Gas transmission network performance supplementary 2024

December 2024

AUSTRALIAN ENERGY REGULATOR

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1 Overview

1.1 Scope

This supplementary supports our 2024 Electricity and gas network performance report.[1] It presents analysis of the performance of 3 gas transmission pipelines that report data later than the networks analysed in the prior report.

The 3 gas transmission pipelines are:

- The **Amadeus Gas Pipeline** (AGP), which operates in the Northern Territory and transports gas north to Darwin and south towards Alice Springs. It sources gas from the Blacktip gas fields in the Bonaparte Basin and from the Palm Valley and Mereenie gas fields in the Amadeus Basin. This gas is predominantly used for electricity generation.
- The **Roma Brisbane Pipeline** (RBP), which operates in Queensland and sources gas from the Bowen–Surat Basin via the Wallumbilla supply hub, Kogan North gas plant and Peat lateral pipeline. RBP transports gas between the Wallumbilla supply hub, Brisbane, and regional centres along its route. This gas is predominantly used for electricity generation and, historically, as a feedstock in industrial activity but is also supplied to eastbound customers and westbound for trading.[2]
- The **Victorian Transmission System** (VTS), which operates in Victoria and supplies gas to industrial and electricity generation customers and to Victorian gas distribution network service providers (DNSPs) that in turn supply residential and commercial customers. VTS also transports gas to New South Wales (NSW) via the Moomba Sydney Pipeline and to South Australia via the SEA Gas Pipeline. VTS primarily sources gas from offshore gas fields in the Gippsland, Bass and Otway basins. VTS also transports gas from the Dandenong liquefied natural gas (LNG) storage facility, Iona underground storage and Cooper Basin.

We regulate these transmission pipelines as scheme pipelines by specifying prices and reference services that must be provided to customers in 5-yearly access arrangements[3]. Scheme Pipelines account for 24% of total transmission pipeline capacity in the jurisdictions we regulate.[4] We assess the need for gas pipelines to be designated as scheme pipelines and invite members of the public to request a review of whether a pipeline should be considered as a scheme pipeline[5]. Our regulation of gas transmission pipelines seeks to encourage their efficient operation in the long-term interest of consumers.

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1 AER, *2024 Electricity and gas network performance report*, September 2024.

2 With the 2023 closure of Incitec Pivot's manufacturing plant at Port of Brisbane, the RBP no longer provides gas as a feedstock for industrial activity.

3 AER, *Determinations and access arrangements*.

4 The AER regulates gas transmission scheme pipelines in all Australian jurisdictions except for Western Australia.

5 AER, *Gas pipeline regulatory determination role*.

1.2 Reference services and tariffs

AGP and RBP are regulated under weighted average price cap tariff variation mechanisms. This form of regulation provides for negotiations to occur between the transmission pipeline operator and transmission capacity users, known as “shippers”.

For AGP and RBP, approved reference services and tariffs are reference points for those negotiations. Actual services and tariffs may vary from the reference services and tariffs we approve. This is expected and consistent with the regulatory framework.

While we expect negotiations may produce services and tariffs that vary from the reference services and tariffs we approve, the approved reference service must be available to shippers at no more than the approved reference tariff. The network service provider may charge less for a reference service but must not charge more than the approved reference tariff.

For VTS, reference services and tariffs are tightly defined with location-specific tariffs derived from a relatively complex and highly cost reflective tariff model. In this case, the reference services and tariffs we determine are the tariffs paid by shippers.[6]

1.3 Data used in this supplementary

This supplementary analyses data up to the end of 2023 regulatory year, which is the period between:

- 1 July 2022 and 30 June 2023 for AGP and RBP
- 1 January 2023 and 31 December 2023 for VTS.

All references to specific years in this supplementary refer to regulatory years (that is, financial years for AGP and RBP, and calendar years for VTS). All financial values in this supplementary are adjusted for inflation and provided in 30 June 2023 real dollar terms.

Data and data sources used in developing this supplementary are provided in detail in the Microsoft Excel datasets published alongside this supplementary.

This supplementary and the accompanying datasets exclude confidential data. These omissions ensure the confidentiality of commercially sensitive information is maintained while still providing a comprehensive analysis of the performance of the gas transmission pipelines.

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6 For the gas distribution businesses we regulate, the reference services and tariffs we determine are the services and tariffs offered to gas retailers. Distributors may charge less than the approved tariffs but they may not charge more. Typically, we do not expect gas distributors to negotiate services or tariffs with gas retailers. Exceptions relate to services we have determined not to regulate, or to regulate in ways that allow negotiation to occur.

