Australian Government
Australian Reinsurance Pool Corporation

Cyclone Reinsurance Pool Financial Outlook Report

as at 30 June 2024

Acknowledgement of Country

We at ARPC acknowledge the traditional owners and custodians of Country throughout Australia and recognise their continuing connection to land, waters, and community. We pay our respects to Elders past and present and extend that respect to all First Nations people.

The ARPC office is located on the land of the Gadigal people of the Eora Nation.

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Australian Government
Australian Reinsurance Pool Corporation

FROM THE CEO

As CEO of Australian Reinsurance Pool Corporation (ARPC), I am pleased to present the Board approved Financial Outlook Report (FOR) for the year ended 30 June 2024. *The Terrorism and Cyclone Insurance Act 2003* (TCI Act) requires ARPC to annually provide a FOR for the Cyclone Reinsurance Pool (cyclone pool) to the Minister, by 15 October, and publish the FOR within the following 10 business days.

The FOR considers the financial outlook of the cyclone pool, noting that the cyclone pool commenced operations from 1 July 2022, with the first insurers joining on 1 January 2023, large insurers joining by 31 December 2023, and all remaining eligible insurers to join by 31 December 2024. The purpose of the FOR is to assess the current and expected future ability of ARPC to meet the legislative obligations of the cyclone pool. This includes an assessment of the adequacy of premium rates and claims liabilities, observations on capital management practices, and on broader risks affecting the cyclone pool's financial outlook. There is a considerable level of uncertainty in projecting the financial outcomes of natural catastrophes, like cyclone events, and this report illustrates that uncertainty.

The FOR, and actions arising from it, are informed by actuarial assessment. The TCI Act also requires that the Reviewing Actuary (currently the Australian Government Actuary) reviews the FOR. The letter from the Reviewing Actuary is included in the appendices of this report.

Dr Christopher Wallace
BEc (Hons) PhD (Econ) AMP (INSEAD) ANZIIF (Fellow) CIP GAICD

Chief Executive

MANAGEMENT STATEMENT

In our opinion, the attached Financial Outlook Report, for the year ended 30 June 2024, complies with the requirements of the *Terrorism and Cyclone Insurance Act 2003* and is based on appropriate actuarial assessment. Management has put in place suitable processes and systems to prepare the FOR and to support its review by the Reviewing Actuary.

Scott Unterrheiner
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Chief Financial Officer

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Head of Actuarial

01 EXECUTIVE SUMMARY

1.1 Introduction

The Cyclone Reinsurance Pool (cyclone pool) was established by the *Terrorism and Cyclone Insurance Act 2003* (TCI Act) and commenced operations from 1 July 2022, with the first insurers joining on 1 January 2023. The cyclone pool covers cyclone and cyclone-related flood damage to insured residential (Home), strata (Strata), and small business (SME) properties. The cyclone pool is designed to improve insurance affordability and availability in areas with medium to high cyclone risk.

The Financial Outlook Report (FOR) assesses the cyclone pool's current and expected future ability to meet its legislative objectives, noting that the cyclone pool is still in its early stages of development.

Section 5E of the *Terrorism and Cyclone Insurance Regulations 2003* sets out FOR content requirements. Table 1.1 summarises these requirements, with reference to the relevant section of this document.

Table 1.1: Summary of FOR legislative requirements

FOR requirement	Document Section
(a) an overview of the performance of the cyclone reinsurance scheme during the financial year	Section 3
(b) observations on broader financial risks affecting the scheme's financial outlook	Section 6
(c)(i) an assessment of the adequacy of the premiums the Corporation is receiving under cyclone reinsurance contracts	Section 4
(c)(ii) an assessment of the adequacy of the Corporation's reserves that are available to meet claims under those contracts	Section 5
(d) observations on capital management for the purposes of the scheme	Section 7
(e) projections for financial outcomes for the scheme, based on estimates of future claims under cyclone reinsurance contracts	Section 3
(f) any other matters that the Corporation considers material to the current and future financial situation of the scheme	All sections

1.2 Summary of key findings

Overall, nothing has been identified that materially affects the cyclone pool's ability to meet its legislative objectives. The cyclone pool is close to having full coverage of expected ultimate exposure, with the overall outlook consistent with what was expected when the cyclone pool commenced. The key risks facing the cyclone pool are generally 'slow moving' in nature, so will require continuous monitoring. Table 1.2 summarises the key findings of the report.

Table 1.2: Summary of key findings

FOR requirement (summary)	Key findings
(a) recent performance	• Actual earned premium for the 2023-24 financial year was significantly lower than initial expectations, primarily driven by fewer properties taking out insurance than originally modelled[1]. While non-insurance is an important social issue, the lower premium pool does not affect the adequacy of the cyclone pool's premiums, as the reduced premium income is offset by a reduction in modelled claims costs. • For the 2023-24 financial year the total claims cost of $155 million across five declared cyclones was materially below the Average Annual Loss[2] forecast of $568 million, leading to an operating surplus of $436 million (which is held by ARPC to fund future cyclone claims). Given the volatile nature of cyclone events, it is expected that financial outcomes will vary considerably from year to year.
(b) broader financial risks	• Potential risks to the cyclone pool's long-term premium adequacy generally develop over longer periods of time and include changes to the mix of properties reinsured (impacting the cyclone pool's ability to reallocate margin to medium and high-risk properties), climate change, buildings cost inflation and underinsurance.
(c)(i) assessment of premium adequacy	The legislative objectives of the cyclone pool continue to be met: • Projected overall premium adequacy levels are consistent with the cyclone pool's target of a 100% premium adequacy ratio[3] over the longer-term. • As intended, cyclone pool premiums are materially below the modelled costs for high-risk properties and consistent with the modelled cost plus a margin for low-risk properties. • Risk mitigation remains a key focus area. The total annual discount for mitigation applied to in-force Home premiums as at 31 March 2024 was $5.8 million. Mitigation discounts will be extended to Strata in 2025.
(c)(ii) assessment of liability adequacy	• There is uncertainty in reserving for catastrophe events and therefore there is a risk that the reserves held for claims liabilities from past events prove inadequate. However, the impact to the overall financial outlook of the cyclone pool from any deterioration in the liability estimates is low, given the low relative size of events to date compared to overall cyclone pool net assets[4].
(d) observations on capital management	• The operating surplus led to an increase in net assets to $479 million as at 30 June 2024. Accumulated net assets are modest compared to the size of potential claims.
(e) financial projections	• The variability in future cyclone claims experience, and therefore the projected operating result, is significant. For financial year 2024-25 there is a 10 per cent probability of an operating deficit greater than ~$600 million, and a 10 per cent probability of an operating surplus greater than ~$700 million.

[1] Original modelling was from the Initial Pricing Review in 2022 (where there was limited data available).
[2] The Average Annual Loss is the estimated average annual claims cost over the long-term. The original AAL forecast for the 2023-24 financial year of $721 million has been restated to $568 million to reflect the lower actual exposure levels versus that forecast.
[3] The premium adequacy ratio is the ARPC cyclone pool premium divided by the modelled cyclone pool costs (the expected cost of claims, eligible claims handling expenses and cyclone pool operational costs).
[4] Net assets are defined as assets less liabilities, excluding any repayment obligations for calls made on the Commonwealth guarantee.

1.3 Recent and forecast financial performance

Operating result

The cyclone pool recorded an operating surplus of $436 million in the 2023-24 financial year, compared to a projected operating deficit of $2 million. Earned premium and claims costs[5] were at lower levels than projected.

Claims projections are based on the expected long-term Average Annual Loss (AAL), representing the mean of the distribution of possible outcomes. Actual experience will deviate from this estimate and will likely result in a material operating surplus or deficit in any given year. Actual claims are expected to be below the AAL in approximately four out of five years but significantly above the AAL in one out of five years.

Table 1.3 illustrates the range of projected claims (and associated underwriting, investment income and operating result) outcomes. Baseline projections are based on the claims AAL and are shown in bold, with the results corresponding to the 10th and 90th percentile projected claims experience shown below the baseline projections in italics. While the projected operating result (based on the claims AAL) for the 2023-24 financial year was a deficit of $2 million, there was a 10 per cent probability of a greater than ~$700 million surplus, as well as a 10 per cent probability of a greater than ~$700 million deficit. The actual operating surplus of $436 million lies well within this range.

Table 1.3: Cyclone pool recent and projected financial performance

	FY 2023-24 ($m)		FY 2024-25 ($m)
	Actual	Projected	Projected
Earned premium	590	738	652
Claims Costs	**(155)**	**(721)**	**(630)**
Claims costs (90th percentile)		*(1,387)*	*(1,005)*
Claims costs (10th percentile)		*(1)*	*(1)*
Other operating expenses	(19)	(19)	(18)
Underwriting Result	**416**	**(2)**	**4**
Underwriting result (90th percentile claims experience)		*(668)*	*(371)*
Underwriting result (10th percentile claims experience)		*718*	*633*
Investment income	**20**	**0**	**23**
Investment income (90th percentile claims experience)		*0*	*17*
Investment income (10th percentile claims experience)		*24*	*33*
Operating result	**436**	**(2)**	**27**
Operating result (90th percentile claims experience)		*(668)*	*(354)*
Operating result (10th percentile claims experience)		*743*	*667*

2023-24 projected investment income was nil due to the expectation that most premium income would be paid in claims

Forward projections assume a ratio of claims cost to earned premium of approximately 97 per cent (derived from the 2024 Pricing Review) and operating expenses of $18 million (increasing with inflation), resulting in a small forecast surplus for the next three years. For the 2024-25 financial year there is a 10 per cent probability of an operating surplus greater than ~$700 million, and a 10 per cent probability of an operating deficit greater than ~$600 million.

Premium income

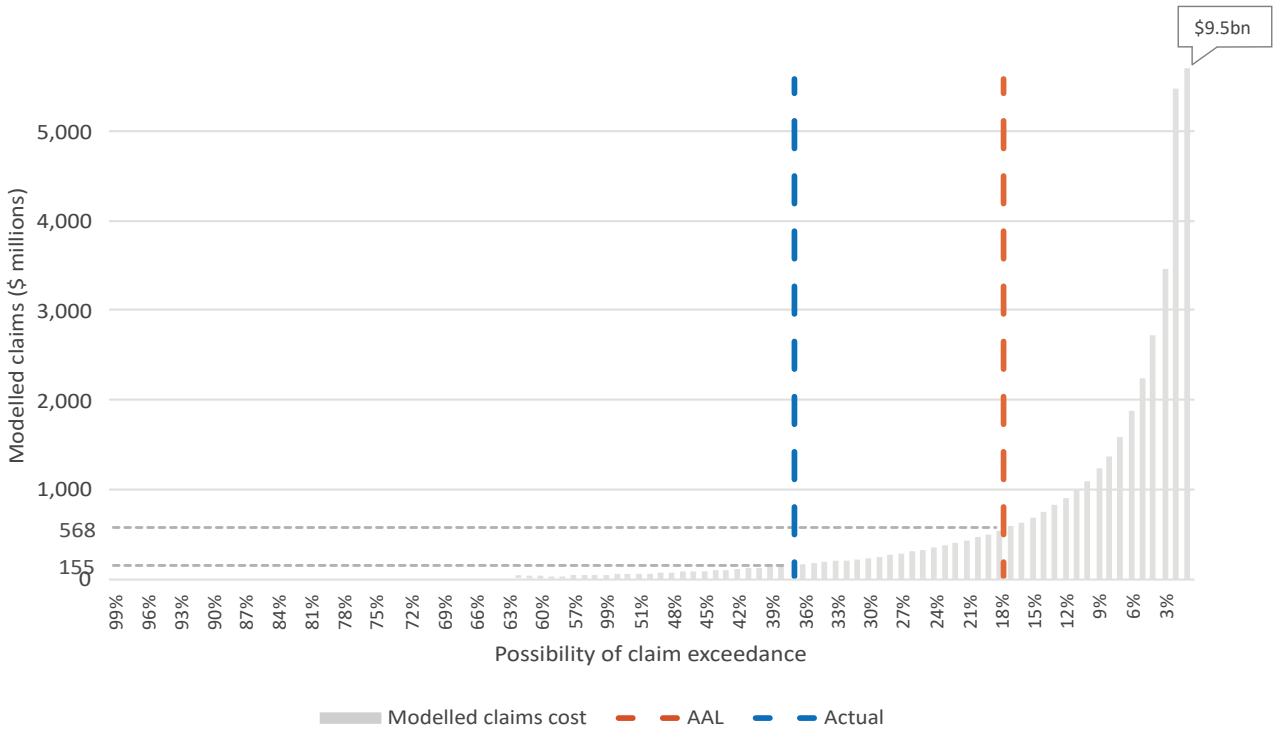
Projected earned premium for the 2024-25 financial year is expected to be approximately 27 per cent lower than originally modelled[6] when the cyclone pool was implemented, primarily driven by fewer properties taking out insurance (i.e. higher levels of non-insurance). While non-insurance is an important social issue, the lower premium pool does not affect the adequacy of the cyclone pool's premiums, as the reduced premium income is offset by a reduction in modelled claims costs (see Section 3.3).

As at 1 July 2024, as a proportion of the estimated ultimate cyclone pool exposure, the cyclone pool reinsures 98 per cent of Home, close to 100 per cent of Strata, and 87 per cent of SME properties. Coverage will reach 100 per cent by the end of the 2024 calendar year, with the final participating insurers joining the cyclone pool by 31 December 2024.

Claims

There have been five Declared Cyclone Events (DCE) in this reporting period (discussed in Section 5). Two of these Tropical Cyclone (TC) events, TC Jasper and TC Kirrily, were the main drivers of claims costs to the cyclone pool. Figure 1.1 shows the modelled claims distribution for the 2023-24 financial year. The actual claims cost of $155 million was significantly lower than the modelled AAL[7] level of $568 million. Given the skewed distribution, there was a 63 per cent probability of claims being less than or equal to $155 million, and a 10 per cent probability of claims greater than or equal to ~$1.1 billion.

Figure 1.1: Modelled distribution of 2023-24 claims



Operating expenses

ARPC incurred $19 million in operating expenses relating to the cyclone pool in the 2023-24 financial year. These operating expenses reflect the costs involved with the implementation (including building internal capability and technology solutions) and day to day operations of the cyclone pool.

As ARPC transitions away from the implementation phase of the cyclone pool, it will continue to insource key functions and reduce spend on external service providers. The operating expense ratio[8] is projected to decrease slightly over financial years 2025-27 and does not suggest any upward pressure on premiums from operating expenses.

[6] Original modelling was from the Initial Pricing Review in 2022 (where there was limited data available).

[7] The original AAL forecast for the 2023-24 financial year of $721 million has been restated to $568 million to reflect the lower actual exposure levels versus that forecast.

Investment income

Investment income is projected using estimated invested assets and future interest rates derived from forecasts from the Reserve Bank of Australia (RBA). If cyclone experience is lower than modelled, and the cyclone pool accumulates assets, investment income could materially increase the cyclone pool's operating result. This will increase the assets available to fund the payment of claims from future cyclone events.

Net asset position

As at 30 June 2024, the cyclone pool had net assets of $479 million. This build-up of assets is due to lower than average cyclone claims during the 2022-23 and 2023-24 cyclone seasons, and investment income from accumulated assets. The size of the surplus is relatively small when viewed in the context of potential cyclone pool claims, where there is an approximately 25 per cent chance of claims exceeding this net asset level in the 2024-25 season.

1.4 Assessment of premium rates

ARPC assessed the adequacy of premium rates as part of the 2024 Pricing Review, which included insurer and public consultation. A key conclusion of the review was that the legislative objectives of the cyclone pool continue to be met overall. The legislative objectives of the cyclone pool and key findings of the premium rate assessment are summarised in Table 1.4.

Table 1.4: Assessment of cyclone pool premium rates against legislative objectives

Category	Summary of legislative objective	Assessment findings
Premium adequacy *TCI Act s8D(a)*	Over the longer-term, premiums are sufficient to cover or offset claims and expenses including any payments funded by the Commonwealth guarantee.	• The cyclone pool's premiums continue to be adequate with the estimated ultimate premium adequacy ratio[9] consistent with the 100% target from the Initial Pricing Review.
Premium rate for medium to high cyclone risk areas *TCI Act s8D(b)*	In medium to high cyclone risk areas, to keep the premiums as low as possible.	• Cyclone pool premiums are materially below modelled cyclone pool costs for high-risk properties.
Premium for low cyclone risk areas *TCI Act s8D(c)*	In lower cyclone risk areas, to keep premiums at levels comparable to what would be charged by other reinsurers.	• Cyclone pool premiums are consistent with ARPC's view of modelled cost plus an estimated (re)insurance market margin for low-risk properties.
Risk mitigation *TCI Act S8D(b)*	Maintaining incentives to reduce and mitigate the risk of eligible cyclone claims.	• The total annual discount for mitigation applied to in-force Home premiums as at 31 March 2024 was $5.8 million. • Mitigation discounts will be effective for Strata from April 2025. • Mitigation discounts will be considered for SME in future pricing reviews.

There is inherent uncertainty in estimating cyclone claims costs and in the underlying catastrophe models that are relied upon to set premium rates. Over time, as ARPC builds up a greater history of claims experience, it will use this and research partnerships to continue to enhance its understanding of cyclone risk and reduce uncertainty levels.

