past 20 years is subject to full regulation. Some pipelines moved to light regulation (section 5.3.2). Other pipelines are free from any form of regulation.

Section 5.4 further discusses full regulation.

5.3.2 Light regulation

Light regulation uses a commercial negotiation approach supported by mandatory information disclosure. Pipeline businesses must publish access prices and other terms and conditions on their website. They may not engage in inefficient price discrimination or other conduct adversely affecting access or competition in other markets.

If a party is unable to negotiate access to a pipeline they may request the AER arbitrate a dispute.

In eastern Australia, the Carpentaria Pipeline in Queensland, portions of the Moomba to Sydney Pipeline, and the Central West Pipeline in NSW are subject to light regulation (table 5.2). Queensland's two gas distribution networks—Australian Gas Networks and Allgas Energy—became the first distribution networks to convert from full to light regulation in 2015.

5.3.3 Part 23 regulation

Gas pipelines not subject to full or light regulation are 'unregulated', so they are free to set their own prices and other terms and conditions. Independent reviews by the ACCC in 2015⁵ and for the Council of Australian Governments (CoAG) Energy Council in 2016⁶ raised concerns about monopolistic practices by some pipeline operators.

These concerns led to the introduction of new provisions (Part 23) in the National Gas Rules, which took effect in 2018. Part 23 aims to make it easier for gas customers to negotiate access to unregulated pipelines at a reasonable price. The rules require otherwise unregulated pipeline businesses to disclose certain financial, service and access information, following guidelines published by the AER.

The ACCC in 2019 found, overall, Part 23 is working as intended and having a positive effect on some pipeline prices and the contracting environment. However, the ACCC had significant concerns with some information published by pipeline operators, including information errors and overstated costs and asset values.⁷ It recommended improvements to Part 23 to address these issues, which are being considered as part of the CoAG Energy Council's *Gas pipeline regulation impact statement*.⁸

Customers can use the disclosed information under Part 23 to negotiate gas transport contracts with pipeline operators. If the pipeline operator and access seeker cannot reach an agreement, an access seeker can apply for arbitration. The AER uses a pool of experienced arbitrators to determine disputes, and liaises with the parties on appointing an arbitrator from the pool. If the parties fail to select an

arbitrator, the AER appoints the arbitrator. The AER maintains a register of arbitrated access determinations.⁹

A pipeline owner can apply to the AER for an exemption from the disclosure provisions if, for example, a pipeline does not provide third party access, has only a single shipper, or has average daily gas injections of less than 10 TJ per day. Exemptions may be subject to conditions and varied at the AER's discretion.

Tasmania dispute

At April 2020 only one access determination under the Part 23 rules had been made—a dispute between Hydro Tasmania and Tasmanian Gas Pipeline (TGP) over access to the TGP transmission pipeline in April 2018. The dispute related to the valuation of assets used to provide the services required by the access seeker (firm forward haul services, as available forward haulage). The arbitrator determined a valuation method to reflect the value of assets used in providing the relevant services.¹⁰

5.4 How gas pipeline access prices are set

Gas pipeline businesses earn revenue by selling capacity in their pipelines to customers needing to transport gas. A customer buys access to that capacity under terms and conditions that include an access price. The AER sets access prices for full regulation pipelines in eastern Australia and the Northern Territory under broadly similar rules to those applied to electricity networks (chapter 3).

The owners of other pipelines—including those subject to light regulation and the new Part 23 regime—are free to set their own prices. Light regulation pipeline owners must publish their prices, but these prices are not independently vetted.

5.4.1 Regulatory objective and approach

The National Gas Law and National Gas Rules lay out the regulatory framework for gas pipelines. The National Gas Law's regulatory objective is to promote efficient investment in, and operation and use of, gas services for the long term interests of consumers of gas, in terms of the price, quality, safety, reliability and security of supply of gas. The

Table 5.2
Light regulation pipelines

| PIPELINE | LOCATION | CUSTOMER NUMBERS | PIPELINE LENGTH (KM) | CAPACITY (TJ/D) ¹ | OWNER |
|---|----------|------------------|----------------------|------------------------------|---|
| TRANSMISSION | | | | | |
| Carpentaria Pipeline (Ballera to Mount Isa) | Qld | na | 942 | 119 | APA Group |
| Central West Pipeline (Marsden to Dubbo) | NSW | na | 255 | 3 | APA Group |
| Moomba to Sydney Pipeline ² | NSW | na | 2001 | 489/120 | APA Group |
| DISTRIBUTION | | | | | |
| Allgas Energy ³ | Qld | 100 000 | 3218 | na | Marubeni 40%, Deutsche AWM 40%, APA Group 20% |
| Australian Gas Networks ³ | Qld | 92 852 | 2703 | na | CKI Group |

km, kilometres; na, not available; TJ/d, terajoules per day.

Note: The AER does not conduct access arrangement reviews for light regulation pipelines, so limited data are available. Unlisted pipelines are unregulated, except under the Part 23 information disclosure and arbitration provisions introduced in July 2017. Chapter 4 lists major unregulated transmission pipelines. Gas distribution networks in Tasmania and the Northern Territory are unregulated.

1. Part of the Moomba to Sydney Pipeline is subject to light regulation. The pipeline is unregulated from Moomba to the offtake point of the Central West Pipeline at Marsden.
2. Where two capacity values appear, the first value represents pipeline capacity for the primary gas flow direction. The second value represents reverse flow capacity for bi-directional pipelines.
3. Gas distribution pipelines in Queensland converted from full to light regulation in 2015.

Sources: Australian Securities Exchange (ASX) releases; company annual reports; company websites.

National Gas Rules set out revenue and pricing principles, including that pipeline businesses should have a reasonable opportunity to recover efficient costs.

Owners of full regulation gas pipelines must periodically submit a regulatory proposal—called an access arrangement—to the AER. The proposal sets out the pipeline business's forecast revenue and expenditure needs over the upcoming access arrangement (which typically covers a five year period), and an access price derived from demand forecasts.

The AER then assesses the proposal—focusing on the business's forecast revenue requirements to cover its efficient costs. As in electricity, the AER uses a building block approach to assess the business's *efficient* costs (section 5.5). Ensuring only efficient costs are included in the calculation of a regulated business's revenue requirement helps protect customers from being charged unreasonable prices.