1.4 Key findings

Our analysis of the performance of the gas transmission pipelines found that in 2023:

- **Demand** for gas decreased by 18% compared to 2022. The decrease in gas demand was driven by warmer winter weather in Victoria, decommissioning of a large customer for RBP and supply problems from the Blacktip field for AGP.
- **Revenue** for VTS declined by 16% and was 1.5% above forecast levels. Lower revenue in 2023 was driven by lower demand.
- **Operational expenditure** was 29% above forecast. In general, this has the effect of decreasing network profitability and reflects lower efficiency gains will be shared with consumers in future years. In some cases, increased operational expenditure is beneficial if it is used to increase revenue by providing additional services to customers.
- VTS completed the Western Outer Ring Main (WORM), which provides additional supply security and network efficiency. The WORM increased VTS's **network capacity** by 2% in 2023 and resulted in **capital expenditure** 37% above forecast.
- **Return on assets** for VTS decreased to 1.8% and was 0.8 percentage points lower than the allowance of 2.6%.
- **Return on regulated equity** decreased to 11.6% and was 7.9 percentage points higher than the allowance of 3.7%. Pipeline businesses have increased their return on regulated equity by decreasing the amount of equity they hold (by increasing debt) and by earning more revenue than forecast. Higher inflation than forecast has also contributed to higher returns on regulated equity.

2 Network characteristics

2.1 Gas demand

Transmission pipeline demand fell in 2023, dropping 18% below 2022 levels (Figure 1). The overall gas demand was slightly lower than our forecasts set out in approved access arrangements. RBP's gas demand exceeded our forecast by 38%, while AGP's demand was 46% below forecast. VTS' demand was moderately lower at 4% below our forecast.

RBP's gas demand fell by 7%, however it still exceeded forecast by 38%. Demand was higher than forecast due the pipeline being used to make up for a faster than expected decline in Bass Strait supply and supply constraints from the Northern Territory along the Northern Gas Pipeline.

AGP's gas demand fell by 27%, primarily due to reduced gas supply from the Blacktip field.

VTS's gas demand fell by 19%, underpinned by winter in 2023 being the warmest on record in Australia, and the second warmest in Victoria[7]. Warmer temperatures resulted in lower demand for gas for residential heating, which accounts for a significant proportion of VTS' demand. Lower demand from gas-powered generation plants due to coal plants being back in service may have been a secondary reason for lower demand.

Government policies, such as the Victorian Government's gas substitution roadmap[8], are expected to decrease (or slow the increase in) residential gas demand. The short-term trajectory is less clear for other users of gas such as industrial, commercial and power generation customers. Given the ongoing transition of Australia's energy system to renewable energy, we will continue to monitor changes in demand for the gas transmission pipelines and ensure the regulatory regime is fit for purpose.[9]

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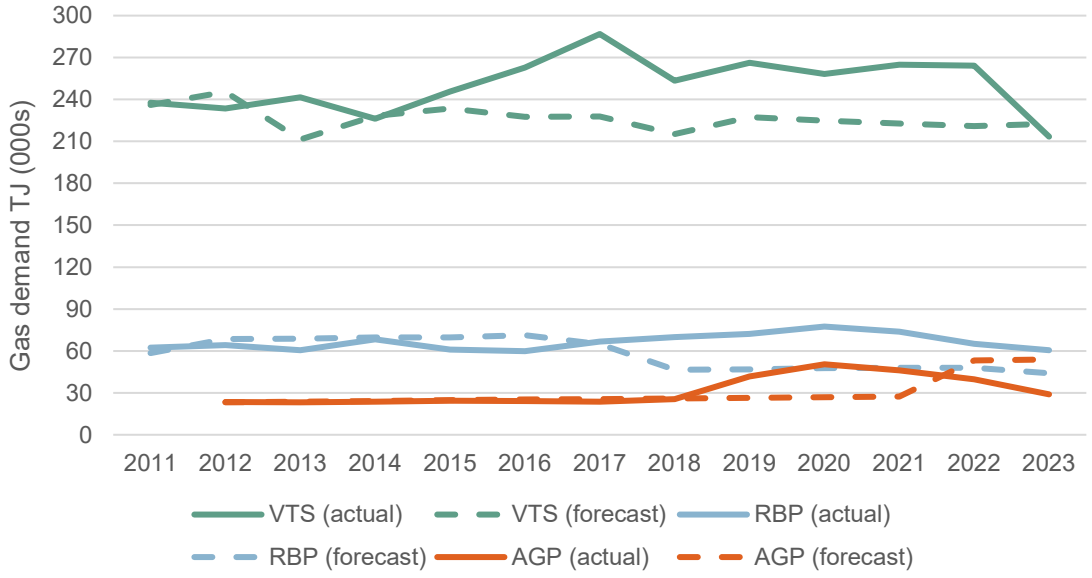
7 Bureau of Meteorology, *Australia's Climate in 2023*, 8 February 2024.