[8] Total operating expense divided by total gross written premium.

[9] The premium adequacy ratio is the ARPC cyclone pool premium divided by the modelled cyclone pool costs (the expected cost of claims, eligible claims handling expenses and cyclone pool operational costs).

Premium rates by cyclone risk level

As intended, cyclone pool premiums are materially below modelled cyclone pool costs for medium and high-risk properties and consistent with modelled cyclone pool cost plus a margin for low-risk properties, as shown in Table 1.5.

Table 1.5: Premium adequacy ratio by modelled cyclone pool cost band

Cyclone risk	Modelled cyclone pool cost band	Total Sum Insured ($b)	Average modelled cyclone pool cost ($)	Average cyclone pool premium ($)	Premium adequacy ratio
Low to high risk	**Under $100**	1,682	45	60	133.3%
	$100 to $500	495	215	245	114.0%
	$500 to $1000	85	700	637	91.0%
	$1000 to $2000	22	1,366	956	70.0%
	$2000 to $5000	8	3,358	1,412	42.0%
	More than $5000	2	7,351	2,649	36.0%
	Total	**$2,293**	**134**	**135**	**100.4%**

Excludes nil risk properties
Exposure has been scaled up to the full market
Re-expressed to reflect a standardised $500,000 sum insured

Risk mitigation

The total annual discount for mitigation applied to in-force premiums as at 31 March 2024 was $5.8 million. Over time, ARPC expects this figure to increase as insurers adjust their underwriting approaches and as policyholders are incentivised by cyclone pool premiums to implement mitigation measures.

ARPC has recently implemented a set of mitigation discounts to apply to ARPC Wind premiums for eligible Strata policies, which will be effective from April 2025. The discounts incentivise mitigation against structural damage from high wind loads and claims from water ingress caused by wind driven rain.

Further consideration will be given to how mitigation discounts can be applied to SME in the future.

1.5 Assessment of liability adequacy

There is significant uncertainty in reserving for catastrophe claims, particularly in early periods of development.

For the two DCEs which resulted in claims in the prior reporting period (TC Ilsa and TC Gabrielle), the expected ultimate claims cost reduced by 31 per cent from 30 June 2023 to 30 June 2024. Given these were very small events and newly reported, this level of volatility in ultimate cost estimate is expected.

For the six DCEs with claims as at 30 June 2024, most (88 per cent) of the ultimate claims cost is still outstanding. This increases the risk that the reserves held for claims liabilities from past events prove inadequate. However, the impact to the overall financial outlook of the cyclone pool from any deterioration in the liability estimates is low, given the low relative size of events to date compared to overall cyclone pool net assets.

Premiums for the cyclone pool are earned by applying a risk pattern derived using historical cyclone claims data sourced from the Insurance Council of Australia (ICA). All premiums are earned over November to May, reflecting the higher risk of cyclones during the summer months. The unearned premium reserve of $224 million is sufficient to cover the modelled long-term average cost of claims.

1.6 Risks to financial outlook

Risks potentially impacting the cyclone pool's financial outlook (and/or ARPC's ability to meet legislative objectives) are summarised in Table 1.6. The table shows risks which have been assessed as potentially material to the cyclone pool and is not intended to be an exhaustive summary of all risks. Many of the risks identified are 'slow-moving' in nature, highlighting the importance of ongoing risk monitoring, as well as working with insurers to appropriately address emerging risks.

Table 1.6: Potential risks to cyclone pool financial outlook

Risk	Description	Response to risk
Change in mix of reinsured properties	The mix of reinsured properties by cyclone risk level is a key driver of overall premium adequacy. Given that highest risk areas have the lowest premium adequacy, if actual take-up rates or building development in high-risk areas (relative to low-risk areas) increases over time, the ability to reallocate margin to medium and high-risk properties within existing premium rate structures will be impacted.	Ongoing monitoring of non-insurance and property development metrics.
Climate change	Climate change may impact the level and geographical shape of cyclone risk of properties reinsured by the pool.	Engage with experts in the actuarial, scientific and engineering communities to maintain awareness of climate risk drivers. Finalise quantitative climate scenario analysis that ARPC is undertaking with APRA as part of the Climate Vulnerability Assessment.
Inflation	High levels of building cost inflation in recent years gave rise to a short-term risk of claims costs increasing by more than sums insured. This risk has reduced in line with the moderating building cost inflation levels experienced in the most recent financial year.	Over the long-term, any higher costs are expeced to be reflected in higher sums insured and therefore not expected to impact premium adequacy.
Underinsurance	Underinsurance (where policyholders choose a sum insured that is less than the total rebuild cost) may become more prevalent due to increased cost of living pressures, which can impact the adequacy of premium rates.	Use of property replacement cost data to provide insights into the impact, extent and spread of underinsurance (see **Action 2**, Table 1.8).
Catastrophic event/s	Cyclone risk is highly volatile, with the potential for low probability high severity events to occur in any given year. A severe cyclone (or series of cyclones) within a relatively short timeframe has the potential to deplete the cyclone pool's net asset position.	Capital is managed in line with ARPC's Capital Management Policy. The annually reinstated Commonwealth guarantee provides additional funding support when required.
Insurer claims management	Claims are managed directly with policyholders by insurers, with costs recovered from the cyclone pool. Given that the cyclone pool reinsures 100 per cent of eligible claims, there is a risk to the adequacy of premium rates if insurers do not settle claims arising from cyclones costs effectively.	Ongoing claims validations and audits. Work with insurers to address any issues raised and improve claims outcomes.
Changes to insurer product coverage	The cyclone pool covers eligible cyclone claims consistent with the underlying insurer's Product Disclosure Statement. The Home premium structure seeks to price for differences in insurer coverage levels though a simplistic 'Coverage Level' modifier[10]. There is a risk that insurer coverage changes over time and results in claims coverage that is more generous than allowed for in the premium rating. There is no 'Coverage Level' modifier currently in place for SME or Strata properties.	Assessment of product coverage rating (see **Action 3**, Table 1.8).
Data quality	The ability of ARPC to meet its legislative objectives requires reliable information to be provided by insurers. Accurate information on risks and risk mitigations will allow ARPC to better understand its risk exposure and monitor the success of incentive measures to encourage risk mitigation.	Consider incentivising insurers to collect complete and accurate data (see **Action 4**, Table 1.8).

[10] A modifier in the cyclone pool pricing formula that is intended to adjust the cyclone pool premium based on the level of coverage in the insurer's PDS.

1.7 Observations on capital management

The primary objective of ARPC's Capital Management Policy is to manage assets so that they are available to meet future financial obligations as they fall due. If assets are insufficient to meet claims liabilities, the cyclone pool is supported by an annually reinstated Commonwealth guarantee which provides additional funding.

Table 1.7 outlines the cyclone pool asset target according to ARPC's Capital Management Policy. This reflects the Board's appetite to call on the Commonwealth guarantee and is set to cover a one in 20-year level of claims over a year, equivalent to a 95 per cent probability of sufficiency. A net asset position materially different to the target may result in management action[11]. As the cyclone pool is still in the early stages of its development, it would take several years to accumulate assets to reach the target even with low levels of claims. This target is reasonable for the purposes of the cyclone pool's asset management given the existence of the Commonwealth guarantee.

Table 1.7: Cyclone pool net assets target

Capital target	Rationale	Threshold
Available Asset Target	Covers a 1 in 20-year level of losses over the next year, equivalent to a 95% probability of sufficiency	400% of forecast premium[(a)]

(a) Based on modelled distributions expressed as an approximate percentage of premium to scale with size of cyclone pool

Given the volatile nature of cyclone claims experience, the potential financial outcomes for the cyclone pool over the long-term vary considerably. A number of potential future scenarios are quantified in Section 7 with the baseline scenario indicating that after 10 years, there is a 25 per cent chance of an accumulated surplus of more than $4 billion and a 10 per cent chance of an accumulated deficit in excess of $6 billion.

ARPC's approach to asset management is appropriate for a portfolio with significant volatility and the backing of the Commonwealth guarantee. The assets accumulated to date are modest in the context of the range of potential outcomes and volatility in future experience. No capital management actions are required at this stage.

[11] Based on current annual premiums this target is approximately $2.7 billion.

1.8 Actions

Section 8.1 provides an update on the 2023 FOR actions, with some actions completed in the 2023-24 financial year and some continuing into 2024-25 as planned. Key progress updates for the past 12 months include:

- The undertaking of the 2024 Pricing Review, with no material changes in premium rates required.
- The analysis and proposal of Strata mitigation discounts in the 2024 Pricing Review (effective from 2025).
- Ongoing analysis and monitoring in other areas including insurance take-up rates and Home Buildings inflation.

Table 1.8 summarises the key actions arising from the 2024 FOR. Note that actions focus on specific additional activities to be undertaken by ARPC, rather than those already carried out as a part of normal business operations.

Table 1.8: 2024 FOR actions

Number / Category	2024 Action	Planned Timeframe
1. Risk mitigation	Monitor take-up of existing mitigation discounts by region and consider initiatives to improve take-up. Consider how mitigation discounts can be extended to SME and included in the SME premium rating structure in the future.	12-24 months
2. Under and non-insurance	Use the cyclone pool exposure dataset and property replacement cost data to better understand the impact of under and non-insurance on premium adequacy. These insights will be used to inform future pricing reviews.	12-24 months
3. Product coverage rating	Review the product coverage rating for Home. Assess whether a product coverage rating is required for SME and Strata properties.	12-24 months
4. Data quality	Consider incentivising insurers to collect complete and accurate data by phasing in premium rate loadings for missing rating variables after insurers have had sufficient time to collect this data.	12-24 months

02 BACKGROUND

2.1 Legislation

ARPC is a public financial corporation, originally established under the *Terrorism Insurance Act 2003* on 1 July 2003 to administer the Terrorism Reinsurance Pool (terrorism pool).

The *Treasury Laws Amendment (Cyclone and Flood Damage Reinsurance Pool) Act* 2022 was assented on 31 March 2022, amending the (renamed) *Terrorism and Cyclone Insurance Act 2003* (TCI Act).

The TCI Act established a Cyclone and Cyclone Related Flooding Reinsurance Pool (cyclone pool) to be administered by ARPC. The cyclone pool covers cyclone and related flood damage to insured Home, Strata, and SME properties and is designed to improve insurance affordability and availability for areas with medium to high cyclone risk. The cyclone pool commenced operations on 1 July 2022, with transitional timeframes for insurers to join. Large insurers were required to join the cyclone pool by 31 December 2023 with all remaining eligible insurers required to fully participate in the cyclone pool by 31 December 2024.

2.2 Design

The cyclone pool is funded by reinsurance premiums paid by insurers to ARPC. In the event of a declared cyclone event, the insurer recovers all eligible claims costs and claims handling expenses from the cyclone pool.

The cyclone pool delivers reinsurance at a lower cost than the private market by leveraging a $10 billion annually reinstated Commonwealth guarantee which enables the cyclone pool to set premium rates which do not have margins for profit or return on capital.

2.3 This report

Section 40A of the TCI Act requires ARPC to prepare and provide the Financial Outlook Report (FOR) for the cyclone pool to the responsible Minister. The first FOR is required after the end of the 2023-24 financial year (as at 30 June 2024), and then annually thereafter[12]. From 2024, the FOR must be given to the Minister on or before 15 October and published on the ARPC website within the following 10 business days.

Section 5E of the *Terrorism and Cyclone Insurance Regulations 2003* sets out FOR content requirements:

a. an overview of the performance of the cyclone reinsurance scheme during the financial year;

b. observations on broader financial risks affecting the scheme's financial outlook;

c. an assessment of the adequacy of:
   i. the premiums the Corporation is receiving under cyclone reinsurance contracts; and
   ii. the Corporation's reserves that are available to meet claims under those contracts;

d. observations on capital management for the purposes of the scheme;

e. projections for financial outcomes for the scheme, based on estimates of future claims under cyclone reinsurance contracts;

f. any other matters that the Corporation considers material to the current and future financial situation of the scheme.

This FOR is prepared as at 30 June 2024, and unless otherwise stated, all financial results are for the financial year ended 30 June 2024. Appendix A contains a summary of the data used for the 2024 FOR and associated as-at dates.

The Reviewing Actuary (currently the Australian Government Actuary) concurs with the actions set out in the FOR. The letter of review from the Reviewing Actuary is included in Appendix F.

[12] While it was not then a requirement, ARPC published a FOR in 2023 at their discretion for transparency and for the information of stakeholders. See https://arpc.gov.au/wp-content/uploads/2023/12/ARPC_Financial_Outlook_Report_2023_Final_v1.0-For-Website-1.pdf

2.4 Uncertainty and reliance

As a low frequency, high severity peril, the modelling of cyclone claims is subject to significant model and parameter uncertainty. The most extreme events, which have not been observed in our recorded history, but are known to be in the distribution of potential outcomes, drive estimated cyclone claims costs. ARPC does not have material volumes of claims data available currently to calibrate the modelling of these events. As such, any analysis drawn from the outputs from these models is subject to material uncertainty.

The analysis underlying this report relies on the accuracy, reliability, and completeness of data submitted to ARPC by insurers. ARPC has data validation processes that promote data accuracy but is ultimately reliant on the data provided by insurers. Appendix A provides further information on the data relied upon for this report

03 FINANCIAL PERFORMANCE

3.1 Measuring financial performance

This section summarises the financial performance of the cyclone pool over the past year, along with projected performance over the next three years. The financials of the cyclone pool contain the following components:

- Reinsurance premiums, which are relatively stable and predictable
- Claims costs[13] [14], which are volatile based on the cyclone losses occurring in the year;
- Operating expenses; and
- Investment income, which depends on the capital surplus or deficit from the prior period.

The operating result reflects the premiums and investments, less the claims costs and operating expenses. In any one year the operating result will mostly vary depending on the claims for that year.

[13] Claims costs include all eligible claims handling expenses.

[14] Actual Claims costs include a risk margin that ARPC holds to increase the probability of sufficiency of the insurance liabilities in its financial accounts as required by the AASB 1023 accounting standard. This risk margin is not considered when setting cyclone pool premium rates and not accounted for in future claims projections.

3.2 Operating result

3.2.1 Operating result: experience over the year

The cyclone pool recorded an overall surplus of $436 million in the 2023-24 financial year, compared to a projected operating deficit of $2 million. The underwriting surplus was $416 million, with earned premium, claims costs and operating expenses all at lower levels than projected, as summarised in Table 3.1.

Table 3.1 illustrates the range of projected claims (and associated underwriting, investment income and operating result) outcomes. Baseline projections are based on the claims AAL and are shown in **bold**, with the results corresponding to the 10th and 90th percentile projected claims experience shown below the baseline projections in ***italics***. While the projected operating result (based on the claims AAL) for the 2023-24 financial year was a deficit of $2 million, there was a 10 per cent probability of a greater than ~$700 million surplus, as well as a 10 per cent probability of a greater than ~$700 million deficit. The actual operating surplus of $436 million lies well within this range.

Table 3.1: Cyclone pool recent financial performance

	FY 2023-24 ($m)	
	Actual	Projected
Written premium	717	967
Earned premium	590	738
Claims costs	**(155)**	**(721)**
Claims costs (90th percentile)		*(1,387)*
Claims costs (10th percentile)		*(1)*
Other operating expenses	(19)	(19)
Underwriting result	**416**	**(2)**
Underwriting result (90th percentile claims experience)		*(668)*
Underwriting result (10th percentile claims experience)		*718*
Investment income	**20**	**0**
Investment income (90th percentile claims experience)		*0*
Investment income (10th percentile claims experience)		*24*
Operating result	**436**	**(2)**
Operating result (90th percentile claims experience)		*(668)*
Operating result (10th percentile claims experience)		*743*

For the 2023-24 financial year, the low claims costs compared to the AAL forecast led to an operating surplus of $436 million. Given the volatile nature of cyclone events, it is expected that financial outcomes will vary considerably from year to year.

3.2.2 Operating result: future projections

Table 3.2 shows projected operating results for financial years 2024-25 to 2026-27. Forward projections assume a ratio of claims cost to earned premium of approximately 97 per cent (derived from the 2024 Pricing Review) and operating expenses of $18 million in 2024-25 increasing with inflation, resulting in a small forecast surplus for the next three years. The surplus arises as a result of the projected ultimate premium adequacy ratio being slightly above 100 per cent, as described in Section 4.2.

Table 3.2: Cyclone pool projected financial performance for the financial years 2024-25 to 2026-27

	FY 2024-25	FY 2025-26	FY 2026-27
Earned premium	652	695	735
Claims costs	**(630)**	**(671)**	**(710)**
Claims costs (90th percentile)	*(1,005)*	*(1,072)*	*(1,134)*
Claims costs (10th percentile)	*(1)*	*(1)*	*(1)*
Other operating expenses	(18)	(19)	(19)
Underwriting result	**4**	**5**	**6**
Underwriting result (90th percentile claims experience)	*(371)*	*(396)*	*(418)*
Underwriting result (10th percentile claims experience)	*633*	*675*	*715*
Investment income	**23**	**26**	**27**
Investment income (90th percentile claims experience)	*17*	*19*	*20*
Investment income (10th percentile claims experience)	*33*	*37*	*39*
Operating result	**27**	**30**	**32**
Operating result (90th percentile claims experience)	*(354)*	*(377)*	*(398)*
Operating result (10th percentile claims experience)	*667*	*713*	*754*

10th and 90th percentile investment income calculated for each individual year based on estimated investment assets

The variability in future claims experience, and therefore the projected operating result, is significant. For financial year 2024-25 there is a 10 per cent probability of an operating deficit greater than ~$600 million, and a 10 per cent probability of an operating surplus greater than ~$700 million.

