# Explanatory note – Return on assets

**The Australian Energy Regulator (AER) reports four regulatory profitability measures for regulated networks. We publish explanatory notes to accompany each of these measures.**

This note explains our approach to reporting on the return on assets (ROA) for the gas distribution and transmission network service providers (NSPs) that we fully regulate. This note also explains factors to consider when interpreting ROA.

This note discusses:

- What is ROA
- How to interpret ROA
- How we calculate ROA

## What is ROA

ROA is a simple and commonly used ratio indicating how profitable a company is relative to its total assets.

ROA is a ratio suited to capital intensive businesses and allows us to compare NSP profits against their allowed rates of return.

ROA is calculated using the following formula:

$$\text{ROA} = \frac{\text{EBIT}}{\text{Capital Base}}$$

Where:

- EBIT is earnings before interest and tax
- Capital base is the value of the NSP's assets at the start of the regulatory year

## How to interpret ROA

Our regulatory framework is designed to target a real rate of return. NSPs are compensated for actual inflation outcomes, preserving the purchasing power of NSPs and investors.

To capture these two components of our framework, we report both the:

- Real rate of return, which excludes inflation and is compared against the real pre-tax rate of return
- Nominal rate of return, which includes inflation and is compared against the nominal pre-tax rate of return

An NSP's ROA can be compared against:

- Its allowed rate of return
- ROAs for other NSPs in the sector
- Australian and international regulated businesses where the capital base is valued on a similar basis to that of the NSP

It is difficult to compare an NSP's ROA directly to those of unregulated businesses. This is due to the unique characteristics of the capital base under the regulatory framework, and the resulting rules for regulatory accounting, which differ to statutory accounting requirements.

*Factors contributing to differences between ROA and the allowed rate of return*

An NSP's returns can temporarily deviate from its allowed rate of return in any given year due to the application of the regulatory framework.

Certain factors over the period of analysis have influenced these deviations. This can affect how regulated revenues are recovered from customers in subsequent regulatory years.

Factors to consider when interpreting ROA include:

- Revenue smoothing
- The effect of outturn demand differing from forecasts under weighted average price caps
- Transitional decisions and previous remittal processes, such as the 2019 Jemena Gas Networks (JGN) remittal
- Unaccounted for gas (UAFG)
- Factors contributing to differences between ROA and the allowed rate of return under the regulatory framework

*Revenue Smoothing*

Allowed revenues for an NSP are calculated using the various building block costs and result in an annual revenue requirement for the NSP.

These revenues are then smoothed over the access arrangement period to avoid significant changes in year on year revenues. This smoothing results in a series of 'X-factors', which are a key driver of annual network revenue targets.

An impact of smoothing is the profile of target revenues over the access arrangement period often differs to what would result from the raw (unsmoothed) building blocks.

*Weighted average price caps*

Gas NSPs are regulated under weighted average price caps rather than revenue caps.

Under the price cap form of control, NSPs can earn above or below forecast revenue over time due to changes in demand. If actual demand exceeds forecast demand, NSPs keep the higher resulting revenue. Similarly, if actual demand is less than forecast revenue, NSPs are exposed to the shortfalls.

These differences between forecast and actual demand can result in materially higher or lower returns for the NSPs. Price caps therefore incentivise NSPs to offer tariffs and services that increase demand. All other things being equal, higher outturn demand should influence higher demand forecasts in future periods, lowering prices for consumers.

*JGN transitional decision and remittal process*

Analysis for JGN over the past (2014 to 2020) and current (2020 to 2026) access arrangement periods should be interpreted with caution.

Reported revenues for those years have not been adjusted for the following factors:

- The over-recovery of revenue for their 2014 to 2020 access arrangement whilst JGN sought a review of the AER's determination under the limited merits review framework.
- The downwards adjustment of $169m following the remittal process. This reduces allowed revenues for the 2020 to 2026 access arrangement.
- The effect of multiple annual adjustments to account for movements in underlying price drivers being applied in 2020. This resulted in approximately a $26m increase to JGN's target revenue that year, which is not captured in their post-tax revenue model (PTRM) forecast.

*Unaccounted for gas*

Distribution NSPs are allowed operating expenditure for UAFG. The approach to estimating this allowance varies according to the NSP's jurisdiction.

Gas distribution NSPs in the ACT, NSW and South Australia are required to directly contract UAFG volumes. As a result, UAFG is included in their allowed operating expenditure, and therefore their revenue allowance in our access arrangement determinations.

Victorian gas distribution NSPs operate under a slightly different framework. The Victorian Essential Services Commission (ESCV) sets a benchmark rate of UAFG for each NSP, measured as UAFG divided by total gas delivered. Gas retailers are required to contract sufficient gas to cover customer consumption and the actual UAFG. If actual UAFG is greater than the benchmark, the NSP is required to

compensate retailers for the UAFG exceeding the benchmark.