8 Victorian Department of Transport and Planning, *Victoria's gas substitution roadmap*, 8 January 2024.

9 AER, *Regulating gas pipelines under uncertainty*, 15 November 2021.

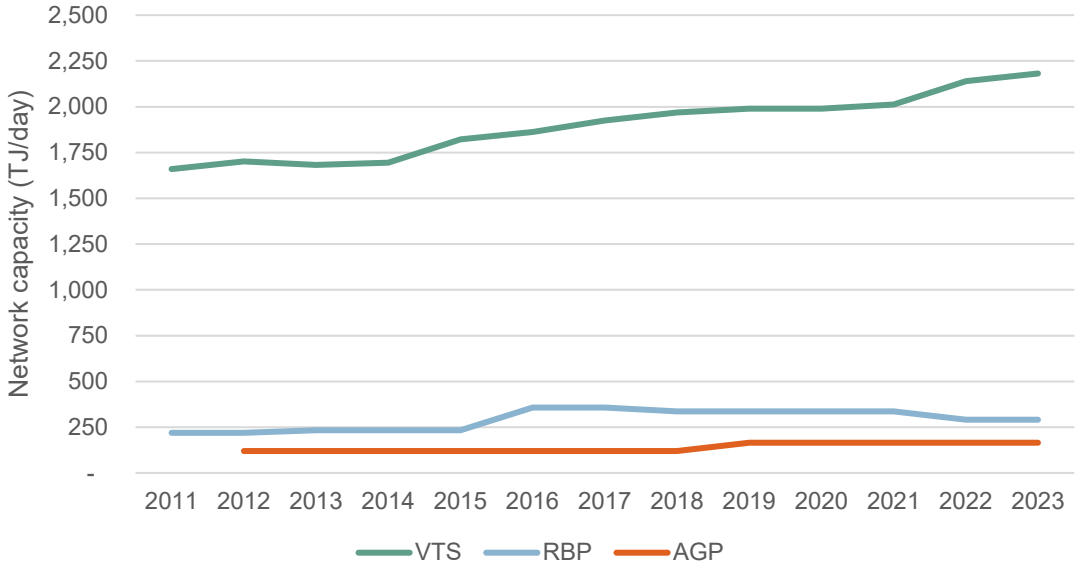
Figure 1 Demand – Gas transmission pipelines



2.2 Network capacity

In 2023 VTS's network capacity increased by 2% compared to the prior year due to the development of the WORM. The WORM is designed to improve network reliability by increasing the amount of natural gas that can be stored at Port Campbell and improve the efficiency of gas transport between east and west Victoria without having to pass through low-pressure pipelines in Melbourne. Network capacity did not change for AGP or RBP (Figure 2).

Figure 2 Network capacity – Gas transmission pipelines



The utilisation rate for gas transmission pipelines measures how much of the available capacity is being used to transport gas. In 2023, the overall utilisation of the gas transmission pipelines dropped from 41% to 32% due to a decline in gas demand and a slight increase in the gas transmission pipelines' capacity. Higher utilisation of gas transmission systems

indicates more efficient use of pipeline assets. Although pipelines are designed to accommodate peak gas demand, lower utilisation in a given year does not necessarily indicate a problem with the pipelines' performance. However, if there is a persistent decline in utilisation over time, it can be a warning sign of underlying issues which could ultimately result in negative impacts for consumers.