The methodology underlying all financial projections shown in this section is outlined in Appendix B.

3.3 Premium

As shown in Table 3.1, actual earned premium for the 2023-24 financial year was $590 million compared to the $738 million projected. Projected earned premium is expected to be approximately 27 per cent lower than originally modelled[15] when the cyclone pool was implemented, primarily driven by fewer properties taking out insurance (i.e. higher levels of non-insurance), as described in Section 4.

As at 1 July 2024, as a proportion of the estimated ultimate cyclone pool exposure, the cyclone pool reinsured 98 per cent of Home, close to 100 per cent of Strata, and 87 per cent of SME properties. Coverage will reach 100 per cent by the end of the 2024 calendar year, with the final participating insurers joining the cyclone pool by 31 December 2024. Projected premium income is based on current exposure, inflated to account for insurers joining, increases in building dwelling growth, and sum insured indexation, as described in Appendix B.

Actual earned premium for the 2023-24 financial year was significantly lower than initial expectations, primarily driven by fewer properties taking out insurance than originally modelled. The lower premium pool does not affect the adequacy of the cyclone pool's premiums, as the reduced premium income is offset by a reduction in modelled claims costs.

3.4 Claims

3.4.1 Claims: total experience over the year

There have been five Declared Cyclone Events (DCEs) in this reporting period (discussed further in Section 3.4.2). Two of these events, TC Jasper and TC Kirrily, were the main drivers of claims to the cyclone pool.

Table 3.3 shows the actual versus projected claims costs in the 2023-24 financial year, with the actual claims costs well below the projected claims costs of $721 million.

Table 3.3: Actual vs expected claims costs for the 2023-24 financial year

	FY 2023-24 ($m)	
	Actual	Projected
Claims costs	**(155)**	**(721)**
Claims costs (90th percentile)		*(1,387)*
Claims costs (10th percentile)		*(1)*

The difference in the actual claims experience is driven by:

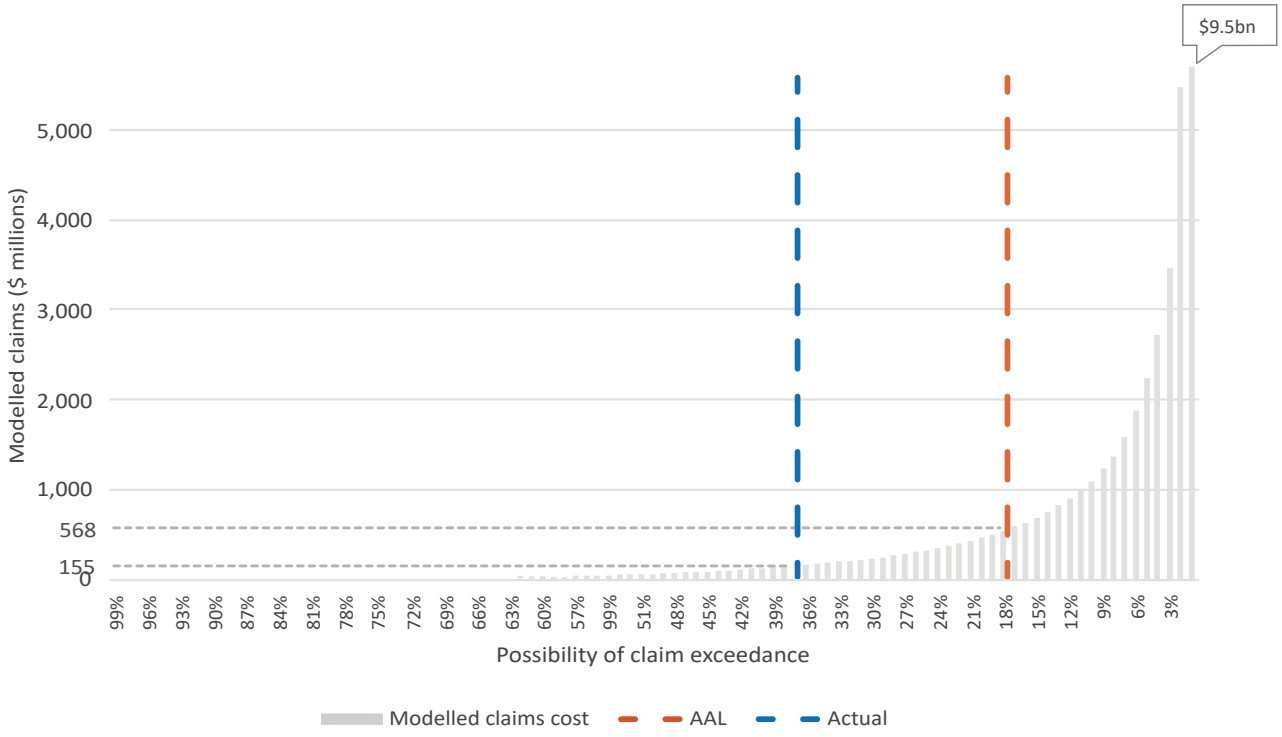
- **Previous (estimated) view of exposure:** The projected claims costs in the 2023 FOR were based on the estimate of total cyclone pool exposure from the Initial Pricing Review. As insurer data was received, analysis showed that the rate of non-insurance was higher than anticipated, resulting in a lower exposure for the cyclone pool. Restating the anticipated claims upon actual exposure resulted in a projected cost of $568 million rather than $721 million.

- **Nature of the comparison:** It should always be expected that this comparison will yield large differences. ARPC financial projections are based on the cyclone AAL, or the average of a range of projected claims over the long-term. The significant difference between observed experience and modelled AAL is not unexpected as cyclone claims are volatile and observed claims will not match the modelled mean over the short-term. The premiums for the cyclone pool are expected to cover or offset claims costs to the cyclone pool only in the long-term.

[15] Original modelling was from the Initial Pricing Review in 2022 (where there was limited data available).

The ‘restated’ modelled claims costs of $568 million for financial year 2023-24 represents the mean of the distribution of potential claims for the period. Given the highly skewed distribution, there was a 63 per cent probability of claims of $155 million or less, and a 10 per cent probability of claims greater than or equal to ~$1.1 billion. Figure 3.1 illustrates the skew in the distribution of simulated claims for the 2023-24 financial year exposure.

Figure 3.1: Modelled distribution of 2023-24 claims costs



3.4.2 Claims costs: summary of events over the year

The cyclone pool provides cover for eligible cyclone claims within the event period defined in the TCI Act. The period commences when ARPC declares a DCE, based on notification from the Bureau of Meteorology, of an eligible cyclone event. The coverage window extends to the time that ARPC declares the end of the cyclone, plus 48 hours.

During the 2023-24 cyclone season, ARPC declared five cyclones, with TC Jasper and TC Kirrily being the main drivers of claims to the cyclone pool, as shown in Table 3.4.

Table 3.4: Summary of DCEs for the 2023-24 cyclone season with insurer data to 31 March 2024

	TC Jasper	TC Kirrily	TC Lincoln	TC Megan	TC Anggrek	Total
Crossing Point	Far North QLD	Far North QLD	NT	NT	Did not cross	
Event start date	10-Dec-23	24-Jan-24	16-Mar-24	16-Feb-24	15-Jan-24	
Claims						
Number of claims reported	2,519	4,046	2	4	0	6,571
Average reported claim size ($000s)	17	6	1	9	0	10
Total outstanding liability ($000s)	81,233	56,503	25	815	0	138,576
Total incurred cost ($000s)	**91,333**	**62,820**	**25**	**815**	**0**	**154,994**

The remainder of this section summarises the events impacting exposed cyclone pool properties, with a more detailed description of TC Jasper and TC Kirrily.

TC Jasper
TC Jasper was the largest cyclone event for the cyclone pool from an incurred cost perspective in the 2023-24 cyclone season. It was declared on 10 December 2023 and made landfall near Bloomfield Wujal Wujal, 65 kilometres north of Port Douglas and 120 kilometres from Cairns, as a Category 2 system. The First Nations community of Wujul Wujal suffered devastating damage.

In the broader regional impact, the structural damage from wind gusts was minimal, but there were reports of extensive damage to trees. Landfall did not coincide with high tide, so the storm surge impact was reduced. The system was downgraded to a tropical low soon after making landfall where it was very slow moving.

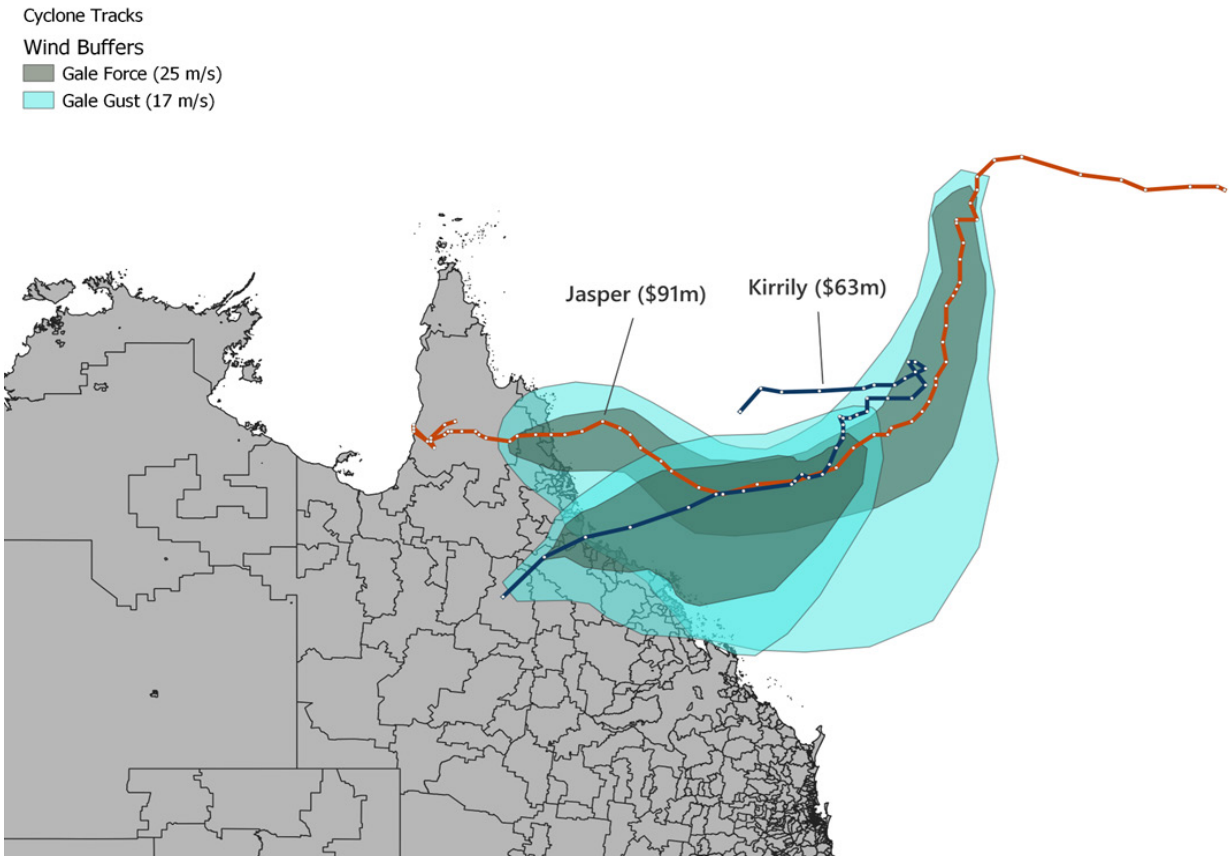
Over the following days, from 14 December to 18 December, extreme rainfall was recorded in parts of Far North Queensland, between Tully and Cape Melville. The rainfall resulted in significant flooding, with most flooding occurring from 17 December onwards. The cyclone pool coverage period ended early 16 December. The areas worst affected by flooding were between Innisfail and Hope Vale, including Cairns.

As at June 2024, the estimated incurred cost (including risk margin) for TC Jasper is $91 million, with a reported average claim size to insurers of $17 thousand.

TC Kirrily
TC Kirrily was the second major cyclone event for the cyclone pool in the 2023-24 cyclone season. It was declared on 24 January 2024 and made landfall between Mutarnee and Rollingstone (about 45 kilometres north of Townsville) as a Category 2 system on 25 January. There were some reports of structural damage from wind gusts, and reports of extensive damage to trees. In Townsville, 66 thousand residents were without power for several days. Landfall did not coincide with high tide, so the storm surge impact was reduced. The system was downgraded to a tropical low seven hours after making landfall.

As at June 2024, the estimated incurred cost (including risk margin) for TC Kirrily is $63 million, with a reported average claim size of $6 thousand.

Figure 3.2: TC Jasper and TC Kirrily tracks



Source: Cyclone Track Information from Early Warning Network and Bureau of Meteorology

Other events during 2023-24 cyclone season

There were three other Declared Cyclone Events during the 2023-24 tropical cyclone season. The incurred claims from these events were less than $1 million.

- **TC Lincoln** made landfall over the remote Northern Territory coast between Port McArthur and the Queensland border on 16 February 2024. Lincoln crossed a relatively sparsely populated area and weakened below tropical cyclone intensity late on 16 February.
- **TC Megan** crossed southeast of Port McArthur as a category 3 cyclone on 18 March 2024. Megan crossed an unpopulated part of the coast hence there were minimal wind impacts along the southwest Gulf coast.
- **TC Anggrek** developed in the Indian Ocean, near the Cocos (Keeling) Islands in January 2024. TC Anggrek never moved into the Australian region, and so did not result in any claims for the cyclone pool.

For the 2023-24 financial year the total claims costs of $155 million across five declared cyclones were materially below the Average Annual Loss forecast of $568 million.

3.4.3 Claims costs: future projections

The approach for projecting cyclone pool premium and claims costs is described in Appendix B. Earned premium for the financial year 2024-25 is projected to be $652 million. The projection uses the pricing assumption of a claims cost to earned premium ratio of approximately 97 per cent (derived from the 2024 Pricing Review). The expected claims cost is therefore estimated to be $630 million.

This claims costs estimate represents the mean of the distribution of possible outcomes. Given the volatile nature of cyclone claim experience, claims are highly uncertain with a large range of potential outcomes. Actual experience will deviate from this estimate and will likely result in a material operating surplus or deficit in any given year. Table 3.5 shows the distribution of claims for financial year 2024-25. There is an 80 per cent modelled probability of claims less than $520 million and a 1 per cent modelled probability of claims greater than $10.4 billion.

Table 3.5: Projected modelled claims for financial year 2024-25

Cyclone pool claims distribution ($m)		
Average Annual Loss		630
Return period	**Probability of Exceedance**	**Claims**
1 in 5 year	20.0%	520
1 in 10 year	10.0%	1,220
1 in 20 year	5.0%	2,487
1 in 50 year	2.0%	6,055
1 in 100 year	1.0%	10,367
1 in 200 year	0.5%	15,555
1 in 1,000 year	0.1%	36,467

3.5 Operating expenses

3.5.1 Expenses: experience over the year

ARPC incurred $19 million in operating expenses relating to the cyclone pool in the 2023-24 financial year, which was in line with the budget, as shown in Table 3.1. These operating expenses reflect the costs involved with the implementation (including building internal capability and technology solutions) and day to day operations of the cyclone pool.

3.5.2 Expenses: future projections

As shown in Table 3.2, expenses for the financial year 2024-25 are projected to decrease slightly to $18m, from $19m in financial year 2023-24. In line with ARPC's transition away from the implementation phase of the cyclone pool, it will continue to insource key functions and reduce spend on external service providers. After financial year 2024-25, there will be a modest increase in projected expenses, in line with inflation.

Table 3.6 shows the cyclone pool's projected operating expense ratio[16] for financial years 2024-25 to 2026-27. This decreases slightly over time, showing that the cyclone pool projected operating expenses are not resulting in any upward pressure on premiums.

Table 3.6: Projected operating expense ratio for financial years 2024-25 to 2026-27

	FY 2024-25	FY 2025-26	FY 2026-27
Operating expense ratio	2.7%	2.6%	2.5%

[16] Total operating expense divided by total gross written premium.

3.6 Investment income

3.6.1 Investment income: experience over the year

As shown in Table 3.7 below, the actual investment income for financial year 2023-24 was significantly higher than projected, largely driven by lower than budgeted claims costs. Investment income projections are based on an expectation that actual claims experience will equal the budgeted claims AAL. Any investment income on assets is available to meet claims costs in following years.

Table 3.7: Actual vs projected investment income for the 2023-24 financial year

	FY 2023-24 ($m)	
	Actual	Projected
Investment income	**20**	**0**
Investment income (90th percentile claims experience)		*0*
Investment income (10th percentile claims experience)		*24*

3.6.2 Investment income: future projections

Investment income is projected using estimated invested assets and future interest rates derived from forecasts from the Reserve Bank of Australia. Volatility in the actual investment income earned may result from volatility in both the rate of investment return as well as claims experience. Future investment income projections are shown in Table 3.8 below and are based on an expectation that actual claims experience will equal the projected claims AAL.