The AER draws on a range of inputs to assess efficient costs, including cost and demand forecasts, and revealed costs from experience. But it has not formalised the approach through published guidelines. An exception is the rate of return assessment, for which a common AER guideline applies to both electricity and gas. New legislation in November 2018 provided for the AER to make binding rate of return determinations. The AER released its first Rate of Return Instrument (RRI) in December 2018, setting out its approach (section 3.11.1).

If the AER finds a business's access arrangement proposal to be unnecessarily costly, it may go back to the business and ask for more detailed information or for a clearer business case. If these steps fail to satisfy the AER, it may amend the access arrangement to align it with efficient costs.

The AER's final decision sets an access price (reference tariff) for a commonly sought gas pipeline service (reference

⁵ ACCC, *Inquiry into the east coast gas market*, 2018.

⁶ CoAG Energy Council, *Examination of the current test for the regulation of gas pipelines*, December 2016.

⁷ ACCC, *Gas inquiry 2017–2020. Interim report*, July 2019, August 2019.

⁸ CoAG Energy Council, *Measures to improve transparency in the gas market—decision regulation impact statement*, March 2020.

⁹ AER, 'Part 23 (Access to non-scheme pipelines) exemptions', web page, available at: <https://www.aer.gov.au/networks-pipelines/non-scheme-pipelines/part-23-access-to-non-scheme-pipelines-exemptions>.

¹⁰ AER, *Final access determination—Tasmanian Gas Pipeline*, April 2018.

service)—such as firm haulage—for the duration of the access arrangement. That reference tariff can increase only to cover inflation, and provides a basis for access seekers to negotiate prices to other services. If a dispute arises, a frustrated access seeker can apply to the AER to determine a tariff and other conditions of access.

The Australian Energy Market Commission (AEMC) in March 2019 implemented new rules to improve information disclosure, support more effective negotiations, and improve access to covered pipelines. The new rules are designed to help gas pipeline users negotiate lower prices and better deals.¹¹ They do so by:

- setting out a process for determining which services will have reference tariffs set by the AER
- clarifying how the AER calculates efficient costs
- strengthening reporting obligations to support more balanced negotiations
- giving stakeholders more input into AER decisions
- setting a clear trigger for pipeline users to seek arbitration if negotiations fail.

Most of these provisions commenced in March 2019.

5.4.2 Incentive schemes

The National Gas Rules allow scope for gas pipeline businesses to earn bonus revenue by outperforming efficiency targets (and imposes penalties for underperformance). An efficiency carryover mechanism allows businesses to retain, for up to six years, any efficiency savings in managing their operating costs. In the longer term, pipeline businesses must share efficiency gains with their customers, by passing on around 70 per cent of the gains through lower access prices. The mechanism is similar to the efficiency benefit sharing scheme (EBSS) in electricity (box 3.5), but is written into each business’s access arrangement rather than being articulated in a general guideline.

A number of gas distributors proposed a capital expenditure sharing scheme (CESS) in their latest access arrangement proposals, including Jemena (NSW) for its 2020–25 access arrangement. The gas rules do not mandate these schemes, but allow the AER to approve the use of such a scheme to incentivise pipeline businesses to efficiently maintain and operate their networks.

The CESS for gas pipelines operates in a similar way to the CESS for electricity networks (box 3.4). It allows

¹¹ AEMC, National Gas Amendment (Regulation of Covered Pipelines) Rule 2019, 14 March 2019.

a pipeline business to earn a bonus by keeping new investment spending below forecast levels (and penalties apply if the business invests above target). In later access arrangements, the business must pass on around 70 per cent of savings to customers as lower pipeline charges.

To mitigate the risk of encouraging pipeline businesses to inflate investment forecasts, the AER scrutinises whether proposed investments are efficient. The CESS design ensures deferred expenditure does not attract rewards, so businesses are not incentivised to defer critical investment needed for safe and reliable network operation. A network health index ensures rewards depend on the pipeline business maintaining current service standards.

The Victorian gas distributors were the first to implement the CESS scheme, as part of their 2018–22 access arrangements. To date, no gas transmission business has sought to participate in the scheme.

Other incentives applying to electricity networks—on service performance and demand management innovations—are not available to gas pipeline businesses. The Victorian gas distributors sought the introduction of a network innovation scheme in 2018–22. But the AER rejected the scheme, arguing the current framework provides sufficient incentives for innovation, particularly with the addition of the CESS scheme.¹²

5.4.3 Timelines and process

After a gas pipeline business submits an access arrangement proposal, the AER has six months (plus optional stop-the-clock time at certain stages) to make a final decision on how much revenue the business can recover from its customers (figure 5.2). The assessment period can be extended by up to two months, but with a maximum of 13 months to render a decision.

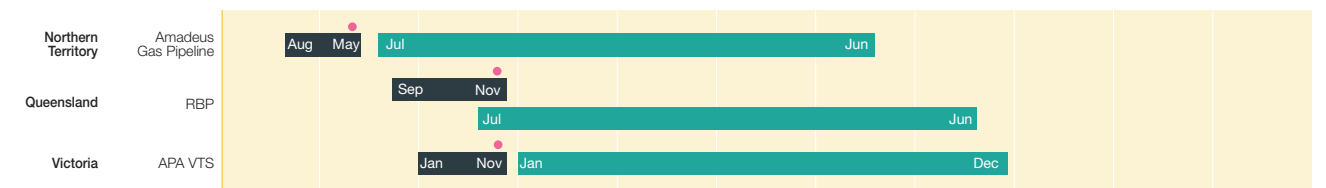
The AER consults with gas pipeline customers and other stakeholders during the process. As part of this consultation, the AER publishes a draft decision, on which it seeks stakeholder input to inform its final decision. At the completion of a review, the AER publishes an access arrangement decision that sets the reference tariff that a gas pipeline business can charge its customers. The AER annually reviews pipeline charges to ensure they are consistent with its decision.