3 Financial outcomes

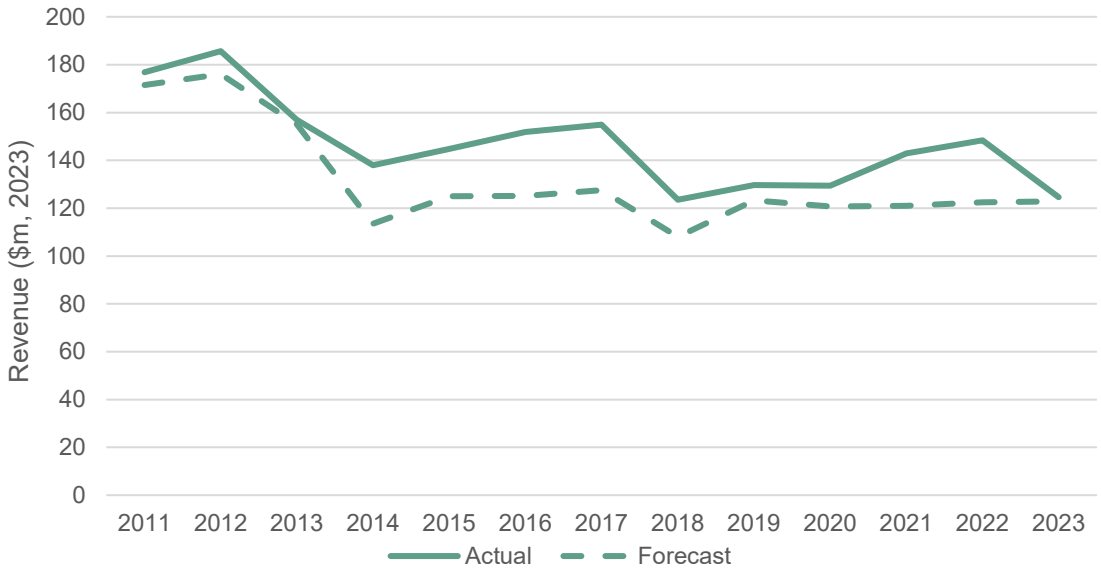
3.1 Revenue

Gas transmission pipelines generate revenue by selling capacity in their pipelines to shippers needing to transport or store gas. Some of these services are secured through long-term capacity contracts, which do not vary by throughput. Capacity can be offered through a variety of services, which can be more varied than the services provided by gas distribution networks. In our 5-yearly access arrangements we specify price caps on some of these services to limit the costs paid by users. If the gas transmission pipelines sell more services than forecast in their access arrangements, they may also earn more revenue than forecast.

The most common service provided by the gas transmission pipelines is haulage – that is, transporting gas from an injection point on the pipeline to an offtake point further along. Haulage may be offered on a guaranteed basis (i.e. firm) or an interruptible basis when capacity is available (i.e. non-firm basis). Gas can also be stored in a pipeline on a firm or non-firm basis.

In 2023, VTS earned 1.5% more revenue than forecast and saw a decline in revenue of 16% compared to the previous year (Figure 3). The decline in revenue has the same drivers as the decline in demand (section 2.1). Forecast revenue is the revenue assumed in each pipeline's access arrangement given expected demand for pipeline services. The variety of services offered by the gas transmission pipelines both through long-term contracts and other pipeline services can mean their revenue does not correlate with the total amount of gas demanded. AGP is contracted under a long-term contract for capacity, which does not vary by throughput. AGP and RBP have requested that we do not publish their revenues so as not to breach customer privacy given the small numbers of customers they serve.