Table 3.8: Projected investment income for financial years 2024-25 to 2026-27

$m	FY 2024-25	FY 2025-26	FY 2026-27
Investment income	**23**	**26**	**27**
Investment income (90th percentile claims experience)	*17*	*19*	*20*
Investment income (10th percentile claims experience)	*33*	*37*	*39*

3.7 Net asset position

As at 30 June 2024, the cyclone pool had net assets of $479 million. This build-up of assets is due to lower-than average cyclone claims during the 2022-23 and 2023-24 cyclone seasons, and investment income from accumulated assets. The size of the surplus is relatively small when viewed in the context of potential cyclone pool claims, where there is an approximately 25 per cent chance of claims exceeding this net asset level in the 2024-25 season.

Figure 3.3 shows the movement in net assets over the 2023-24 financial year.

Figure 3.3: Net asset movement over financial year 2023-24

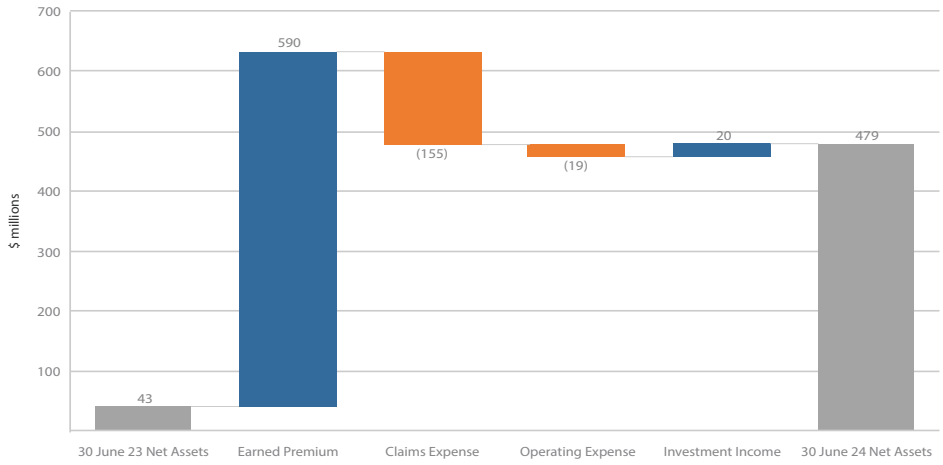


Table 3.9 shows the key components of the $479 million net asset position as at 30 June 2024.

Table 3.9: Summary of financial position for financial year 2023-24

	$m as at 30 June 2024
Assets	
Cash and cash equivalents	11
Trade and other receivables	149
Investments	686
Deferred insurance assets	2
Non-financial assets	6
Total assets	**854**
Liabilities	
Unearned premium	224
Outstanding claims	139
Payables and other liabilities	13
Total liabilities	**375**
Net assets	**479**

The cyclone pool has unearned premium of $224 million as at 30 June 2024. Additionally, there is a liability for outstanding claims of $139 million, $93 million of which comprises an allowance for Incurred But Not Reported (IBNR) claims plus a risk margin. The cyclone pool holds $11 million in cash to meet operating expenses as they fall due and $686 million in term deposits. Given that insurers pay premiums quarterly, and in arrears, written premium for the quarter ending 30 June 2024 was estimated and accrued; the cyclone pool has trade and other receivables of $149 million, most of which is unclosed business[17].

The operating surplus led to an increase in net assets to $479 million as at 30 June 2024. The net asset surplus is modest and well below ARPC's Capital Management Policy target, noting the cyclone pool is in its early stages of development. No capital management actions are required.

[17] Unclosed business refers to premium income that is yet to be processed, but for which ARPC is liable. For ARPC this is due to insurers submitting data and processing payments one month after the end of a quarter.

04 ASSESSMENT OF PREMIUM RATES

4.1 Legislative objectives and defined targets

ARPC has defined targets for meeting the legislative objectives of the TCI Act. This section considers how the cyclone pool premiums are currently meeting these targets. A summary of these targets, and the current assessment is shown in Table 4.1.

Table 4.1: Assessment of premium rates against legislative objectives and defined targets

Category	Summary of legislative objective	Defined target	Assessment
Premium adequacy *TCI Act s8D(a)*	Over the longer-term, premiums are sufficient to cover or offset claims and expenses including any payments funded by the Commonwealth guarantee.	Overall premium adequacy[18] ratio of 100 per cent.	Premium adequacy ratio estimated to be 100.4 per cent for ultimate exposure. **In line with target.**
Premium rates for medium to high cyclone risk areas *TCI Act s8D(b)*	In medium to high cyclone risk areas, to keep the premiums as low as possible.	All margins collected are reallocated to properties with the highest modelled cost resulting in a premium adequacy ratio <100 per cent for medium and high-risk properties	Premium adequacy ratio reduces as modelled cost increases and is below 40 per cent for the highest risk properties. **In line with target.**
Premium rate for low cyclone risk areas *TCI Act s8D(c)*	In lower cyclone risk areas, to keep premiums at levels comparable to what would be charged by other reinsurers.	Premiums are set in line with ARPC's view of private (re) insurance market premiums including margins resulting in premium adequacy ratio > 100 per cent for this cohort.	Premiums are consistent with ARPC's view of modelled cost plus an estimated (re)insurance market margin. **In line with target.**
Risk mitigation *TCI Act S8D(b)*	Maintaining incentives to reduce and mitigate the risk of eligible cyclone claims.	Offer premium discounts for properties that have undertaken risk mitigation.	Risk mitigation discounts are in place for Home and will be in place for Strata effective April 2025. SME mitigation discounts will be considered in future pricing reviews. **Working towards target.**

ARPC reviewed the current cyclone pool premium rates in 2024 ("2024 Pricing Review"), with a key conclusion of the review being that the legislative objectives of the cyclone pool continue to be met overall[19], noting that risk mitigation discounts for SME will be considered in a future pricing review.

[18] The premium adequacy ratio is the ARPC cyclone pool premium divided by the modelled cyclone pool costs (the expected cost of claims, eligible claims handling expenses and cyclone pool operational costs).

[19] The 2024 Premium Determination Report and the report from the Initial Pricing Review are available on the ARPC website: Premium rates – ARPC.

4.2 Premium adequacy

4.2.1 Overall premium adequacy ratio

In the 2022 pricing review ("Initial Pricing Review"), premium rates targeted an ultimate premium adequacy ratio of 100 per cent. This ratio is the amount of premium collected relative to the expected AAL plus operating expenses. A value of 100 per cent indicates that premium is equal to expected claims plus operating expenses. As actual data from insurers has now been received, ARPC is able to validate assumptions made in the Initial Pricing Review to assess ongoing adequacy of premium rates. Although there are differences within the underlying portfolio, they are offsetting and the latest estimate of premium adequacy ratio from the 2024 Pricing Review is still consistent with this initial estimate. Table 4.2 below shows the drivers of change in the estimate dpremium adequacy ratio.

Table 4.2: Movement in overall premium adequacy ratio

Premium adequacy movements	
Estimated adequacy ratio (Initial Pricing Review)	**100.0%**
Lower coverage in high wind-risk regions than expected	+4.6%
Greater high-risk flood exposure	-3.5%
Other	-0.7%
Current estimated adequacy ratio (2024 Pricing Review)	**100.4%**

The main differences observed are as follows:

- Lower cyclone pool coverage in high wind risk regions (which have lower premium adequacy ratios) increases overall adequacy by 4.6 per cent;
- A greater number of high flood risk properties in the cyclone pool, which reduces the overall adequacy by 3.5 per cent;
- Other offsetting factors, including fewer insurers offering surge cover than expected, and other differences in exposure data.

As shown in Section 3.3, the total premium pool estimated in the 2024 Pricing Review is lower than estimated from the Initial Pricing Review (which had limited data available). This difference has not impacted the overall adequacy of the premium rates, as the lower premium pool collected is offset by an equal reduction in estimated claims costs.

Considering the uncertainty in modelled cyclone costs, the projected overall premium adequacy levels are consistent with the cyclone pool's target of a 100% premium adequacy ratio over the longer-term.

Maintaining premium adequacy over time

ARPC's view of cyclone risk may evolve as claims experience develops and models are updated. Premium rates are set with consideration of ARPC's best view of current risk. It relies on the quality of data received from insurers, catastrophe models, the current understanding of the impacts of climate change and observed cyclone claims experience.

ARPC will leverage research partnerships and undertake focused vulnerability studies to further improve its understanding and pricing of cyclone risk.

Specific areas of uncertainty in the catastrophe models, and identified areas of future research are outlined in Appendix D.

4.3 Premium rates by cyclone risk level

Cyclone pool premiums are designed to minimise premiums for medium and high-risk properties, while keeping premiums for low-risk properties at a level comparable to what would be charged in the private market. Table 4.3 shows the premium adequacy ratio by modelled cyclone pool cost band.

Table 4.3: Premium adequacy ratio by modelled cyclone pool cost band

Cyclone risk	Modelled cyclone pool cost band	Total Sum Insured ($b)	Average modelled cyclone pool cost ($)	Average cyclone pool premium ($)	Premium adequacy ratio
Low to high risk	**Under $100**	1,682	45	60	133.3%
	$100 to $500	495	215	245	114.0%
	$500 to $1000	85	700	637	91.0%
	$1000 to $2000	22	1,366	956	70.0%
	$2000 to $5000	8	3,358	1,412	42.0%
	More than $5000	2	7,351	2,649	36.0%
	Total	**$2,293**	**134**	**135**	**100.4%**

Excludes nil risk properties
Exposure has been scaled up to the full market
Re-expressed to reflect a standardised $500,000 sum insured

As intended, cyclone pool premiums are materially below the modelled costs for high-risk properties and consistent with the modelled cost plus a margin for low-risk properties.

Online quote data has been analysed to assess the impact of the cyclone pool on policyholder premiums. This is shown in the 2024 Cyclone Pool Premium Assessment Report[20]. The analysis shows that there has been a significant reduction in average policyholder premiums for the highest risk bands following entry to the cyclone pool. These observed premium movements are consistent with the legislative objectives of the cyclone pool.

[20] Cyclone Reinsurance Pool Premium Assessment as at January 2024 (arpc.gov.au)

4.4 Risk mitigation

Improving the resilience of insured assets to cyclone events through risk mitigation reduces claims costs to the cyclone pool, while improving the built environment. As set out in the TCI Act, the cyclone pool premiums are designed to maintain incentives to reduce and mitigate the risk of property damage.

The premium structure allows for the impact of large-scale mitigations, such as levees, in the base rates. Construction year, construction type and roof type are rated in line with their resilience to wind damage.

4.4.1 Home mitigation discounts

The premium structure for Home policies provides premium discounts for specific mitigation activities, which are applied when homeowners have retrofitted their home to improve its resilience. The mitigation rating factors, and their associated discounts, are shown in Table 4.4.

Table 4.4: Risk mitigation rating factors and discounts (Home Buildings and Contents)

Mitigation activity	Wind premium discount
Roller door bracing upgrade or retrofit replacement of roller door (compliant with AS 4505:2012) - on homes built pre-2012	8%
Window protection to all windows (e.g. cyclone shutters)	10%
Roof structure tie-down upgrades (e.g. over-batten roof system) - on homes built pre 1982	20%
Complete roof replacement and structure tie-down upgrades to current standards - on homes built pre 1982	30%

Mitigation discounts on roller doors and roof upgrades are only applicable to properties built prior to 2012 and 1982 respectively. Properties built after this are not eligible for additional mitigation discounts as risk reduction through building code enhancements is accounted for in the construction year rating factor.

Based on data captured by insurers and reported to ARPC, the total annual discount for mitigation applied to in-force premiums as at 31 March 2024 is $5.8 million. Over time, ARPC expects this figure to increase as insurers adjust their underwriting processes and as policyholders are incentivised by cyclone pool premiums to implement mitigation measures. Table 4.5 provides the breakdown of premium discounts applied by region. Further breakdown of these statistics is available in Section 3 of the 2024 Cyclone Pool Statistics Report[21].

Table 4.5: Breakdown of mitigation discount by region

Region	Number of properties (000s)	Total cyclone pool premium discount ($000s)	Proportion of policies with any mitigation discounts
South East and Mid Coast QLD	24.7	2,097	2.4%
Far North QLD	26.2	3,266	17.5%
Inland QLD	2.2	50	1.2%
NT	0.6	53	1.6%
Northern WA	1.1	325	2.8%
Southern WA	0.0	1	0.0%
Northern NSW	0.1	2	0.0%
Total	**54.9**	**5,794**	**1.9%**

An increased premium discount for higher wind risk regions is expected as the relative benefit for risk reduction is higher. The proportion of policies with a mitigation discount is notably higher for Far North Queensland, which may reflect government initiatives such as the Queensland Household Resilience Program, which offers up to $11,250 in funding for qualifying mitigation. Take-up rates of mitigation discounts in other high-risk areas are materially lower than Far North Queensland and may be impacted by differing property profiles in these regions (see Action 1).

[21] Cyclone Reinsurance Pool Premium & Exposure Statistics as at 31 December 2023 (arpc.gov.au)

4.4.2 Strata mitigation discounts

ARPC wind premium mitigation discounts for eligible Strata policies will be in effect from April 2025. The discounts have been developed in partnership with James Cook University Cyclone Testing Station and reflect the estimated risk reduction of the mitigation activities.

Table 4.6 shows the mitigation activities which will qualify for a discount.

Table 4.6: Risk mitigation factors and discounts (Strata)

Risk mitigation	Details	Maximum Wind Premium Discount
Roof Mitigation	Roofs that have been retrofitted to comply with current standards Tile roofs which have been upgraded with sarking Metal roofs which have been upgraded with fastened flashings.	10%
Window Protection	Glass windows which have external debris-rated impact screens or wind-rated shutters installed as permanent protection	3%
External Doors	All external doors of the building are either metal, timber with solid cores, or glass doors with debris-rated impact screens or wind-rated shutters	3%
Vehicle Access Doors	Vehicle access doors that are under the same roof as a low-rise strata building, which have been upgraded to be compliant with the current standards (AS4505:2012)	3%
Gutter Overflows	Gutter overflows for all perimeter gutters on boxed eaves and/or all box gutters (at each end) *or* all eaves have no eave lining	3%

Discounts will be reviewed over time when claims data becomes available. Over time, additional discount factors may also be added to reflect new research relating to mitigation or developments in common practice.

The total annual discount for mitigation applied to in-force Home premiums as at 31 March 2024 is $5.8 million. Over time, ARPC expects this figure to increase as insurers adjust their underwriting approaches and as policyholders are incentivised by cyclone pool premiums to implement mitigation measures.

Action 1: Monitor take-up of existing mitigation discounts by region and consider initiatives to improve take-up. Consider how mitigation discounts can be extended to SME and included in the SME premium rating structure in the future.

4.4.3 Other risk mitigation initiatives

Further to direct reductions in cyclone pool premium rates for large-scale mitigation and individual property mitigation, ARPC supports risk mitigation through the following:

- **Thought leadership:** ARPC has partnered with the Cyclone Testing Station (CTS) at James Cook University (JCU) to provide research relating to mitigation activities for Strata and SME properties, and to research strategies for increasing the resilience of large strata buildings to damage from wind-driven rain. The CTS is part of the Engineering School at JCU and specialises in engineering research into property damage from cyclonic winds.

- **Data sharing across government:** the Hazards Insurance Partnership is a government initiative managed by the National Emergency Management Agency (NEMA) to help communities better prepare for disasters. ARPC has engaged with NEMA and the Australian Climate Service to identify areas where ARPC's data assets may be better used to target mitigation investment.

05 ASSESSMENT OF LIABILITY ADEQUACY

This section assesses the adequacy of the cyclone pool's insurance claims liabilities. It compares liability estimates as at 30 June 2023 ("previous valuation") to observed claim development and estimates as at 30 June 2024. It comments on the suitability of the approach used to estimate insurance liabilities and identifies key uncertainties in the estimates.

5.1 Comparison of estimated ultimate claims costs to previous valuation

Table 5.1 shows the comparison of the current to previous estimate of ultimate claims cost for TC Gabrielle and TC Ilsa.

Table 5.1: Comparison of current and previous ultimate claims cost for prior events

Development at	Central estimate of ultimate claim cost[(a)] ($000s)					
	TC Gabrielle	TC Ilsa	Total central estimate of Claims costs	Risk Margin ($000s)	Discounting ($000s)	Total including risk margin ($000s)
Accident Year	2022-23	2022-23				
End of the accident year	53.8	29.3	83.2	31.2	-3.3	111.1
One year later	49.5	8.1	57.6	0.0	0.0	57.6

[(a)] Inflated undiscounted

For the two DCEs which resulted in claims in the prior reporting period, the central estimate of ultimate cost has reduced by 31 per cent. At the 30 June 2023 valuation, TC Gabrielle and TC Ilsa were undeveloped with more than 85 per cent of the central estimate of ultimate cost outstanding. Estimates therefore relied heavily on catastrophe model outputs which are highly uncertain, particularly for smaller events (Gabrielle and Ilsa had a total 5 claims reported to ARPC). This was also reflected in the much higher risk margin held on outstanding claims as at 30 June 2023 of 44 per cent of outstanding claims cost. Both events have now settled with no further developments expected.