Where actual UAFG is lower than the benchmark, retailers make reconciliation payments to the NSP. Benchmark levels of UAFG for 2018 to 2022 can be found in the ESCV's 2017 UAFG benchmark review. Because UAFG is considered via the ESCV benchmark process, it is not considered in their access arrangement determinations, nor included in NSPs' operating expenditure forecasts.

*Factors contributing to differences between ROA and the allowed rate of return under the regulatory framework*

ROA captures drivers of an NSP's actual performance against allowances, including:

- Incentive scheme rewards and penalties
- An NSP's performance against operating expenditure allowances

## How we calculate ROA

This section sets out the approach and data sources we use to calculate ROA.

The methodology has been designed to allow for the best possible comparison of NSPs' actual returns against their allowed returns on capital.

The data used to calculate ROA is from the following sources:

- The latest approved or proposed roll-forward models (RFMs) for the NSP
- The latest approved or proposed PTRMs for the NSP
- Annual regulatory information notices (RINs) reported by the NSPs to the AER

*Revenue and expenditure*

Revenue and expenditure are sourced from the income worksheet of the annual RINs. These relate to the NSP's core regulated services, which are:

- Haulage reference services for gas distribution NSPs
- Reference services and other services provided as a covered pipeline services for gas transmission NSPs

Revenue excludes the following:

- Capital contributions: These are not included in the capital base and are therefore not used to calculate returns in the regulatory framework.
- Interest income: This is excluded as it is not part of the regulatory framework.
- Profit from the sale of fixed assets: Disposals (gross proceeds from an asset's sale) are removed from the capital base. The value of disposals in any given year is not used to calculate returns for that year and is therefore excluded from our annual calculations.

  Disposals, however, affect returns on capital in future years by reducing the net capital expenditure added to the capital base. We capture this effect by using the actual opening capital base when calculating returns.

Expenditure excludes the following:

- Finance charges: These largely comprise of interest payments on debt and are therefore excluded from ROA, which is based on EBIT.
- Impairment losses: These are not permitted by the regulatory framework.
- Loss from the sale of fixed assets: Disposals (gross proceeds from an asset's sale) are removed from the capital base. The value of disposals in any given year is not used to calculate returns that year and is therefore excluded from our annual calculations.

  Disposals, however, affect returns on capital in future years by reducing the net capital expenditure added to the capital base. We capture this effect by using the actual opening capital base when calculating returns.

*Depreciation*

We report depreciation using nominal straight-line depreciation, which is measured on an as-incurred basis for all NSPs.

Depreciation is sourced from the final decision RFM where available. Where a final decision RFM is unavailable, we use the most recent access arrangement proposal or draft decision RFM.

Where those models are unavailable, we source depreciation from the PTRM.

The PTRM calculates depreciation using forecast inflation. We have updated depreciation sourced from the PTRM using the Consumer Price Index (CPI) to reflect actual inflation where available.

*Capital base*

To allow for comparison between actual and expected returns, we use the opening capital base in calculating ROA.

We report the capital base on an as-incurred basis for both gas distribution and transmission NSPs.

The opening capital base is sourced from the final decision RFM where available. Where a final decision RFM is unavailable, we use the most recent access arrangement proposal or draft decision RFM.

Where those models are unavailable, we source opening capital base values from the annual RINs.

For gas transmission NSPs, we calculate the capital base on as-incurred basis. This entails using the as-incurred capital expenditure reported by the gas transmission NSPs in their annual RINs.

When calculating real ROA, we must inflate the opening capital base by CPI. This is because an NSP's returns on capital are calculated using the nominal rate of return (nominal pre-tax return on debt and nominal post-tax return on equity).

Inflating the capital base by CPI ensures that an NSP's returns and the capital base are in the same dollar terms.

When calculating nominal ROA, inflating the capital base is not required. Capital base indexation is part of the returns an NSP receives, compensating the NSP for actual inflation.

*Indexation of the opening capital base*

Indexation of the capital base is sourced from the RFM where available. Where a final decision RFM is unavailable, we use the most recent access arrangement proposal or draft decision RFM.

Where those models are not available, we calculate indexation on the opening capital base using CPI figures sourced from the Australian Bureau of Statistics.

*Incentive scheme rewards and penalties*

Our regulatory framework provides gas distribution NSPs with rewards or penalties through targeted incentive schemes aimed at improving network expenditure efficiency.

These schemes allow NSPs to earn rewards (penalties) above (below) their allowed rate of return. Customers should ultimately benefit from these schemes through lower regulated prices.

We have calculated ROA both with and without incentive scheme outcomes so that the impact of incentives on actual returns can be observed.

For gas NSPs, the rewards and penalties from incentive schemes have been sourced from the revenue sheet of the annual RINs (table F3.6).

*Annual updates*

We update ROA when new RFM data becomes available where annual RIN and PTRM data had been used as a substitute.