Figure 3 Revenue – VTS

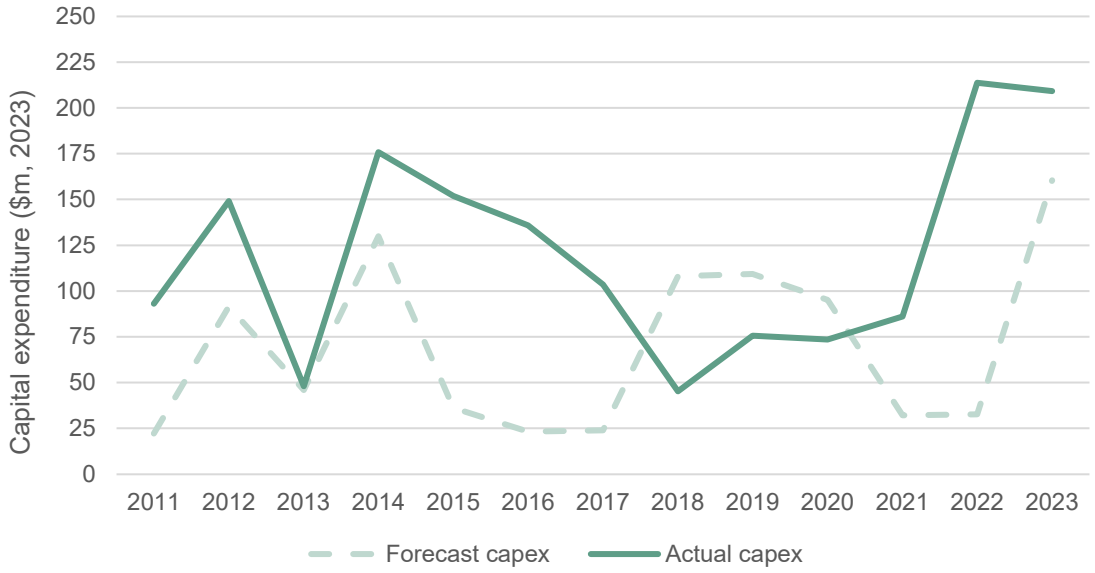


3.2 Expenditure

Expenditure consists of capital expenditure (capex) and operating expenditure (opex). Capex is primarily used for expanding pipeline capacity, while opex is typically used for day-to-day business expenditures.

The gas transmission pipelines exceeded their forecast capex by $49 million (30%) in 2023. This overspend was primarily due to expenditure on VTS's WORM project, which was $51 million above the amount determined in its access arrangement (Figure 4). If we assess this additional expenditure to be prudent and efficient (that is, “conforming capex” under the National Gas Rules), the expenditure will be added to the capital base in VTS’s next access arrangement (2028–2032).

Figure 4 Capital expenditure – Gas transmission pipelines

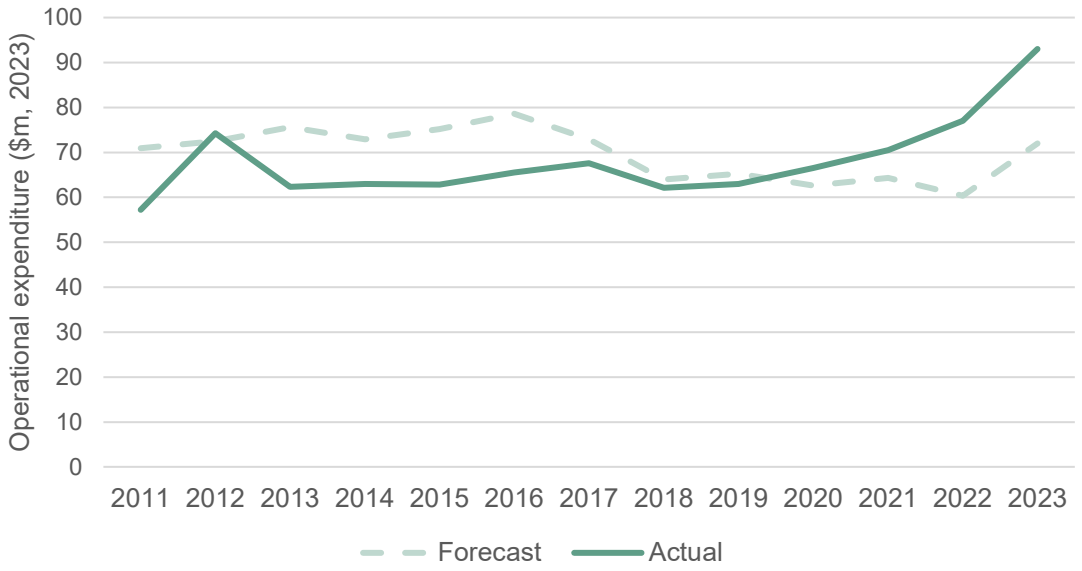


In 2023, the gas transmission pipelines overspent their opex allowance by $21 million (29%) (Figure 5) due to additional spend on physical and IT security and labour costs. Under the current regulatory period, this overspending reduces the pipelines' profits rather than being passed on to consumers.

The incentive based regulatory framework encourages pipelines to keep their opex low by allowing them to keep the savings when they spend less than forecast. Similarly, they must absorb the costs when they spend more. An efficiency carryover mechanism also rewards or penalises pipelines in future years based on their opex performance.

However, if overspending becomes recurrent rather than a one-time event, both consumers and gas transmission pipelines are worse off in the long run. Recurrent overspending can lead to higher opex forecasts in future regulatory periods, resulting in higher prices for consumers. The gas transmission pipelines also face penalties for the continued overspending in their next access arrangement. For one-time overspending, only the pipeline businesses are affected through reduced profits.