Figure 5.2 sets out timelines for the AER’s access arrangement reviews. The AER assesses access

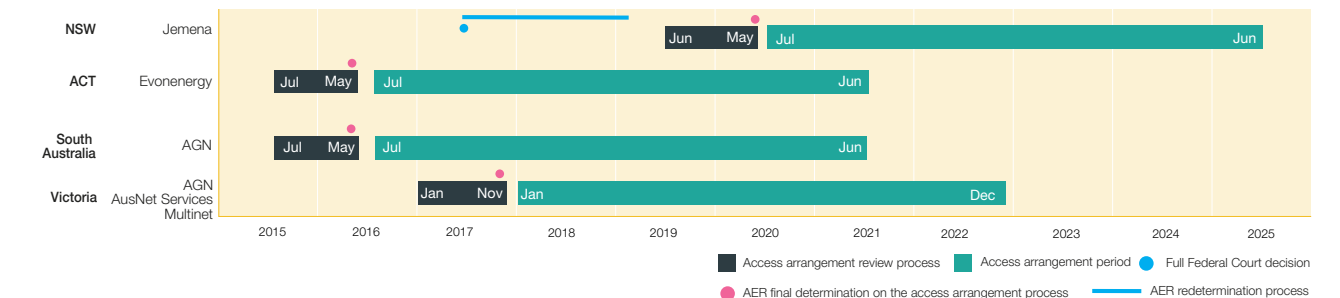
¹² AER, *AusNet Services gas access arrangement 2018–2022, Draft decision, Attachment 14—other incentive schemes*, July 2017.

Figure 5.2
AER decision timelines—full regulation gas pipelines

Transmission



Distribution



AGN, Australian Gas Networks; RBP, Roma to Brisbane Pipeline; VTS, Victorian Transmission System.
Note: Times are subject to variation. For the latest information, please check www.aer.gov.au/networks-pipelines/determinations-access-arrangements.
Source: AER.

arrangements on a rolling cycle, with staggered review timing to avoid bunching. The (typically) five year review cycle helps create a stable investment environment but also risks locking in inaccurate forecasts.

Countering this risk, the gas rules include ways of dealing with some uncertainties. The AER can approve cost pass-throughs if a significant event (such as a regulatory change or natural disaster) imposes significant costs that were not forecast. A gas network may also approach the AER to pre-approve a contingent investment project whose need is uncertain at the time of the reset. A pre-approval allows the network business to roll the project into the pipeline’s asset base in the forthcoming access arrangement.

5.4.4 Customer engagement

As for electricity, an important focus of gas pipeline regulation is how constructively a business engages with its customers in developing an access arrangement proposal. While not mandated in the gas rules, evidence of real constructive engagement can give the AER confidence that

the business is genuinely committed to meeting customer needs and preferences. It can lay the foundation for the AER to accept elements of an access arrangement proposal, including capital and operating expenditure forecasts.

Before submitting its 2020–25 revenue proposal, Jemena (NSW) undertook extensive customer engagement which was well received by stakeholders. Jemena engaged with residential and business customers through forums, study circles, focus groups, data workshops, consumer surveys and consultation drafts.

The AER’s Consumer Challenge Panel (CCP) found Jemena demonstrated a genuine commitment to engagement, noting its proposal identified and addressed different views, and demonstrated how engagement shaped its proposal.¹³ Jemena was awarded the Energy Networks Australia and Energy Consumers Australia 2019 Consumer Engagement Award for its Gas Networks Deliberative Forum in NSW. Retailers generally commented favourably on Jemena’s

¹³ CCP19, *Submission to the AER on JGN’s regulatory proposal*, August 2019, pp. 5–8.

engagement process, but noted it did not resolve some issues with Jemena's Reference Service Agreement.¹⁴

Customer engagement is more advanced in gas distribution than in transmission. APA Group chose not to undertake stakeholder engagement in developing its 2017–22 access arrangement proposal for the Roma to Brisbane Pipeline. Similarly, the AER's Consumer Challenge Panel was critical of APA Group's commitment to customer engagement on its 2018–22 access arrangement for the Victorian Transmission System.¹⁵ APA Group described the AER's and the Consumer Challenge Panel's consultation expectations as 'unrealistic' and 'ultimately ... a waste of time and resources'.¹⁶

5.4.5 Recent AER access arrangement decisions

The AER published in June 2020 its final decision on Jemena's access arrangement proposal for its NSW gas distribution network. This access arrangement will take effect on 1 July 2020 and remain in place until 30 June 2025.

The final decision will lower distribution charges in retail gas bills in NSW. Among residential customers, distribution charges account for around 41 per cent of a typical customer's bill in coastal areas, and 33 per cent in regional areas.

The key driver of Jemena's lower forecast revenue for 2020–25 compared with the previous period was a lower return on capital (reflecting continued downward movements in the rate of return). The decision also factored in Jemena returning \$169 million to its customers that was over-recovered in the previous access arrangement period.¹⁷ The remittal outcome is a key driver of the estimated retail gas bill reduction over the 2020–25 period, particularly in the first year (2020–21) with estimated bill reductions of 6 per cent for regional gas customers and 8.3 per cent for coastal gas customers.

The AER accepted the majority of Jemena's proposed capital expenditure, except for expenditure relating to customer connections, and meter and mains replacements. It did not accept Jemena's proposal to approve costs and benefits for new capital assets using an investment horizon to 2070, noting the uncertainties beyond a 30 year horizon. But the AER did approve an increase in operating expenditure on corporate overheads and pipeline inspection costs, and forecast increases in unaccounted for gas.

The full effect of the COVID-19 pandemic on Jemena was uncertain at the time of the AER's determination. The AER based its decision on information and forecasts that could reasonably be made at the time, but it recognised there are uncertainties around how COVID-19 will affect Jemena's operations and costs. If it becomes clear that the impacts of COVID-19 are substantial, then the AER will consider implementing processes to re-open existing access arrangements.