5.2 Outstanding claims liability

Table 5.2 shows the outstanding claims liability (OCL) estimate at the central estimate and the 75 per cent probability of sufficiency (PoS) levels for the cyclone pool.

Table 5.2: Outstanding claims liability estimates as at 30 June 2024 for the cyclone pool

DCE	Paid to date ($000s)	Case estimate ($000s)	IBNR[(a)] ($000s)	OCL central estimate ($000s)	Risk margin (%)	OCL at 75% probability of sufficiency ($000s)	Total incurred claims expense ($000s)
Gabrielle	50	0	0	0	0%	0	50
Ilsa	8	0	0	0	0%	0	8
Jasper	10,101	31,353	36,450	67,803	20%	81,233	91,333
Kirrily	6,318	16,392	28,957	45,349	25%	56,503	62,820
Lincoln	0	3	13	16	55%	25	25
Megan	0	35	607	641	27%	815	815
Total	**16,476**	**47,782**	**66,027**	**113,809**	**22%**	**138,576**	**155,052**

[(a)] Includes insurer event related claims management expense and ARPC claims handling expense

The outstanding claims liability was calculated using a credibility-weighted average between ultimate costs based on actual experience[22] and catastrophe loss model estimates[23] .

When a DCE first arises, there is little information available on actual claims costs. Therefore, a higher weighting is initially placed on the catastrophe loss model estimates. As time passes, more accurate information on the costs incurred is received from insurers, and a higher credibility weighting is placed on actual experience. There is larger uncertainty where 'Paid to Date' and 'Case Estimate' to date is a lower proportion of ultimate cost.

The approach used to estimate insurance liabilities is appropriate considering the data available and the high level of uncertainty in estimating catastrophe claims.

5.3 Premium liability

Premiums for the cyclone pool are earned by applying a risk pattern derived using historical cyclone claims data sourced from the Insurance Council of Australia (ICA). All premiums are earned over November to May, reflecting the higher risk of cyclones during the summer months. The unearned premiums reserve of $224 million is expected to be sufficient to cover the cost of claims based on adequacy ratios from the 2024 Pricing Review at a 65 per cent probability of sufficiency.

Table 5.3: Premium liability as at 30 June 2024 for the cyclone pool

	($000s)
Unearned premium	223,516
Premium liability[(a)]	211,992
Risk margin[(b)]	7,491
Premium liability at 65% probability of sufficiency	219,483

[(a)] Central estimate of claims cost relating to unexpired risks, inflated and discounted
[(b)] At 65 per cent probability of sufficiency

[22] Chain ladder ultimate – the weighted average of ultimate claim costs from incurred chain ladder and paid chain ladder models.
[23] Loss estimates from the RMS, Risk Frontiers and COMBUS catastrophe models, estimated separately for each DCE.

5.4 Uncertainty in estimation of insurance liabilities

Uncertainty in the outstanding claims liability is high due to the following factors:

- **Data limitations:** ARPC operates as a reinsurer for the cyclone pool. Typically, there is a lag between information received by the insurer and when it is passed onto ARPC.
- **Benchmarks:** Due to very limited claims information to date, claim development patterns are based on industry benchmarks of cyclones and insurer estimates of ultimates.
- **Catastrophe model estimates:** The selected ultimate cost for each DCE is based partially on catastrophe loss model estimates. There is inherent uncertainty in these estimates, particularly if the cyclone location and path is not well known at the point the estimates are derived. The adequacy of the outstanding claims liability is therefore subject to the same risks and uncertainties as the catastrophe loss model estimates.

The inherent uncertainty in reserving for catastrophe events means there is a risk that reserves held for claims liabilities from past events prove inadequate. However, the impact to the overall financial outlook of the cyclone pool from any deterioration in the liability estimates is low, given the low relative size of events to date compared to overall pool net assets.

06 RISKS TO FINANCIAL OUTLOOK

This section discusses potential risks facing the cyclone pool in continuing to meet legislative objectives, or more broadly impacting the financial outlook of the cyclone pool. It considers only risks which have been assessed as potentially material to the cyclone pool and is not intended to be an exhaustive summary of all risks.

Many of the risks identified are 'slow-moving' in nature, highlighting the importance of ongoing risk monitoring, as well as working with insurers to appropriately address emerging risks. The metrics identified for ongoing monitoring are outlined in Section 6.9.

6.1 Changes in mix of reinsured properties

As discussed in Section 4.3, premium adequacy ratios are by design lowest for high-risk areas, and improving insurance take-up is a key objective of the cyclone pool. However, an increase in the proportion of medium to high-risk properties (relative to low-risk properties) reinsured by the cyclone pool may impact overall premium adequacy. This could be the result of:

- The cyclone pool achieving its objective of increased insurance take-up in medium to high-risk regions; and/or
- An increase in the overall number of properties in medium and high-risk areas (relative to low-risk areas).

Insurance take-up rates

Figure 6.1 shows estimated insurance take-up rates by region for Home buildings insurance. Insurance rates are estimated by considering the number of policies in insurer in-force data (adjusted for insurers who have yet to join the cyclone pool) as a proportion of ARPC's estimate of total insurable properties. The methodology underlying these estimates is described further in Appendix C.

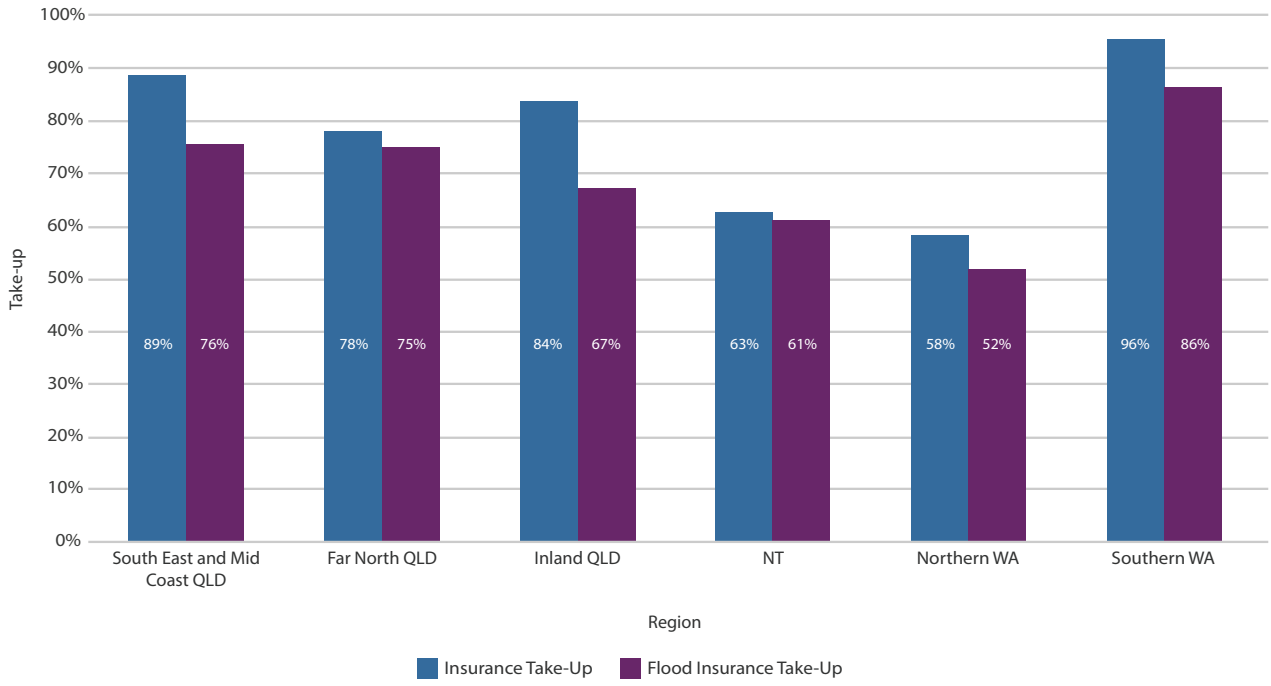
Higher wind risk regions have lower insurance take-up rates, with Northern WA, Northern Territory and Far North QLD having take-up rates of 58, 63 and 78 per cent respectively.

Flood coverage is optionally offered by some insurers and some policyholders may opt out of optional flood cover to reduce their overall premium. Figure 6.1 also provides estimated flood insurance take-up levels, highlighting the wide variation in flood coverage across regions. Specifically, there are significant proportions of policyholders opting out of flood coverage in South East and Mid Coast QLD, Inland QLD and Southern WA.

If insurer practices with regards to offering flood coverage in their insurance products change, this may have a material impact on take-up rates.

ARPC is seeking to further understand and quantify the drivers of non-insurance. In addition to the level of risk (which drives total premium cost), socioeconomic factors may also have a material impact on take-up rates.

Figure 6.1: Home buildings insurance and flood insurance take-up by region as at 31 Dec 2023[24]



There is a significant proportion of properties without insurance protection, particularly in high wind risk regions. Improving insurance affordability and availability are key objectives of the cyclone pool. Changes in estimated insurance and flood take-up rates will be closely monitored over time to assess the impact on overall portfolio mix and premium adequacy.

Action 2A: Use the cyclone pool exposure dataset and property replacement cost data to better understand the impact of non-insurance on premium adequacy. These insights will be used to inform future pricing reviews

Higher insurance take-up scenario

As described above, premium adequacy is a function of insurance take-up and risk mix (the mix of high versus low-risk policies). Premium adequacy is lowest in high-risk areas, which are also the areas with the lowest insurance take-up rates. A change in insurance take-up and risk-mix could mean current cyclone pool premiums are no longer adequate and premium rates for medium and high-risk areas may need to be reviewed.

Premium adequacy has been assessed for a scenario where 50 per cent of the uninsured population enters the cyclone pool, as shown in Table 6.1. It was found that this scenario would result in the premium adequacy ratio reducing to 94.3 per cent. In this case, ARPC would consider actions it needs to take as part of future pricing reviews.

Table 6.1: Impact of higher insurance take-up scenario on premium adequacy ratio

	Premium adequacy ratio
Current estimated adequacy ratio (2024 Pricing Review)	100.4%
Higher take-up rate scenario	94.3%

[24] Grossed-up for estimated remaining insurers to join the cyclone pool.

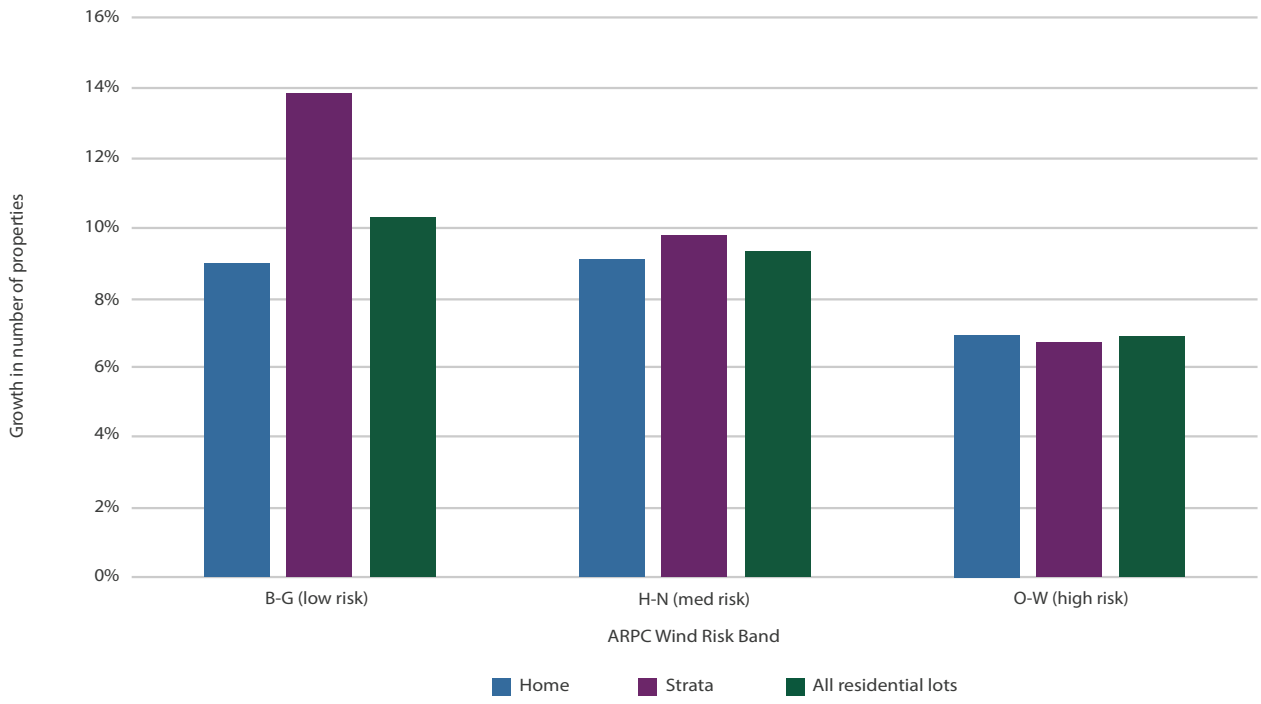
Exposure profile of new buildings

The risk profile of the cyclone pool will change as the number of properties in Australia grows. Given the risk pooling between low and high-risk properties, the ongoing premium adequacy of the cyclone pool is impacted by the mix of exposure between segments. Disproportionate growth in higher risk areas may require adjustments to the pricing methodology to maintain long-term premium sufficiency.

Figure 6.2 shows the annual growth of unique addresses from February 2019 to February 2024. This is grouped by the ARPC Wind Risk Band and shown for Home and Strata. Band 'B' has low cyclone risk, and band 'W' is the highest risk band. The number of properties in bands 'B' to 'G' increased by 10.3 per cent over the five-year period, whereas the number of properties in bands 'O' to 'W' increased by 6.9 per cent. The growth in the past five years indicates that there is a greater rate of property growth in low-risk areas than high-risk areas. The current distribution of growth rates does not pose a risk to overall cyclone pool adequacy; however, it is important to note that this trend was prior to the establishment of the cyclone pool and hence does not reflect the impact of lowered premiums in high-risk areas.

At this point, it is too soon to consider trends in building before and after cyclone pool implementation, however this will be monitored in the future.

Figure 6.2: Annual growth in building lots between February 2019 and February 2024



Source: Geoscape Geocoded National Address File (G-NAF)

There is a risk that providing significantly lower premiums to medium and high cyclone risk properties may disproportionately incentivise growth in these areas than would otherwise occur. This would be an unintended consequence of the cyclone pool design and negatively impact the adequacy of the premium rates.

The mix of reinsured properties by cyclone risk level is a key driver of overall premium adequacy. Given that highest risk areas have the lowest premium adequacy, if actual take-up rates or building development in high-risk areas (relative to low-risk areas) increases over time, the ability to reallocate margin within existing premium rate structures will be impacted.

6.2 Climate change

Climate change may impact the natural catastrophe risk faced by properties reinsured by the pool. A summary of the science relating to climate risk, and its potential impact on tropical cyclones, was included in Section 5.2.1 of the 2023 Financial Outlook Report[25]. ARPC's assessment of the climate science is materially unchanged from the 2023 report.

6.2.1 APRA Climate Vulnerability Assessment

An action identified in last year's Financial Outlook Report was to undertake climate change scenario testing to better understand the potential impacts of climate change on the cyclone pool. In July 2023, APRA commenced its General Insurance Climate Vulnerability Assessment (CVA) on behalf of the Council of Financial Regulators (CFR), which explores the impact of climate change on home insurance affordability for households across Australia. As part of the CVA, ARPC is providing guidance on what future cyclone pool reinsurance premiums would be under two climate scenarios. This data will be used by the insurers participating in the CVA as an input to their estimation of future general insurance premiums. This reinsurance premium guidance provided by the ARPC to APRA was specific to the climate scenarios and overall design of the CVA, and was not carried out to inform future premium rate setting more generally.

ARPC intends to publish the results of the modelling in the 2024-25 financial year. ARPC will use this analysis to assess the potential impact of climate change under the two CVA scenarios to the resilience of the cyclone pool.

6.2.2 Other considerations for premium rates

If the geographic shape of cyclone risk does changes over time because of climate change, then premium rates will be adjusted to reflect this.

Table 6.2 summarises wider risks that climate change poses to premium adequacy and the intended approach to mitigate the risk.

Table 6.2: Climate risk impact on premium adequacy

Issue	Risk control
Catastrophe models fail to reflect climate change or latest science.	New model versions will be tested, considered, and implemented where appropriate, as they become available; models will be monitored for how they address climate risk.
Climate change requires adjustment in overall revenue or relativities.	Pricing reviews will consider the issue and act consistently in line with agreed principles.
ARPC lacks an understanding of climate risk drivers.	ARPC is engaging with experts in the actuarial, scientific, and engineering communities to maintain awareness of the issues.
Building codes and land use polices do not allow for changing risk and/or climate risk; for example, if there is poleward migration of cyclones into areas currently lacking the strongest building codes.	Geographic relativities in the premium formula will reflect higher vulnerability in these regions.
ARPC lacks information to adequately price for risk.	ARPC is collecting detailed exposure data from insurers to better understand risk.
Exposure shifts into high-risk areas, such as beachfront properties subject to storm surge.	Detailed exposure data allows ARPC to detect such movements; prices may be adjusted to reflect risk; ARPC data can inform other government agencies of potential problems.