Figure 5 Operational expenditure – Gas transmission pipelines

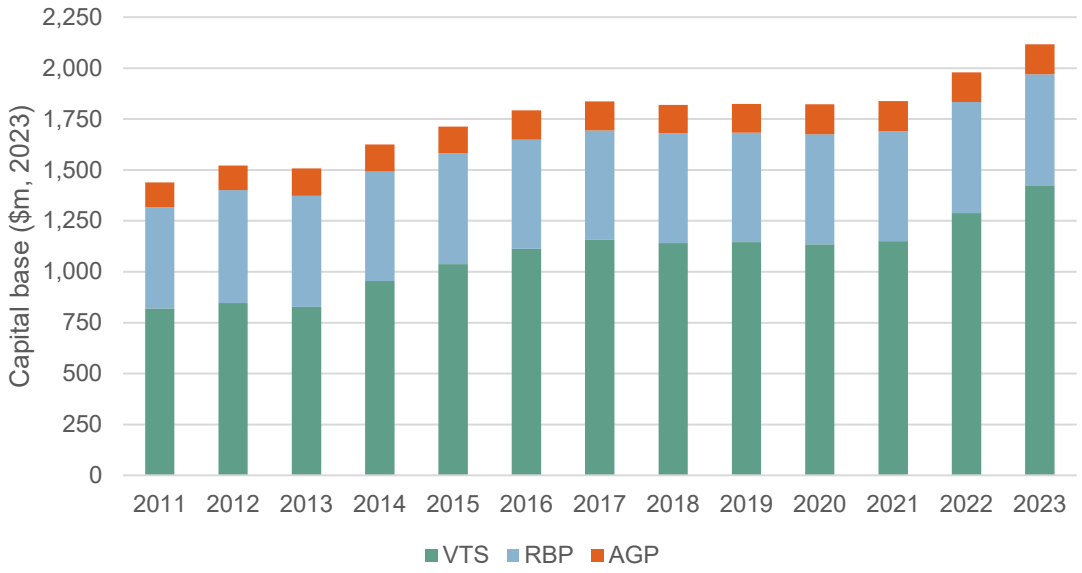


3.3 Capital base

The capital base represents the total economic value of gas transmission pipeline assets. This value increases when pipelines are replaced, network assets are upgraded, or pipeline capacity is expanded. Conversely, the capital base decreases through asset depreciation.

The closing capital base for the 3 gas transmission pipelines reached $2,117 million in 2023, representing a 6.8% increase from 2022 (Figure 6). This growth was primarily driven by VTS's WORM project.

Figure 6 Capital base – Gas transmission pipelines



4 Profitability measures

We report on the profitability of gas transmission pipelines using return on assets and return on regulated equity, in accordance with our final profitability measures positions paper[10]. We do not report on earnings before interest and taxes per customer, as we do for distribution pipelines, due to the low number of customers served by transmission pipelines and the lack of comparability between pipelines this causes.

4.1 Return on assets

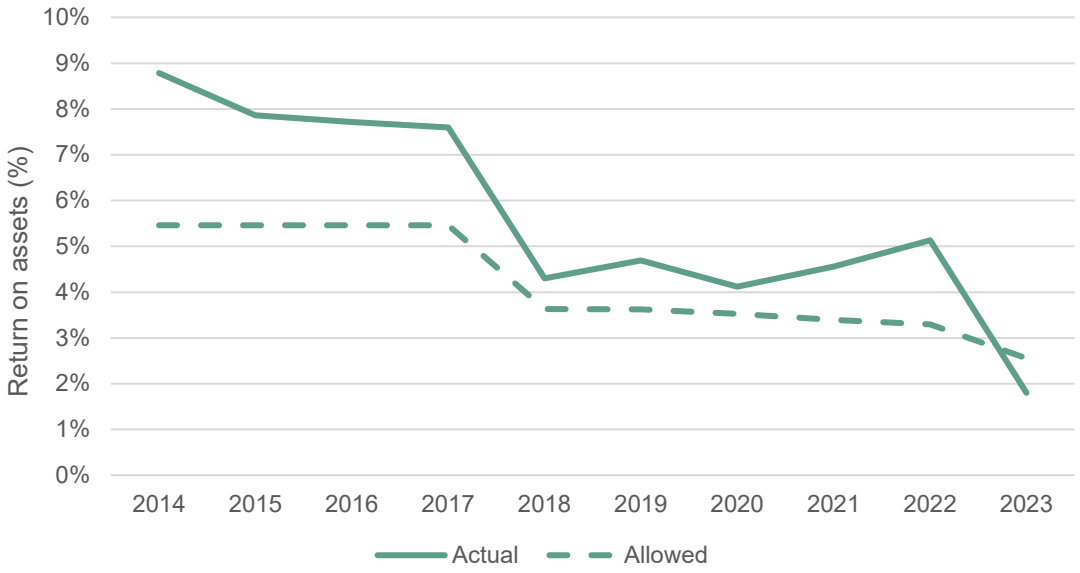
The return on assets (RoA) metric measures the returns that the gas transmission pipelines receive against the value of their capital base. We consider RoA to be the best measure of the gas transmission pipeline profitability. We regulate the pipelines based on achieving an allowed RoA, also referred to as the weighted average cost of capital (WACC).