5.4.6 Legal reviews

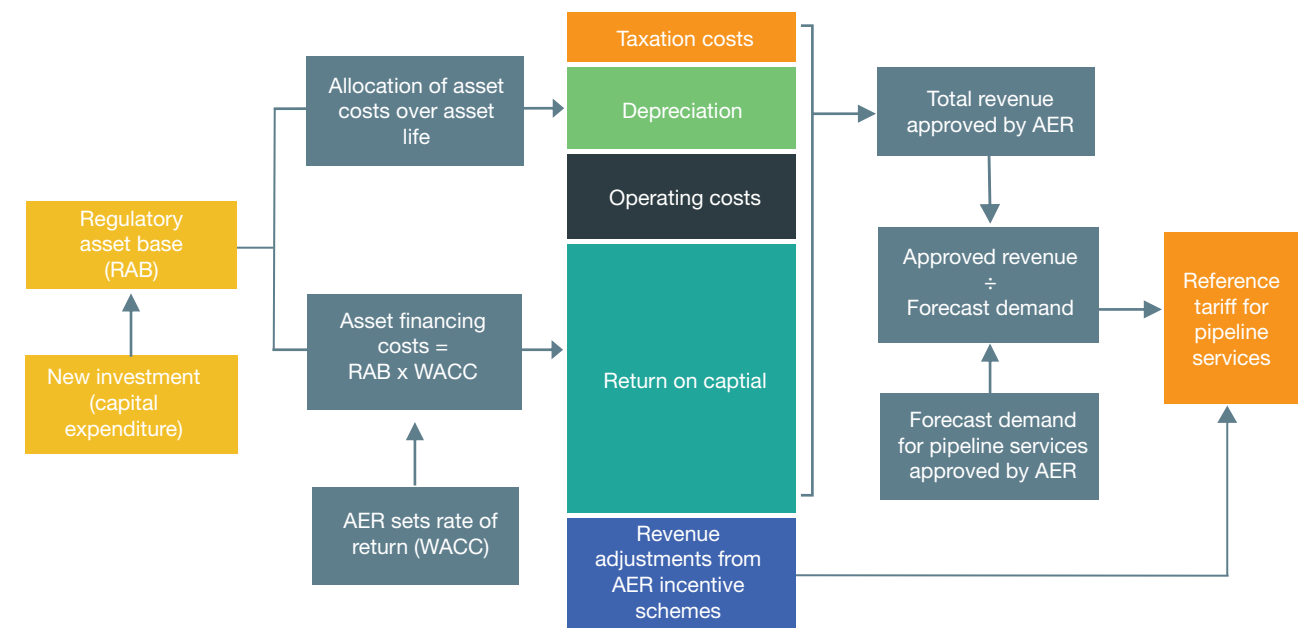
An affected party can file an application with the Federal Court for judicial review of an AER access arrangement decision. Until 2017 a party could also apply to the Australian Competition Tribunal for a limited merits review of an AER decision, and then appeal the Tribunal's decision to the Full Federal Court. The Australian Government abolished this avenue of appeal in October 2017.

After a long running appeal, the Full Federal Court in July 2017 ordered the AER to remake elements of its access arrangement decision for Jemena (NSW). The AER's remade decision published in February 2019 approved \$17.6 million of revenue additional to what it approved in 2015. However, adjustments from interim arrangements for the network will result in Jemena returning \$169 million to consumers in the 2020–25 access arrangement period (box 3.2 and section 5.4.5).¹⁸

5.5 The building blocks of gas pipeline revenue

In assessing a gas pipeline business's revenue needs, the AER breaks up its costs into 'building blocks'. Specifically, the AER forecasts how much revenue that the business is likely to need to cover four key cost components.

Figure 5.3
How gas pipeline revenue and charges are set



Note: Revenue adjustments from incentive schemes encourage pipeline businesses to manage their operating and capital expenditure efficiently, and to innovate.
Source: AER.

These components are:

- efficient operating and maintenance costs
- commercial returns to shareholders and investors that fund its operations
- asset depreciation costs
- forecast taxation costs.

It also makes adjustments for incentive payments (figure 5.3).

Gas pipeline businesses are entitled to earn revenue to cover their efficient costs each year. Pipelines have a long life, so the cost of new investment is recovered over the economic life of the asset, which may be several decades. The amount recovered each year is called depreciation, and it covers the lost value of assets through wear and tear, and technical obsolescence.

The shareholders and lenders that fund those assets must be paid a commercial return on their investment each year. Those returns are forecast to absorb 52 per cent of transmission revenues, and 38 per cent of distribution revenues in the current access periods.

The returns are calculated by multiplying:

- the value of the network's assets calculated as the regulatory asset base (RAB), which is adjusted each year for new investment, less asset disposals and depreciation, by
- the rate of return paid to investors that fund those assets, through either equity ownership or debt. The AER sets the rate of return, also called the weighted average cost of capital (WACC).

Operating and maintenance costs are forecast to absorb 32 per cent of transmission revenues, and 39 per cent of distribution revenues in the current access periods. Overheads, taxation and other costs account for the remainder of a pipeline revenues. Sections 5.6–5.8 examine each component in more detail.

Gas pipeline businesses have scope to earn *additional* revenue through regulatory incentives that encourage the efficient management of operating and capital expenditure programs (section 5.4.2).

¹⁴ Origin, *RE: AER draft decision and revised regulatory proposal for Jemena Gas Networks (NSW) access arrangement 2020–25*, February 2020, p. 1; EnergyAustralia, *Jemena Gas Networks (NSW) access arrangement 2020–25*, February 2020, pp. 1–2; AGL, *Jemena Gas Networks (NSW) access arrangement 2020–25*, February 2020, p. 2.

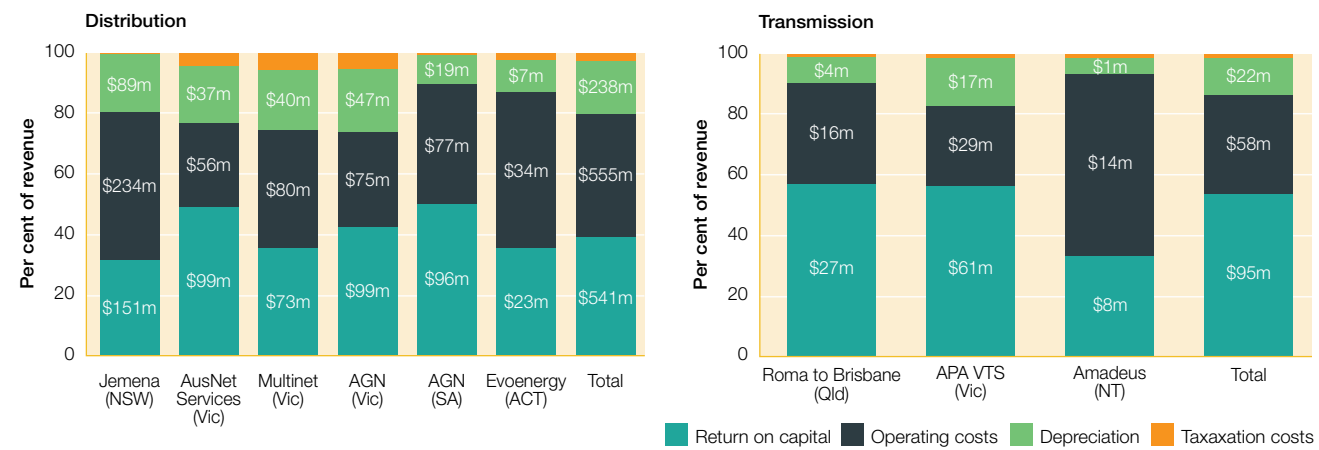
¹⁵ CCP11, Response to the AER's draft decisions and the revised proposal from APA VTS for a revenue reset/access arrangement for the period 2018 to 2022, September 2017, p. 4.