[25] https://arpc.gov.au/wp-content/uploads/2023/12/ARPC_Financial_Outlook_Report_2023_Final_v1.0-For-Website-1.pdf

6.3 Inflation

Inflation directly impacts the cyclone pool's claims costs. While inflationary pressures from previous years have reduced significantly over the 2023-24 financial year, ARPC will continue to monitor inflation as part of its overall premium adequacy monitoring, as discussed in Section 6.9. An overview of the current inflationary environment is below.

6.3.1 Inflation indices

Consumer Price Index

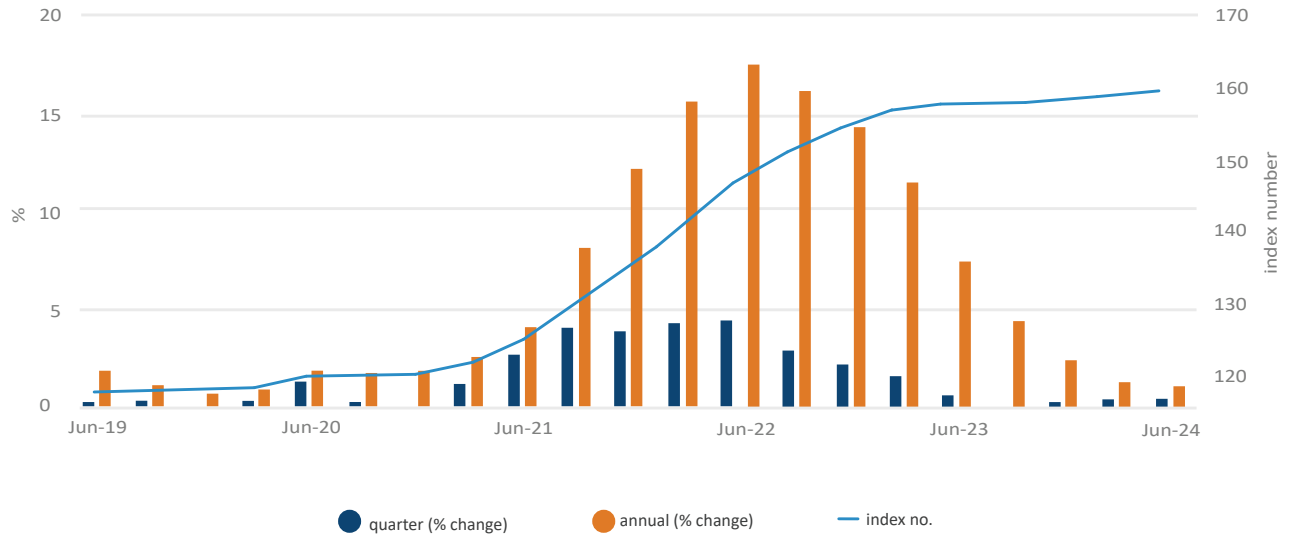
Inflation, as measured by the annualised rate of growth in the Consumer Price Index (CPI) was 3.8 per cent for the 12 months to June 2024. Inflation remains above target but is now less than half its peak of 7.8 per cent for the 12 months to December 2022. In his speech on 30 May 2024, Treasury Secretary Dr Steven Kennedy outlined the following in relation to the inflationary environment[26]:

- Over the past year, the Australian economy has slowed, and inflation has moderated as expected.
- Inflation is expected to continue to moderate, with Treasury's inflation forecasts broadly in line with the RBA's forecasts in the May *Statement on Monetary Policy* (of inflation reaching the 2-3 per cent target range in the second half of 2025, and the midpoint in 2026).

ABS Construction Producer Price Index

The Australian Bureau of Statistics (ABS) Construction Producer Price Index (PPI) highlights that construction price inflation has moderated significantly over the past year. For the 12 months to June 2024, input prices to house construction rose 1.1 per cent, compared to 7.4 per cent for the 12 months to June 2023, and 17.3 per cent for the 12 months to June 2022[27], as shown in Figure 6.3.

Figure 6.3: ABS construction Producer Price Index



Source: Australian Bureau of Statistics, Producer Price Indexes, Australia June Quarter 2024.
Index reference period of 2011-12= 100.0.

The supply of building materials continues to improve from increased domestic production and imports to meet demand, alongside continued softening demand for new housing construction. Nonetheless, skilled labour shortages and increased input costs from higher energy prices and transport costs continue to place pressure on the construction industry.

[26] Dr Steven Kennedy PSM, Secretary to the Treasury, Post-Budget economic briefing, Address to the Australian Business Economists, 30 May 2024.
[27] ABS, Producer Price Indexes, Australia- Input to the house construction industry (reference period June Quarter 2024).

6.3.2 Inflation impacts

Construction price inflation increases the cost of building and repairing homes, with inflation also reflected in increases to Home buildings sums insured.

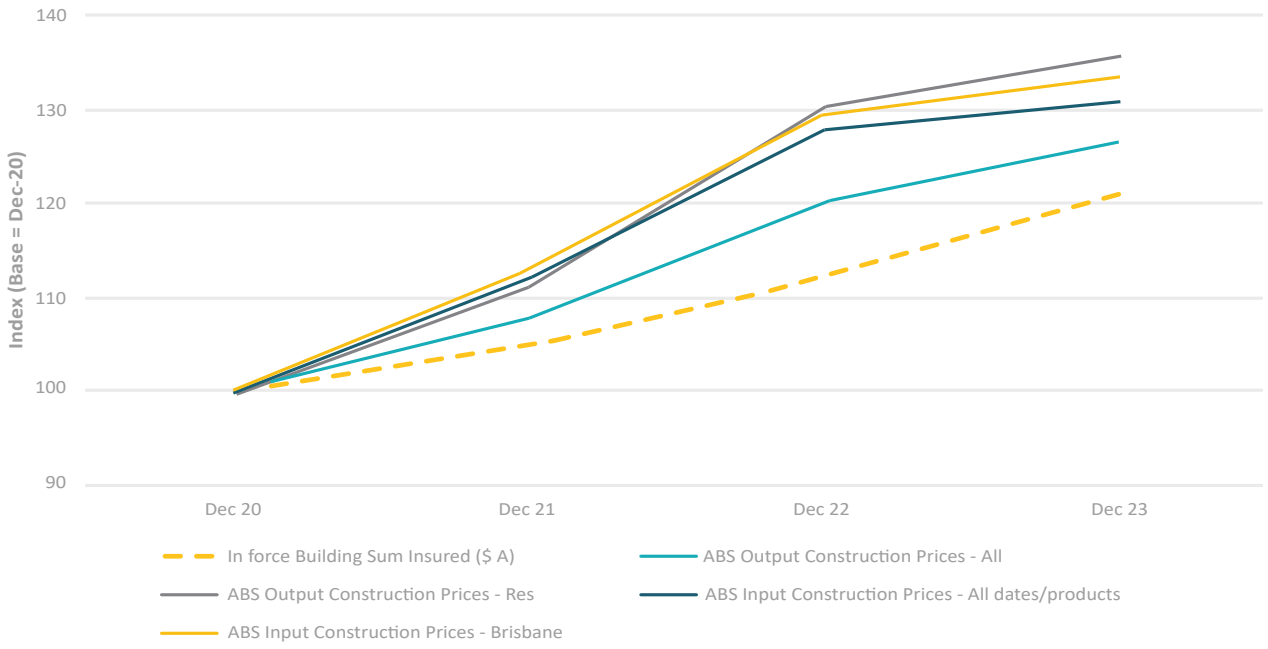
With house construction price inflation moderating significantly in the past 12 months, inflationary pressures on the cyclone pool's claims costs are likely to be reduced.

Policyholder sums insured are typically intended to reflect the rebuild cost of a property. The cyclone pool premium formula is expressed as a rate per sum insured, which reflects the level of risk for each building. Therefore, to the extent that sums insured increase in line with inflation and continue to reflect the rebuild cost of a property, any higher claims costs to the cyclone pool will be offset by higher premium income. Therefore, over the long-term, it is not expected that the high levels of inflation in recent years (particularly 2021 to 2023) will impact the adequacy of the premium rates.

However, in the short-term, the high rate of building cost inflation in recent years is likely to have outpaced increases in sums insured, contributing to underinsurance. This occurs for several reasons such as delays in actual inflation levels being recognised by insurers or policyholders moderating premium increases by limiting increases to sums insured.

Figure 6.4 compares a range of ABS construction cost indices with insured buildings sum insured information from Insurance Statistics Australia (ISA), for the three-year period from December 2020 to December 2023.

Figure 6.4: Construction cost vs building sum insured indices



Sources: Australian Bureau of Statistics; Insurance Statistics Australia

The ABS construction cost indices suggest that building costs increased 25 to 35 per cent over this period, compared to 20 per cent for ISA in-force building sums insured. This suggests there is currently a gap between sum insured (what cyclone pool premiums are based on) and construction costs (what cyclone pool claims are likely to follow). However, given the slowing inflationary environment and allowing for insurance processes to reflect current costs, this theoretical mismatch is expected to correct as sum insured indexation earns through insurer renewal processes.

Moderating inflation levels have reduced the previously identified risk of short-term premium inadequacy arising from high levels of building cost inflation. Over the long-term, any higher costs are expected to be reflected in higher sums insured and therefore not expected to impact premium adequacy.

6.4 Underinsurance

Ongoing cost of living pressures may increase levels of underinsurance as policyholders reduce the level of insurance purchased to manage expenditure. This is commonly done by choosing a sum insured level less than the total rebuild cost. Claims that result in a complete rebuild (or total loss) are limited by the amount of the policy sum insured, so underinsurance on total loss claims does not impact premium adequacy. However, for non-total loss claims, underinsurance may lead to a higher ratio of claims costs to premiums, and therefore negatively impact premium adequacy.

ARPC intends to use property replacement cost data to provide insights into the extent and spread of underinsurance.

Action 2B: Use the cyclone pool exposure dataset and property replacement cost data to better understand the impact of under-insurance on premium adequacy. These insights will be used to inform future pricing reviews

6.5 Catastrophic event/s

Cyclone risk is highly volatile, with the potential for low probability high severity events to occur in any given year. A severe cyclone (or series of cyclones) within a relatively short timeframe has the potential to deplete the cyclone pool's net asset position.

ARPC manages capital in line with its Capital Management Policy, with this risk specifically addressed through the annually reinstated Commonwealth guarantee which provides additional funding support when required.

6.6 Insurer claims management

Claims are managed directly by insurers, with costs subsequently recovered from the cyclone pool. Given that the cyclone pool reinsures 100 per cent of eligible claims, it is important that ARPC maintains incentives for insurers to settle claims arising from cyclones efficiently. Otherwise, it may lead to claims leakage (the cost of settling claims being higher than required if managed efficiently), which increases the cost of claims from cyclone events and poses a risk to long-term premium adequacy.

ARPC manages this risk through claim validations, audits, and portfolio benchmarking. Internal claims validation processes include comparing claim postcodes with a map of impacted postcodes and validation of claim timing. The claims audit is performed once claims for a cyclone event have been substantially paid. A sample of claims is assessed to determine whether they have been paid in accordance with claims processing guidelines, and underlying documents are validated to assess whether the claim amount is consistent and reasonable.

ARPC also intends to develop a fraudulent claim identification framework over the next 12-24 months to support the monitoring and identification of potentially fraudulent claims.

ARPC will continue to monitor and mature claims management activities (including validations, audits, portfolio benchmarking and fraud identification) to reduce the risk to claims management outcomes.

6.7 Changes to insurer product coverage

The cyclone pool covers eligible cyclone claims consistent with the underlying insurer's Product Disclosure Statement. The Home premium structure seeks to price for differences in insurer coverage levels though a simplistic 'Coverage Level' modifier[28]. There is a risk that insurer coverage changes over time and results in claims coverage that is more generous than allowed for in the premium rating. There is no 'Coverage Level' modifier currently in place for SME or Strata properties.

Action 3: Review the product coverage rating for Home. Assess whether a product coverage rating is required for SME and Strata properties.

6.8 Data quality

ARPC relies on insurers to provide complete and accurate data for both premiums and claims. Inaccurate or incomplete submission of data could understate or overstate the cyclone pool's risk exposure, premium income or claims cost. If an insurer is unable to provide data for a specific rating variable, an "Unknown" option is available for each variable. Similarly, where an insurer does not collect a geocoded address (linking to the Geocoded National Address File (G-NAF)), a fallback postcode table is used to calculate premiums. Table 6.3 shows the proportion of missing or unknown values for key rating variables as at March 2024.

Table 6.3: Proportion of unknown values for key rating variables as at March 2024

	G-NAF	Construction Type	Roof Type	Year of Construction	Number of Storeys
Residential	17.8%	27.7%	39.0%	12.3%	53.6%
SME	45.5%	24.7%	57.9%	61.5%	88.5%
Strata	32.6%	5.9%	17.2%	13.6%	17.1%
Total	**19.9%**	**27.0%**	**39.7%**	**15.5%**	**55.0%**

Improved data quality will assist ARPC to achieve its legislative objectives. Currently ARPC's premium formula charges an average premium rate for rating factors where the insurer does not collect or is unable to provide rating information (Year of Construction is an exception as collection is consistent with standard industry practice).

Action 4: Consider incentivising insurers to collect complete and accurate data by phasing in premium rate loadings for missing rating variables after insurers have had sufficient time to collect this data.

[28] A modifier in the cyclone pool pricing formula that is intended to adjust the cyclone pool premium based on the level of coverage in the insurer's PDS.

6.9 Monitoring of key risks

Many of the risks identified in this section develop over the longer-term and as a result require continual monitoring. ARPC performs internal quarterly monitoring of premium data. This includes tracking of key indicators which may impact premium adequacy including flood insurance take-up by insurer and CRESTA, the proportion of missing or unknown rating variables, and implied sum insured inflation.

In addition, premium adequacy ratios are a key metric which are assessed in every regular pricing review. Premium adequacy ratios are monitored at an overall level, as well as by risk band, class of business, and peril. Changes in adequacy ratios may be a result of:

- Changes in insurance take-up and flood coverage take-up by risk band
- The level of growth in new properties in medium and high-risk regions exceeding that of low-risk regions

As part of the pricing review, the level of sum insured inflation in updated insurer exposure data is compared against building cost inflation indices, to understand any mismatch between sum insured inflation (which drives premium) and construction cost inflation (which drives claims).

ARPC will continue to monitor key risk metrics including premium adequacy ratios, insurance take-up rates, and sum insured inflation on an ongoing basis.

07 OBSERVATIONS ON CAPITAL MANAGEMENT

7.1 Overview of the factors affecting the capital position of the cyclone pool

The primary objective of capital management for the cyclone pool is that assets are available to meet financial obligations as they fall due where possible.

The cyclone pool meets the cost of claims from the following sources:

- Funds available from previous premium collection, including any investment income accumulated.
- A $10 billion Commonwealth guarantee as set out in the TCI Act (separate guarantees apply for cyclone and terrorism risk).
- Additional funds through Ministerial Direction.

The cyclone pool does not currently purchase retrocession. To meet the objectives of minimising premiums for high-cyclone risk policyholders, the cyclone pool seeks to minimise its overall cost base. Purchasing retrocession introduces margins to the cost base for the cyclone pool and these costs would need to be passed onto policyholders.

7.2 Summary of current Capital Management Policy

ARPC's approach to capital management and the flow of funds between the cyclone pool and the terrorism pool are based on the following principles:

- The financial positions and performance of the two pools are managed and measured separately.
- Inter-pool transfers from the terrorism would be utilised to pay for claims if there are insufficient assets from the cyclone pool. Any funds transferred between pools will be repaid over an appropriate time horizon.

The cyclone pool premium rates have been set to target 100 per cent adequacy over the long-term. However, due to the high levels of volatility in cyclone activity, the cyclone pool is expected to either accumulate assets or be in deficit at any point in time.

In ARPC's Capital Management Policy, the cyclone pool net assets[29] target (shown in Table 7.1) reflects the Board's appetite to call on the Commonwealth guarantee. This is currently set to cover a one in 20-year level of claims in any given year, equivalent to a 95 per cent probability of sufficiency. A net asset position materially different to 400 per cent of forecast premium (approximately $2.7 billion with current annual premiums) may result in management action. With the cyclone pool still in its early stages of development, it would take several years to accumulate assets to reach the target even with low levels of claims. This target is reasonable for the purposes of the cyclone pool's asset management given the existence of the Commonwealth guarantee.

Table 7.1: Cyclone pool net assets target

Capital Target	Rationale	Threshold
Available Asset Target	Covers a 1 in 20-year level of losses over the next year, equivalent to a 95% probability of sufficiency	400% of forecast premium[(a)]

[(a)] *Based on modelled distributions expressed as an approximate percentage of premium to scale with size of pool*

[29] Net assets are defined as assets less liabilities, excluding any repayment obligations for calls made on the Commonwealth guarantee

7.3 Liquidity management

ARPC's investment objectives are to maintain a low level of investment risk, low portfolio volatility, and to ensure funds are available to meet expected claim obligations. Investment decisions are informed by cash flow modelling that considers the expected payment pattern of events. Large cyclone events may occur at any point during the cyclone season (November to May).