The gas transmission pipelines can exceed the allowed RoA under our incentive-based regulatory framework when they take actions that ultimately benefit consumers. These actions include generating more revenue by achieving higher utilisation of their assets or reducing the costs of operating their networks while maintaining the required service standards. When gas transmission pipelines outperform their cost targets, they are rewarded by being allowed to retain a portion of the cost savings. Conversely, the gas transmission pipelines may earn less than the allowed RoA if they fail to meet utilisation targets or incur higher expenditures than the regulated forecast levels, indicating a lack of alignment with the interests of consumers. Overspending reduces a business' actual RoA below the allowed RoA, impacting its financial performance. Persistent inefficiency or higher costs than allowed can lead to higher future prices and reduced service quality.

VTS achieved a real RoA of 1.8% in 2023, 0.8 percentage points less than the allowed RoA of 2.6%. This lower return was primarily due to higher than forecast operational expenditure (section 3.2) (Figure 7).

[10] AER, *Profitability measures for electricity and gas network businesses*, December 2019.

Figure 7 Real return on assets – VTS

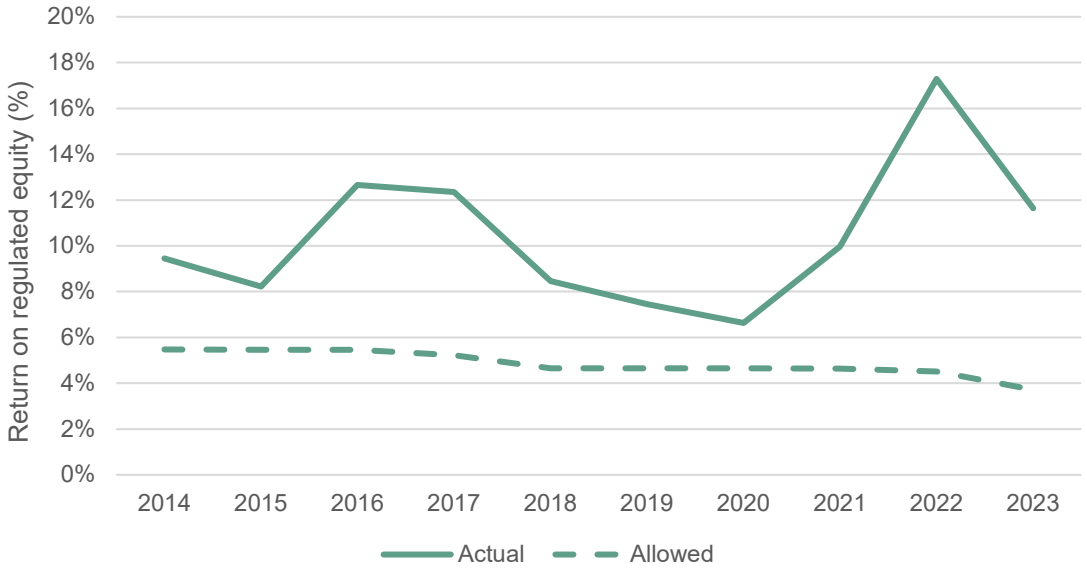


4.2 Return on regulated equity

Return on regulated equity (RoRE) is a measure of the financial return provided to the equity holders of the gas transmission pipelines. We use an allowed (i.e. assumed) RoRE as an input to calculate the allowed RoA that we use to determine the price caps we set in pipeline access arrangements.

The real RoRE for gas transmission pipelines fell to 11.6% in 2023, a 5.6 percentage point decrease from 2022. However, this still exceeded the allowed RoRE of 3.7% by 7.9 percentage points (Figure 8).