¹⁶ APA, *Victorian Transmission System access arrangement revised proposal, Submission response to draft decision*, August 2017, p. 8.

¹⁷ Jemena's 2015–20 access arrangement was subject to extensive legal appeals and interim arrangements (section 3.5.2). See also: AER, *State of the energy market 2018*, section 5.4.7, 2018; AER, *Final decision, Jemena Gas Networks 2015–20 access arrangement*, February 2019.

¹⁸ AER, *Final decision, Jemena Gas Networks (NSW) Ltd 2015–20 access arrangement*, February 2019.

Figure 5.4
Composition of average annual gas pipeline revenues



AGN, Australian Gas Networks; VTS, Victorian Transmission System.

Note: Network businesses also receive bonuses or penalties that impact on annual network revenues. These bonuses/penalties are not material and are not considered in this chart.

Source: Post tax revenue modeling used in AER determination process.

Figure 5.4 illustrates the composition of pipeline revenues in recent gas transmission and distribution decisions.

5.6 Gas pipeline revenues

Full regulation gas pipelines (table 5.1) are forecast to earn around \$7.1 billion in their current access arrangement periods—14 per cent less than forecast in previous periods:

- Full regulation transmission pipelines are forecast to earn around \$887 million¹⁹ in current access arrangement periods—8 per cent less than forecast in previous periods.
- Full regulation distribution networks are forecast to earn around \$6.2 billion in current access arrangement periods—15 per cent less than forecast in previous periods.

The previous round of access arrangement decisions were made at a time of increased pipeline investment in response to ageing assets and forecasts of rising energy demand. Network businesses also had higher financing costs due to instability in global financial markets. But these cost pressures have since eased. Lower financing costs and weaker domestic gas demand in recent years—caused by

significantly higher gas prices—reduced forecast revenue needs for most pipeline businesses.

Further, legislation enacted in November 2018 provides for the AER to make its rate of return determinations binding. The AER released its first Rate of Return Instrument (RRI) in December 2018, setting out how it determines the rate of return on capital in access arrangement determinations.²⁰

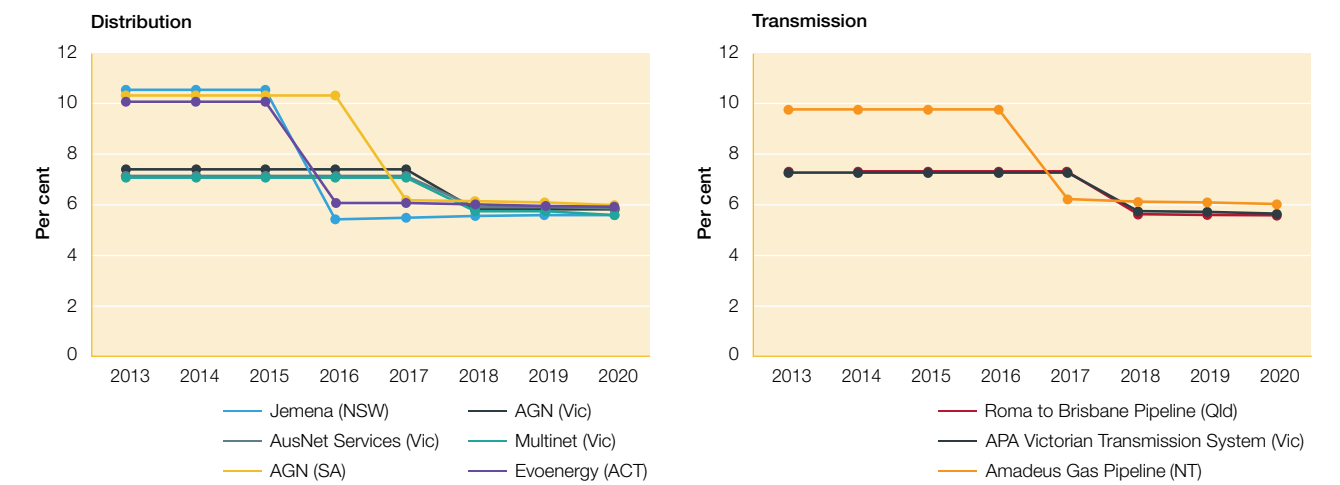
These changes reduced the average rate of return in the AER's five access arrangement decisions made in 2017 to under 6 per cent, and its sole access arrangement decision made in 2020 to 4.49 per cent (to be applied to Jemena (NSW) in 2020–21, compared with over 10 per cent in decisions made from 2008 to 2010 (figure 5.5). This reduction translates to significantly lower network revenues and gas pipeline charges.

While pipeline revenues are generally falling, the outcomes vary between network businesses. In gas transmission, revenues are forecast to fall in the current access arrangement period by 19 per cent for the Roma to Brisbane Pipeline (Queensland) and 30 per cent for the Amadeus Pipeline (Northern Territory). The Victorian Transmission System, however, is forecast to increase

²⁰ The 2018 RRI specifies the return on debt as a formula, using the trailing average portfolio approach. Network businesses not already applying this method must transition to it over a 10 year period.

¹⁹ Excluding revenue adjustments valued at around \$19.7 million.

Figure 5.5
Rates of return for gas pipeline networks



AGN, Australian Gas Networks.