As at 30 June 2024, 35% of the cyclone pool's $686 million non-cash investments will mature before 31 December, with 85% to mature before 31 March 2025 to pay for claims arising from the upcoming cyclone season.

7.4 Projections and scenario testing

The following subsections show how ARPC's capital position could change under potential future scenarios:

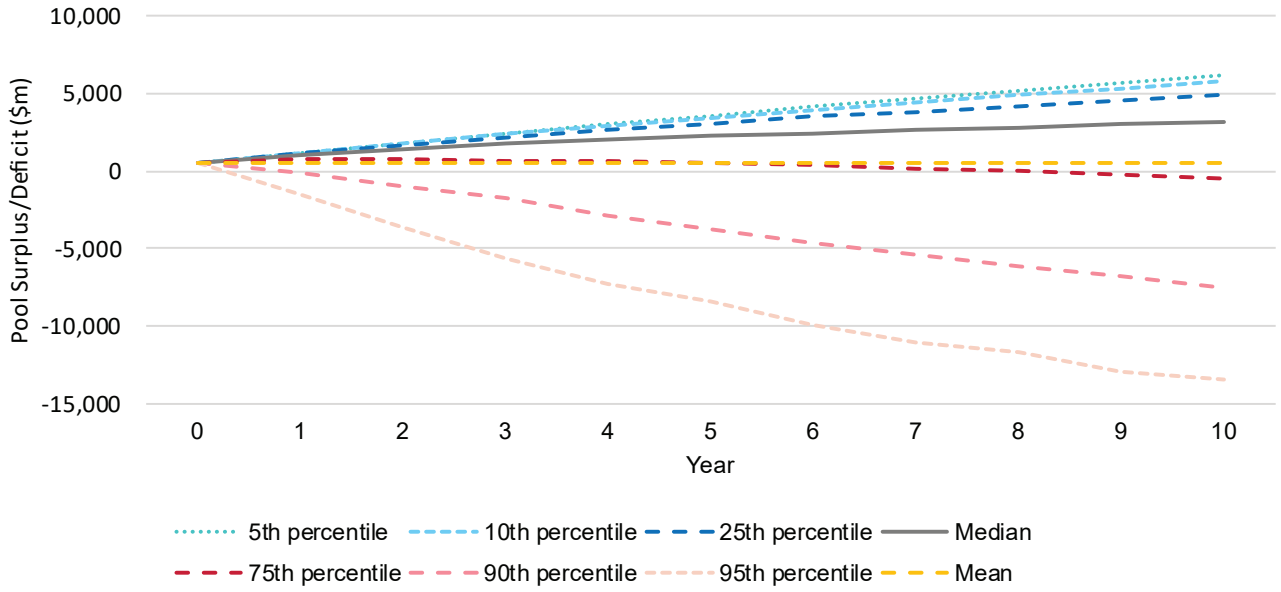
- Baseline – Projection of capital position over 10 years based on current net assets and modelled distribution of losses
- Scenario 1- Stressed scenario with a $10 billion event in the next year
- Scenario 2- Median losses of approximately $70 million each year for 5 years
- Scenario 3- Normalised claims costs for cyclone events from 1967 to 2024

7.4.1 Baseline projection

The 'funnel' of financial outcomes shown in Figure 7.1 represents the probability distribution of the cyclone pool's cumulative surplus/deficit position over the long-term. These simulations make the following assumptions:

- The starting capital position used is $479 million, which reflects the cyclone pool's position as at 30 June 2024.
- The cyclone pool is at a steady state level of exposure.
- The simulations do not allow for any management actions.
- Premium rates are equal to estimated claims cost plus operating expenses such that the cyclone pool is at 100 per cent adequacy in the long-term.
- Investment income is set to zero. Investment income could become material if the cyclone pool builds up a significant level of assets.

Figure 7.1: Distribution of financial outcomes for the cyclone pool over 10-year time horizon



The potential financial outcomes for the cyclone pool are highly variable. After 10 years, the cyclone pool has:

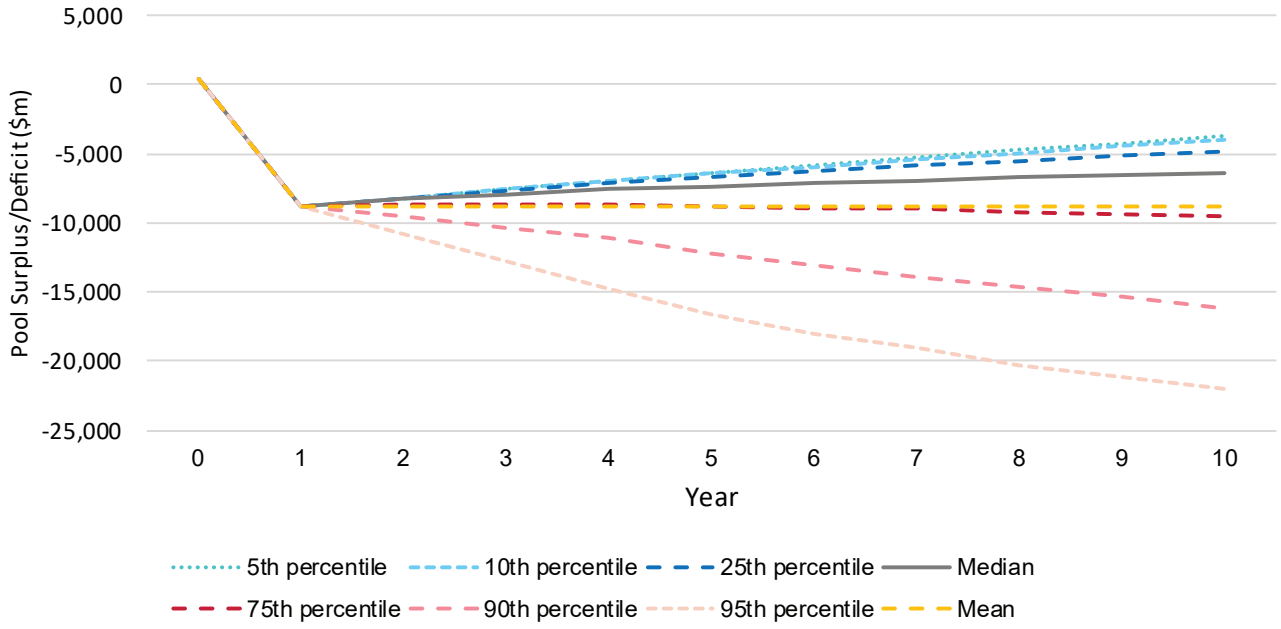
- an average balance equal to its starting cumulative surplus position ($479.5 million), reflecting the long-term target of 100 per cent premium adequacy ratio (the "mean" line) i.e. it does not build a surplus or deficit
- a 55 per cent chance of a surplus more than 4 times the annual premium, and therefore accumulating assets above target
- a 27 per cent chance being below 25 per cent of annual premium, and therefore accumulating assets below target.
- 25 per cent chance of a $4 billion surplus or more
- 10 per cent chance of a $6 billion deficit or worse

ARPC's Capital Management Policy recognises the wide range of potential financial outcomes for the cyclone pool and does not require management action in response to small surpluses or deficits.

7.4.2 Scenario 1: $10 billion cyclone event in first year

An extreme cyclone event, or series of events, could lead to a material deficit for the cyclone pool, which would require calling on the Commonwealth guarantee. Figure 7.2 shows the distribution of financial outcomes if there was a $10 billion cyclone event in the coming year. The probability of at least $10 billion of claims costs in the coming year is approximately one per cent.

Figure 7.2: Distribution of financial outcomes for the cyclone pool given a $10 billion event in year one



This scenario would require a substantial call on the guarantee after using available assets from both the cyclone and terrorism pools. From the distribution of outcomes, it is evident that even with modest claims experience in future years, there is very little chance of the cyclone pool recovering to a net zero position within 10 years. Increasing premium rates will not be an effective method of reducing the deficit, as even a 25 percent premium rate increase (approximately $170 million per year) will only improve the mean deficit from $8.9 billion to $7.5 billion.

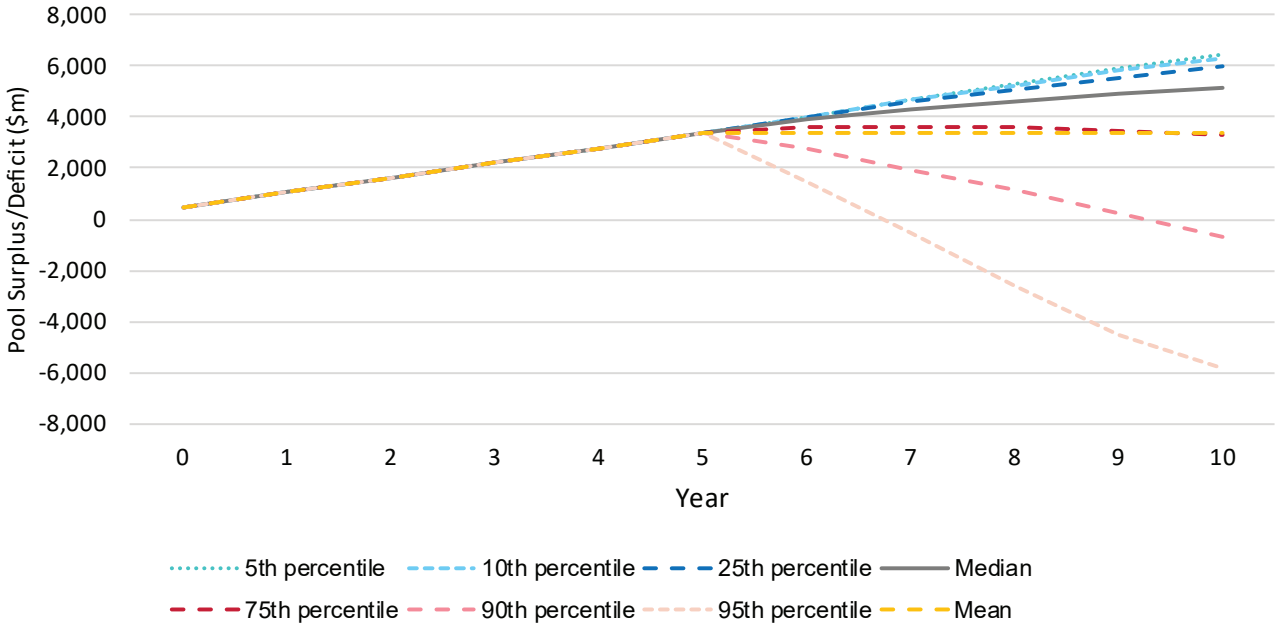
The target of 100 per cent adequacy over the long-term will need to be balanced with the objective of improving insurance affordability and availability in medium to high-risk regions, and the capital position of the cyclone pool.

7.4.3 Scenario 2: Median claims costs for five years

The median modelled claims cost is lower than the target premium pool due to the skew of the claims cost distribution, so it is expected that the cyclone pool will accumulate assets in most years and pay out claims in excess of premium in some years. Low cyclone activity across multiple years of operation could lead to the build-up of a material net-asset surplus.

Figure 7.3 considers a scenario where the cyclone pool has a median level of claims (approximately $70 million per year) for the next five years, resulting in a $3.4 billion surplus. The probability of the cyclone pool accumulating more than a $3 billion surplus after five years is approximately 27 per cent. There is approximately a 10 per cent chance that the cyclone pool will return to a zero-surplus position by its tenth year under this scenario in the absence of management actions.

Figure 7.3: Distribution of financial outcomes for the cyclone pool given median claims



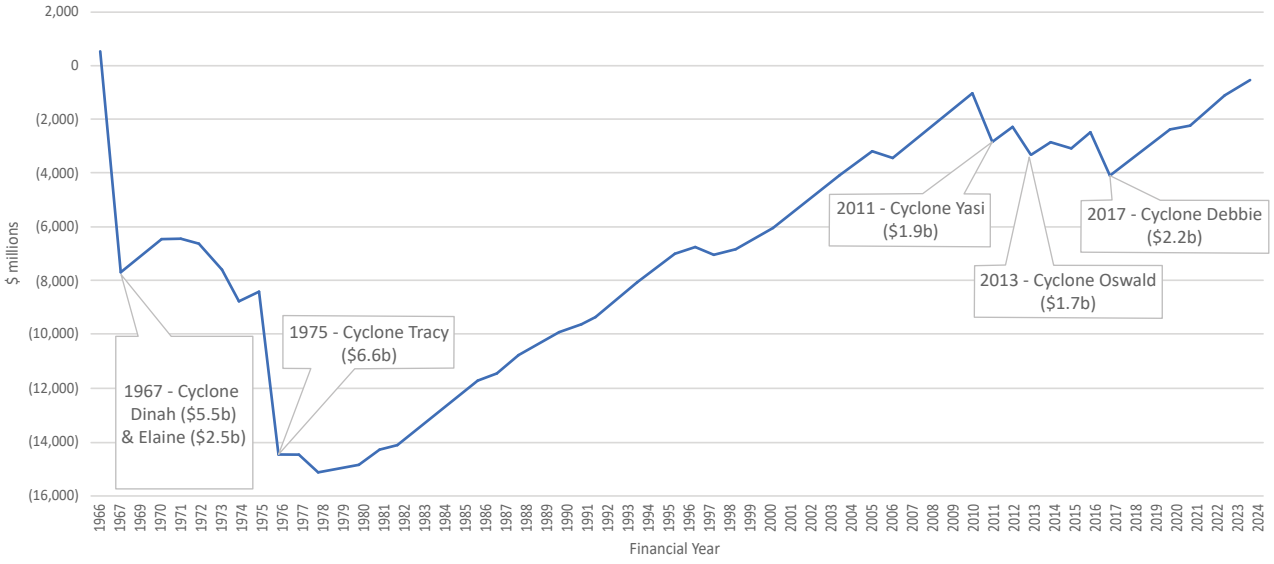
In this scenario, investment income for the cyclone pool is expected to be material. This will increase the capital available to fund the payment of claims from future cyclone events.

7.4.4 Scenario 3: Historical cyclone claims costs since 1967

Figure 7.4 shows the cyclone pool surplus/deficit if the cyclone pool had existed since 1966, with claims costs from historical events adjusted to 31 December 2023 values for inflation, changes in exposure and changes in building codes. Due to early events being more than 50 years ago, there is significant subjectivity and uncertainty in the normalisation of costs for these events.

The chart highlights the impact of a few large events on the cyclone pool funding position, where the cyclone pool goes into significant deficit following a large event (e.g. Cyclone Tracy) before accumulating 13 billion in assets between 1975 and 2010 as claims costs are below the modelled AAL in these years. Under the historical claims cost scenario, the net asset position at the end of 2024 will be a deficit of only $574 million (comparable to one year of premium).

Figure 7.4: Cyclone pool funding position if it existed since 1966



Source: ICA data estimated for cyclone pool eligible losses

ARPC's approach to asset management is appropriate for a portfolio with significant volatility and the backing of the Commonwealth guarantee. The assets accumulated to date are modest in the context of the range of potential outcomes and volatility in future experience.

08 ACTIONS

8.1 Update on 2023 FOR actions

Table 8.1 provides an update on the 2023 FOR actions, with some actions completed in the 2023-24 financial year and some continuing into 2024-25 as planned.

Table 8.1: Update on 2023 FOR actions

Number / Category	2023 Action	Planned Timeframe	2024 Update
1. Premium rates	Unless there is a significant change in circumstances, no material changes to be made to the overall level of premium rates until more time has elapsed for experience to develop.	12 months	**Complete**. The 2024 Pricing Review was completed, with no material change in premium rates required.
2. Investment income	Consider how investment income on accumulated assets could be used to support the cyclone pool in achieving its objectives under the TCI Act.	12-24 months	**Complete**. Investment income on accumulated assets will be used to support future claims.
3. Inflation	The impact of the high levels of building cost inflation on premium adequacy to be considered over the long-term. Management to monitor the inflationary environment and consider action if required in the future.	12 months	**Complete**. Inflation has reduced over the last 12 months. No inflation adjustment was recommended in the 2024 Pricing Review.
4. Climate change	Undertake future climate change scenario testing to better understand the potential quantitative impacts of climate change on the cyclone pool under a range of projected warming scenarios.	12-24 months	**In progress**. Modelling for APRA Climate Vulnerability Assessment scenarios is in progress and will be finalised over the 2024-25 financial year.
5. Premium rates	Review the risk pooling in the premium rates to confirm these are still appropriate for the exposure once most insurers have joined.	12-24 months	**Complete**. This was reviewed as part of the 2024 Pricing Review and is still considered appropriate. It will be monitored and reviewed again in the 2025 Pricing Review.
6. Insurance take-up rates	Insurance take-up rates to be analysed and monitored as the cyclone pool matures to understand the impact on premium adequacy and the impact the cyclone pool is having on insurance availability.	12-24 months	**Ongoing**. Overall insurance take-up rates have been analysed as part of the 2024 Pricing Review, however with no material impact on premium adequacy. Monitoring is ongoing.
7. Unknown data	Incentivise insurers to collect additional risk data to increase premium accuracy for policyholders by introducing a timeline for penalty premium rates for unknown rating data.	24-36 months	**Planned for 2025**.
8. Risk mitigation	Consider how risk mitigation discounts (that currently exist for Home) can be extended to SME and Strata and include in the premium rating structure where appropriate.	12-24 months	**In progress**. Strata mitigation discounts have been proposed in the 2024 Pricing Review (and will be effective from April 2025). SME risk mitigation will be considered in future reviews.