Figure 8 Return on regulated equity – Gas transmission pipelines



Pipeline RoREs are higher than allowed for in 2023 due to 3 factors:

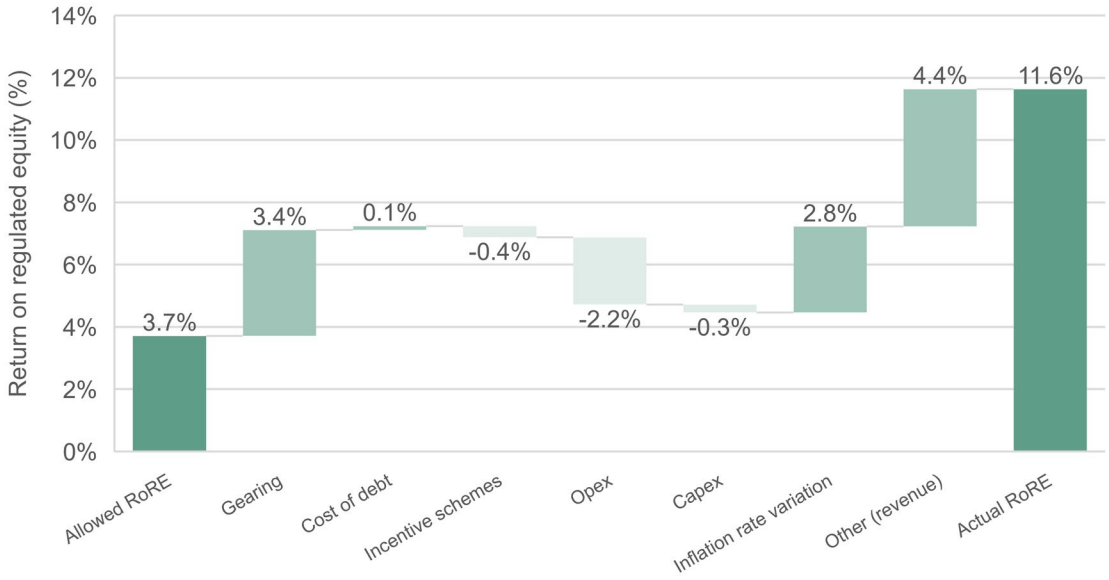
- The overall revenue for the gas transmission pipelines was higher than forecast (section 3.1). These higher revenues are allowed under the incentive-based regulatory framework and are the outcome of more services being provided to customers. It is also due to RBP serving higher customer demand than their forecast (section 2.1).
- The gas transmission pipelines have generally taken on more debt than the benchmark level[11] (higher gearing ratio), increasing their financial leverage. This results in a smaller proportion of the pipeline's assets being funded by equity, resulting in the percentage return on that equity being higher. In this way, gearing changes by pipelines do not result in higher revenue earned from customers. Higher gearing is associated with a greater level of earning risk for equity holders, where the return from both good and bad financial performance is magnified.
- Equity holders achieve higher returns when inflation is above forecast as the value of the capital base is indexed annually based on the consumer price index. As

[11] The AER sets a benchmark gearing ratio of 60%, which represents the proportion of debt to total capital (debt plus equity) that is considered efficient for regulatory purposes. The allowed RoRE is based on this benchmark.

described in detail in section 5.3 of the *2024 Electricity and gas network performance report,*[12] inflation has historically reduced RoRE, although in recent years it has resulted in higher RoRE.

Figure 9 illustrates how different factors contributed to the difference between the allowed RoRE of 3.7% to the actual RoRE of 11.6% for gas transmission pipelines, with each column representing individual performance drivers.

Figure 9 Drivers of return on regulated equity – Gas transmission pipelines – 2023



Note: This calculation of drivers of RoRE is indicative only. Different methods of completing the calculation, such as calculating the impact from the drivers in a different order may show a different result.

[12] AER, *2024 Electricity and gas network performance report*, September 2024.

Glossary

Term	Definition
AER	Australian Energy Regulator
AGP	Amadeus Gas Pipeline
Capex	capital expenditure
EBIT	earnings before interest and taxes
Opex	operating expenditure
RBP	Roma to Brisbane Pipeline
RoA	return on assets
RoRE	return on regulated equity
Shipper	Gas transmission pipeline capacity user
VTS	Victorian Transmission System
WACC	weighted average cost of capital
WORM	Western Outer Ring Main