Note: Rate of return = nominal vanilla weighted average cost of capital (WACC). Victorian pipeline businesses report on a calendar year basis (i.e. year ending 31 December). All other pipeline businesses report on a financial year basis (i.e. year ending 30 June). The calendar years shown in the charts reflect the later of the two relevant years for non-Victorian pipeline businesses (e.g. 2017–18 is shown as 2018).

Source: AER decisions on gas pipeline access arrangements; AER decision following the remittal by the Australian Competition Tribunal and Full Federal Court.

revenue by 5 per cent, reflecting an increased capital base following new investment in 2013–17 by its owner (APA Group).

In gas distribution, revenues are forecast to fall by 8–24 per cent in the current access arrangement periods for five of the six networks for which the AER sets prices. Relatively stable or rising revenue for the Victorian networks reflects their higher operating and capital expenditure costs associated with new customer connections, as in new housing estates (figure 5.6).

5.7 Gas pipeline investment

Investment requirements differ between the gas transmission and distribution sectors:

- Gas *transmission* investment typically involves large, lumpy capital projects to expand existing pipelines (through compression, looping or extension) or construct new infrastructure. Additionally, some transmission pipelines have been re-engineered for bi-directional flows.
- Gas *distribution* investment mainly comprises augmentation (expansion) of existing systems to cope with new customer connections, as in new housing estate developments. Older networks also require replacement programs for deteriorating infrastructure.

For pipelines under full economic regulation (table 5.1), the AER assesses whether investments are prudent and efficient, based on criteria in the National Gas Rules.

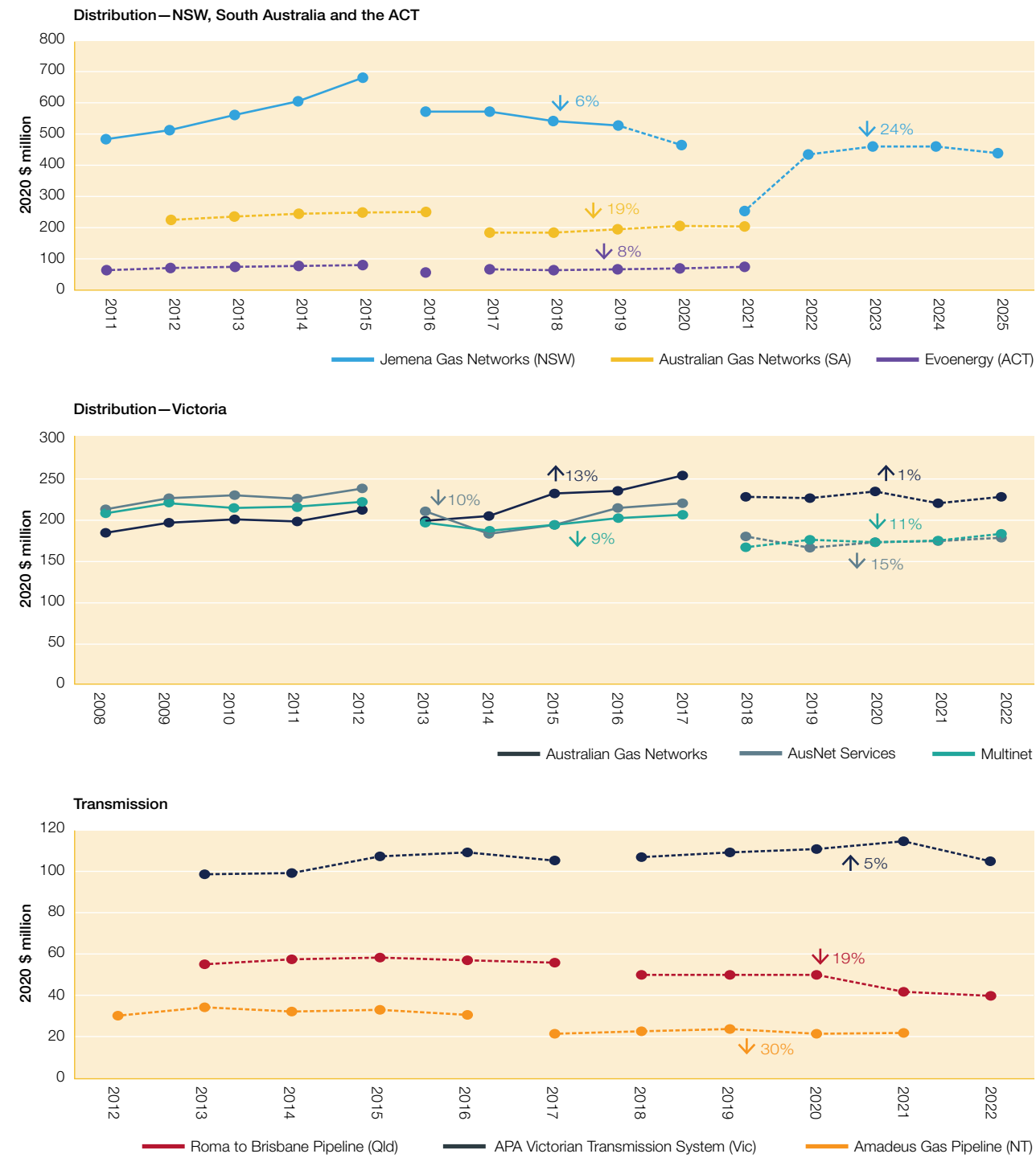
5.7.1 Recent investment

Full regulation transmission pipelines are forecast to invest a total of \$335 million in current access arrangement periods, 40 per cent less than the \$554 million invested in the previous periods (figure 5.7). Forecast investment is lower than in the previous period for all pipelines:

- Investment in the Roma to Brisbane Pipeline is forecast to fall by 9 per cent in the current period following the completion of a major augmentation program.
- Investment requirements are forecast to fall in the Northern Territory by 62 per cent in the current period following the completion of an integrity works program.
- Investment in the Victorian Transmission System is forecast to fall by 42 per cent. This follows a period of significant overspending against forecast to implement systems to meet new gas market rules, and to augment the Victorian Northern Interconnect Expansion to meet increased demand.²¹

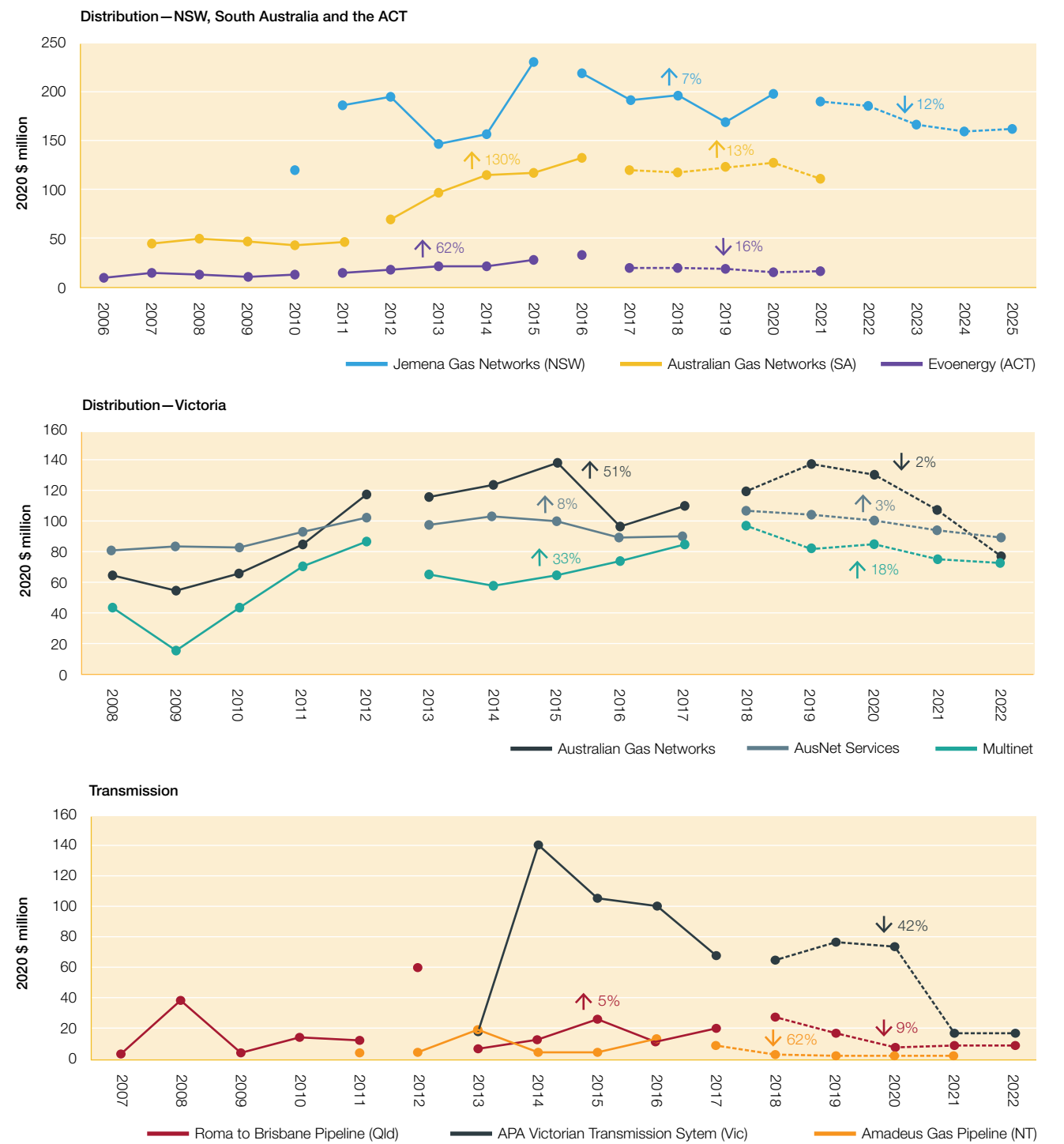
²¹ AER, *Draft decision, APA VTS Australia Gas access arrangement 2018 to 2022*, July 2017, p. 8.

Figure 5.6
Gas pipeline revenues



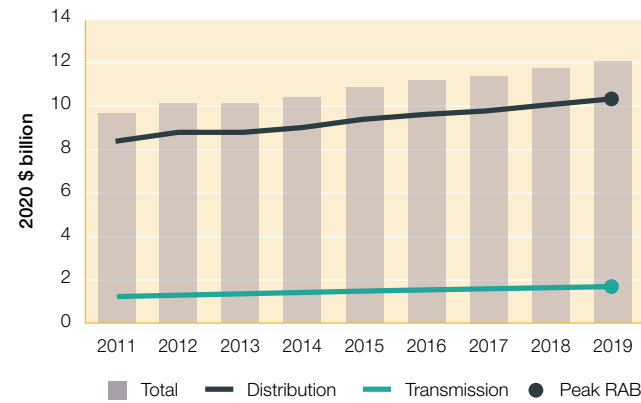
Note: Actual revenue is shown as a solid line; forecast revenue is shown as a broken line. Percentages represent the change between periods. Forecasting updates may result in some outcomes varying from those previously reported. Victorian pipeline businesses report on a calendar year basis (i.e. year ending 31 December). All other pipeline businesses report on a financial year basis (i.e. year ending 30 June). The calendar years shown in the charts reflect the later of the two relevant years for non-Victorian pipeline businesses (e.g. 2017–18 is shown as 2018).
Source: AER.

Figure 5.7
Gas pipeline investment



Note: Actual capital expenditure is shown as a solid line; forecast capital expenditure is shown as a broken line. Percentages represent the change between periods. Forecasting updates may result in some outcomes varying from those previously reported. Victorian pipeline businesses report on a calendar year basis (i.e. year ending 31 December). All other pipeline businesses report on a financial year basis (i.e. year ending 30 June). The calendar years shown in the charts reflect the later of the two relevant years for non-Victorian pipeline businesses (e.g. 2017–18 is shown as 2018).
Source: AER.

Figure 5.8
Gas pipeline regulatory asset base



Note: Victorian pipeline businesses report on a calendar year basis (i.e. year ending 31 December). All other pipeline businesses report on a financial year basis (i.e. year ending 30 June). The calendar years shown in the charts reflect the later of the two relevant years for non-Victorian pipeline businesses (e.g. 2017–18 is shown as 2018).

Source: AER modeling.

Investment in full regulation distribution networks in eastern Australia is forecast at around \$3.0 billion in current access arrangement periods, comparable to the amount invested in the previous periods:

- The AER in 2020 approved a 12 per cent reduction in investment in Jemena's (NSW) network in 2020–25, compared with what Jemena invested in the previous period.
- Investment in Victoria's Australian Gas Networks and AusNet Services distribution networks over the 2018 to 2022 access period is steady (a 2 per cent decrease and 3 per cent increase respectively). Multinet is forecast to increase investment by 18 per cent.

- The AER approved a 13 per cent rise in investment in South Australia's Australian Gas Networks in 2017–21 to fund a major mains replacement project.
- The AER approved 16 per cent less investment for the ACT's Evoenergy network in 2017–21, compared with the previous period, after finding a prudent operator would not undertake some augmentation proposals.

5.7.2 Regulatory asset base

Capital investment approved by the AER is added to a pipeline's RAB, on which future returns are earned. The RAB for regulated gas pipelines continues to rise, reaching \$10.3 billion for distribution networks and \$1.7 billion for transmission pipelines in 2019 (figure 5.8).

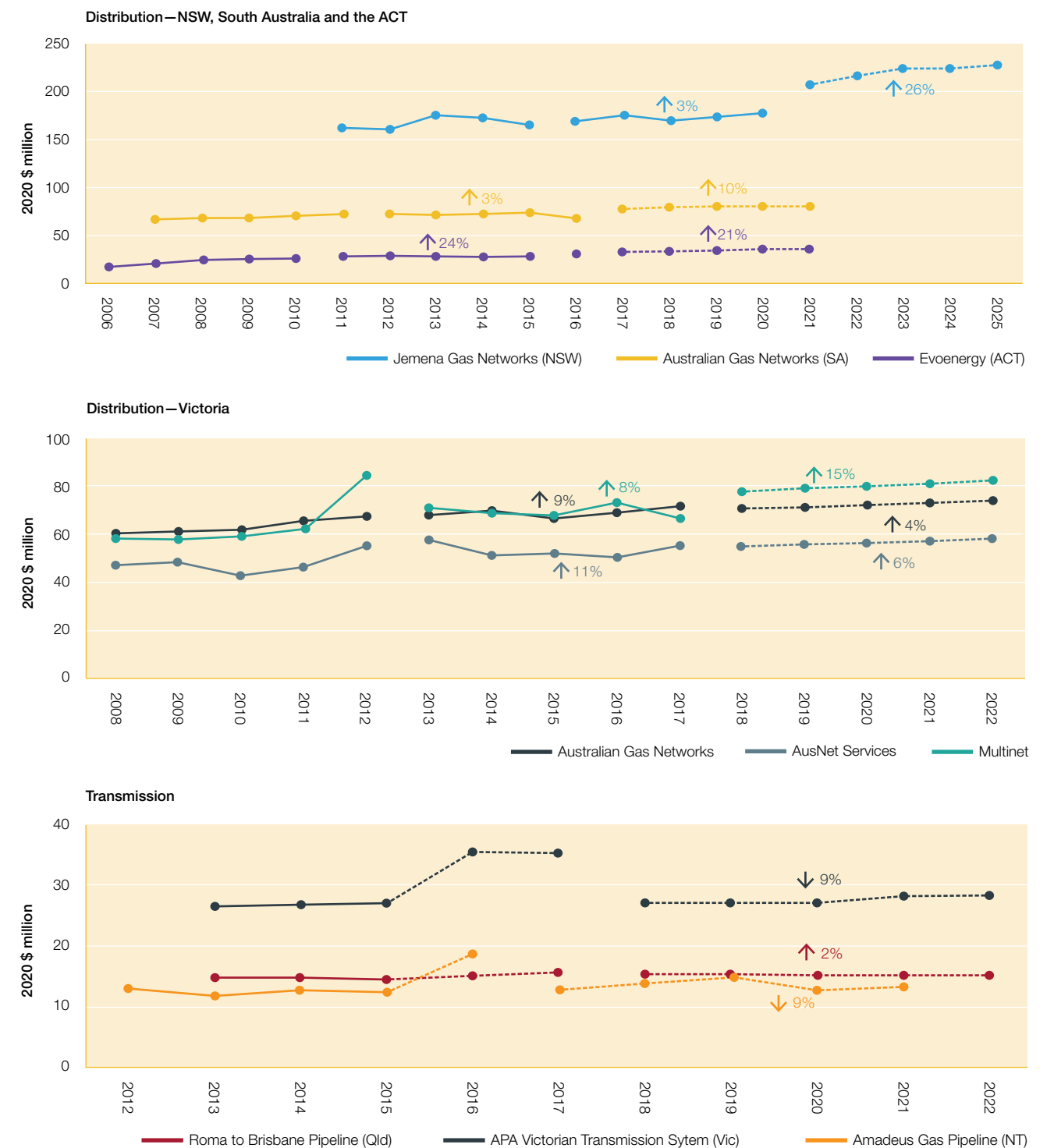
5.8 Gas pipeline operating costs

The AER's assessment of a gas network's efficient operating and maintenance costs accounts for cost drivers such as forecast customer growth, expected productivity improvements, changes in labour and materials costs, and changes in the regulatory environment.

Gas transmission networks are forecast to spend around \$281 million on operating expenses in the current access arrangement periods—4 per cent less than the \$294 million forecast in previous periods.

Gas distribution networks are forecast to spend around \$2.7 billion on operating expenses in the current access arrangement periods—16 per cent more than the \$2.3 billion forecast in previous periods. The AER in 2020 approved a 26 per cent increase in Jemena's operating expenditure to cover higher corporate overheads and pipeline inspection costs in 2020–25, and expected increases in unaccounted for gas relative to 2015–20 (figure 5.9).

Figure 5.9
Gas pipeline operating costs



Note: Actual operating expenditure is shown as a solid line; forecast operating expenditure is shown as a broken line. Percentages represent the change between periods. Forecasting updates may result in some outcomes varying from those previously reported. Victorian pipeline businesses report on a calendar year basis (i.e. year ending 31 December). All other pipeline businesses report on a financial year basis (i.e. year ending 30 June). The calendar years shown in the charts reflect the later of the two relevant years for non-Victorian pipeline businesses (e.g. 2017–18 is shown as 2018).

Source: AER.