8.2 2024 FOR actions

Table 8.2 summarises the key actions arising from the 2024 FOR. Note that actions focus on specific additional activities to be undertaken by ARPC, rather than those already carried out as a part of normal business operations.

Table 8.2: 2024 FOR actions

Number / Category	2024 Action	Planned Timeframe
1. Risk mitigation	Monitor take-up of existing mitigation discounts by region and consider initiatives to improve take-up. Consider how mitigation discounts can be extended to SME and included in the SME premium rating structure in the future.	12-24 months
2. Under and non-insurance	Use the cyclone pool exposure dataset and property replacement cost data to better understand levels and drivers of under and non-insurance. These insights will be used to inform future pricing reviews.	12-24 months
3. Product coverage rating	Review the product coverage rating for Home. Assess whether a product coverage rating is required for SME and Strata properties.	12-24 months
4. Data quality	Consider incentivising insurers to collect complete and accurate data by phasing in premium rate loadings for missing rating variables after insurers have had sufficient time to collect this data.	12-24 months

09 APPENDICES

APPENDIX A: DATA

The analysis in this report relies on data supplied to ARPC by insurers who have joined the cyclone pool, modelling data from the 2024 Pricing Review and the Initial Pricing Review, publicly available data sources, and data licensed by ARPC.

Data sources	Description	Table/Figure	Data Date
ARPC data			
Financial statements	ARPC's financial statements.	Table 1.3, Table 3.1, Table 3.3, Table 3.4, Table 3.7, Figure 3.3, Table 3.9, Table 5.1, Table 5.2	30 June 2024
Financial projections	ARPC's financial projections for the previous year (financial year 2023-24). These reflect the final approved budget for 2023-24 and may differ slightly from shown in the 2023 FOR.	Table 1.3, Table 3.1, Table 3.3, Figure 3.1, Table 3.7	1 July 2023
	ARPC's financial projections over the next three financial years.	Table 1.3, Table 3.2, Table 3.3, Table 3.5, Table 3.6, Table 3.8, Figure 7.1, Figure 7.2, Figure 7.3	31 December 2023
Insurer data submissions			
Unexpired Risk Transfer Report, Quarterly Movement Report, Policy Level Claims Report	Datasets provided by insurers when transferring in-force risks to the cyclone pool, and thereafter on a quarterly basis.	Table 4.5, Table 6.3	31 March 2024
	Policy datasets contain a record for each risk to be ceded to the cyclone pool. Data fields include: • Unique location identifier • Exposure period • Location • Rating information including class of business, sums insured, excess, building characteristics, and policy coverage • Transaction information • Annual ARPC reinsurance premium • ARPC reinsurance premium owing for the remaining time on risk Claims datasets contain a record for each claim with incurred cost recoverable from the cyclone pool. Data fields include: • Cyclone event designation • Location • Date and time of loss • Claim status • Claim description • Paid to date and case estimates	Figure 6.1, Table B.1	31 December 2023

Data sources	Description	Table/Figure	Data Date
Pricing data			
Exposure Data Module, G-NAF technical rates	Exposure Data Module (aggregated and de-identified). Data fields include: • Location (aggregated) • Sums insured • Building characteristics such as construction type • Policy characteristics such as class of business and coverage G-NAF technical rates (cost per sum insured) for Wind, Flood and Surge developed during the 2024 Pricing Review and Initial Pricing Review.	Table 1.5, Table 4.2, Table 4.3, Table 6.1	31 December 2023 February 2024
Catastrophe model data			
COMBUS catastrophe model event loss table, RMS catastrophe model event loss table	Event loss tables with probability of event occurring and cost given the event occurs modelled using the Exposure Data Module.	Figure 1.1, Figure 3.1, Table 3.5	31 December 2023
Historical loss data			
Insurance Council of Australia historical Catastrophe List	List of catastrophes and associated costs reported by insurers to the Insurance Council of Australia, normalised to allow for growth in the number of dwellings and inflation.	Figure 7.4	January 2024
Economic data			
Australian Bureau of Statistics- Consumer Price Index, Producer Price Index	Historical inflation information.	Figure 6.3	30 June 2024
Other external data			
Early Warning Network	Provides wind buffers of tropical cyclones.	Figure 3.2	Varies depending on cyclone event date
Geoscape G-NAF	Dataset that contains all physical addresses in Australia.	Figure 6.2	February 2019 and February 2024
Insurance Statistics Australia	An industry-owned data collection and analysis service of statistics made available to subscribers only.	Figure 6.4	December 2023

APPENDIX B: FINANCIAL PROJECTION APPROACH

This appendix describes the approach for producing the premium and claim projections for financial years 2024-27 that are shown in Section 3 in this report. These are consistent with the assumptions underlying ARPC's budgeting process.

Premium

Premiums are projected by:

- Using in-force premium data for insurers in the cyclone pool as at 31 December 2023.
- Estimating the total ultimate insured cyclone pool premium once all expected insurers have joined the cyclone pool.
- Allowing for inflation of sums insured, and building dwelling growth.

Table B.1 shows the proportion of ultimate exposure assumed to have joined the cyclone pool at the time of the budget projections.

Table B.1: Proportion of ultimate exposure assumed to have joined at 31 December 2023

Residential Buildings	Residential Contents	SME Buildings	SME Contents	SME Business Interruption	Strata
97%	97%	73%	54%	61%	93%

Table B.2 shows the inflation and building growth assumptions used in the financial projections. The projections assume that sum insured inflation will be 7.5 per cent until December 2024 before levelling at 4.5 per cent. Premiums will also increase as new properties are built and insured. The projection assumes that there will be dwelling growth of 1.2 per cent per year based on the historical net growth of buildings.

Table B.2: Inflation assumptions

Assumption	%
Sum insured inflation (p.a)	
Jun-23 to Dec-24	7.5
Dec-24 onwards	4.5
Growth in Dwellings (p.a)	**1.2**

Claims

Claims are projected using a loss ratio assumption of approximately 96.6% (which includes eligible insurer claims handling expenses), across the projection years. This is derived from the 2024 Pricing Review, and adjusts for estimated future joining insurers by class of business.

APPENDIX C: ESTIMATING NON-INSURANCE RATES

ARPC builds up an address-level view of non-insurance by residential buildings and contents by leveraging insurer exposure data together with additional data sources. Although this area has been identified as an area of focus for continued research and development, the current dataset has enabled ARPC to begin to dissect the drivers of non-insurance.

Estimating insurance take-up rates

Insurance take-up rates are calculated as the number of insured properties divided by ARPC's view of the total eligible cyclone pool properties. The numerator is calculated through the exposure data that insurers provide ARPC on the properties they insure. The denominator combines Census data, external Strata property data and data provided by insurers to form a view of the total insurable market eligible for the cyclone pool. At a high level, this process involves:

- Using Census data to estimate the total number of cyclone pool eligible dwellings (including both Home and Strata).
- Constructing a view of Strata properties using external data[30] to estimate the number of Strata properties and the number of individual dwellings within each Strata property.
- The number of Home properties is then equal to the Census total minus the number of individual Strata dwellings.
- For contents take-up, the number of insurable policies is equal to the sum of the insurable Home properties and number of dwellings in Strata.

The underlying dataset is produced at an address-level, therefore enabling the capability to link with an array of other data sources that might explain the drivers of non-insurance.

Limitations to the non-insurance analysis

Although ARPC's view of non-insurance and the underlying address-level dataset has provided ARPC significant insight into the drivers of non-insurance, there remains an ongoing opportunity to continue to improve the methodology and utilise additional data sources. Specifically, the allocation of policies and insurable properties to an address-level is the area of most significant improvement opportunity. Therefore, dissecting non-insurance at a flood risk band level has the highest limitation in this analysis due to the high variation that can occur in flood risk at a local level.

[30] Geoscape Australia land parcel data, as well as other data sources such as state strata registries in WA and QLD

APPENDIX D: UNCERTAINTY IN MODELLING CYCLONE RISK

ARPC draws on multiple catastrophe models in combination with additional analysis and expert input to establish a view of risk. The following summarises key areas of uncertainty or potential gaps related to ARPC's catastrophe modelling:

- Strata vulnerability, particularly regarding wind and wind-caused rain ingress for large strata, is not well understood in the catastrophe models and/or in available vulnerability studies.
- Historical industry claims experience does not potentially support the high-level of cyclone risk estimated in North WA by CAT models, and consequently embedded in APRC's view of risk and pricing.
- Pluvial flood is modelled as part of the wind peril with a low degree of consideration/understanding of the risk variation by geography.
- ARPC draws on a handful of available commercial models with the objective to have a market leading view of risk through model blending. Over time, ARPC may change, add or remove commercial models used in our view of risk, which may change our view of current premium sufficiency. Additionally, vendors may improve/update their model suite.
- Limited claims experience to date means ARPC does not have an established in-house view of vulnerability curves and largely relies on commercial products and/or public studies.
- Attributing flood caused by cyclone is not a deeply researched study area in the scientific community. ARPC's view draws on multiple data sources and commissioned research and is considered to be based on reasonable assumptions.
- Completeness of data relating to flood defences (such as levees) is not consistent across commercial models and ARPC does not currently maintain a single view of flood defences.
- Licensed catastrophe models reflect the best view of risk currently but the extent to which climate change has impacted cyclone risk to date is highly uncertain.

ARPC continues to address these sources of uncertainty and gaps by:

- Commissioning focused studies on topics such as vulnerability, hazard modelling, flood attribution to cyclones and historical event analysis.
- Continuing to consider the appropriate use of commercial models as part of its solution to understanding risk, including the available market and selection of commercial models, as well as continuing to engage with vendors to address key modelling gaps.
- Leveraging claims experience and insights from exposure data to develop a refined view of vulnerability, model blending and overall risk.
- Undertaking internal research on topics such as the impact of climate change on cyclone risk and the capture of flood defences.

APPENDIX E: GLOSSARY

Data sources	Description
2024 Pricing Review	The most recent pricing review, with updated premium rates effective 1 April 2025.
Average Annual Loss (AAL)	The estimated average claims cost over a year for the cyclone pool. This amount includes recoveries paid to insurers for eligible claims but does not include claims handling expenses or ARPC operating expenses.
Case estimates	The insurer's estimate of total payments to be made for outstanding reported claims. Each claim is individually assessed.
Catastrophe models	A model that simulates catastrophic events to estimate potential claims.
Category 1-5 (tropical cyclone)	Tropical cyclone intensity scale based on maximum mean wind speed, with 1 representing the lowest severity and 5 representing the highest severity.
Claims leakage	The difference between what an insurer spent to settle a claim versus the amount that should have paid in a genuine, efficient transaction.
Claims Ratio	Total claims costs divided by total premiums.
COMBUS	Catastrophe modelling organisation
Coverage Level modifier	A modifier in the cyclone pool pricing formula that is intended to adjust the cyclone pool premium based on the level of coverage in the insurer's PDS.
CRESTA	CRESTA (Catastrophe Risk Evaluating and Standardising Target Accumulations) zones are part of an international geographic zoning system which helps brokers and reinsurers manage natural hazard risk.
DCE	Declared Cyclone Event
Earned premium	The portion of a policy's written premium that is earned based on time elapsed since the policy effective date and a pattern of risk over the policy term.
FOR	Financial Outlook Report
G-NAF	The Geoscape Geocoded National Address File is a dataset that contains all physical addresses in Australia.
Home	A standalone residential property that is not a Strata policy.
IBNR	Incurred But Not Reported claims are claims that have taken place but have not yet been reported to the insurer.
Incurred claims cost (ultimate)	The total projected claims cost comprising of paid to date, outstanding amounts and IBNR.
Fluvial flooding	Fluvial flooding (riverine) occurs when water in a river, lake or other water body overflows onto the surrounding banks and land.
Initial Premium Rates	The premium rates determined in the Initial Pricing Review in 2022.
Initial Pricing Review	The first pricing review effective 1 October 2022.
Insurance take-up / non-insurance rates	Calculated as the number of insured / non-insured properties divided by ARPC's view of the total eligible cyclone pool properties.
Modelled cyclone pool cost	The estimated AAL calculated in the Initial Pricing Review plus an allowance for ARPC's operating expenses and eligible insurer claims handling expense.
NEMA	National Emergency Management Agency
Net assets	Assets less liabilities, excluding any repayment obligations for calls made on the Commonwealth guarantee.
Non-insurance	Having no insurance to cover exposure to a risk.
Operating expense ratio	Total operating expense divided by total gross written premium including any levy income.
Pluvial flooding	Pluvial flooding (incorporating surface flooding and flash flooding) which can occur anywhere high rainfall occurs, such as the path of a cyclone.
Premium adequacy / ratio	Premium adequacy refers to the sufficiency of premiums to cover potential claims and expenses. The premium adequacy ratio is the ARPC cyclone pool premium divided by the modelled cyclone pool costs (the expected cost of claims, eligible claims handling expenses and cyclone pool operational costs).
Probability of exceedance	The likelihood that a particular event or value will exceed a certain threshold or level.
Probability of sufficiency	The likelihood that capital or liabilities will be sufficient to cover obligations.
Rateable sum insured	The insured value of a property defined by ARPC and used to calculate the ARPC reinsurance premium.
RBA	Reserve Bank of Australia
Residential	Refers to a policy where the property is used wholly or mainly for residential purposes.

Data sources	Description
Retrocession	Reinsurance purchased by reinsurance companies. Reinsurers retrocede risks to other reinsurers as a means of risk management.
Retrofit	Refers to the process of making improvements or upgrades to an existing home.
Return period	A recurrence interval used to estimate the likelihood of a specific event occurring within a given period of time.
Risk Frontiers	Catastrophe modelling organisation.
Risk Management Solutions (RMS)	Catastrophe modelling organisation.
Risk mitigation	An action or measure taken to reduce risk.
Scenario testing	A forecasting technique where hypothetical scenarios are created to assess the potential outcomes and impacts of various events.
SME	Small to Medium Enterprises (which are covered under the cyclone pool up to a maximum AUD $5 million sum insured limit).
Storm surge	An abnormal rise in sea level over and above the normal (astronomical) tide levels, commonly associated with a low-pressure system such as cyclones.
Strata	Refer to the definitions set out in items 4A (1) and (2), (3), or (4) of the *Terrorism and Cyclone Insurance Regulations 2003*.
Target premium pool	The premium rates are intended to achieve an overall target premium pool, which meets the expected cost of claims, claims handling expenses, and cyclone pool operational costs.
TC	Tropical Cyclone
TCI Act	*Terrorism and Cyclone Insurance Act 2003*
Total loss	A total loss occurs where the cost to rebuild or repair the property exceeds the sum insured.
Unclosed business	Premium income that is yet to be processed, but for which the entity is liable.
Underinsurance	Refers to when a policyholder's insurance coverage (sum insured) is less than the total rebuild cost.
Wind / Flood / Surge Risk Band	ARPC determined risk bands by peril used to set premiums, indicating a relative level of risk.
Written premium	The total premium that a policyholder is required to pay for a policy.

APPENDIX F: LETTER OF ADVICE - REVIEWING ACTUARY

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Australian Government
Australian Government Actuary

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25 September 2024

Dr Chris Wallace
Chief Executive Officer
Australian Reinsurance Pool Corporation
Gadigal Country,
PO Box Q1432 Queen Victoria Building,
New South Wales, 1230

Dear Chris

JUNE 2024 FINANCIAL OUTLOOK REPORT

Section 40A of the *Terrorism and Cyclone Insurance Act 2003* (the Act) requires that the ARPC prepares a Financial Outlook Report (FOR) after the end of each financial year beginning on or after 1 July 2023. Subsection 33B(1)b of the Act requires that the Reviewing Actuary review each FOR and report to the Board on my findings. This letter summarises my review of the 30 June 2024 FOR.

Summary of key findings

- The FOR addresses the key areas set out in section 5E of the Regulations. The report assesses premiums, provides projections of outcomes and observations on capital management and risks facing the pool. I expect that the report will continue to set out actions to enhance the pool's ability to meet its objectives.
- The pool has experienced modest surpluses in each of its first two years of operation. The net assets of the pool are within a range of reasonably probable outcomes. This is consistent with expectations that a modest surplus will arise in most years but will be rapidly depleted following a less frequent and large cyclone.
- The 2024 pricing review confirms that premiums remain consistent with the pool's legislative objectives. Emerging pool exposure has been tested and it has been found that premiums continue to meet the legislative objectives. The new incentives proposed for strata mitigation are an important development. Investigating how these can be extended to SME policies is yet to be completed.
- As claims data matures an evidence base will be built to demonstrate the adequacy of claims reserves and validate selected risk margins.
- The FOR has articulated the financial risks faced by the pool and the steps being taken to monitor and, in some cases, manage those risks. The pool's ultimate response to adverse financial risk are premium increases. The FOR notes the primary action being taken is to monitor the identified risks. Identifying trends and working with insurers to limit the need for premium increases supports improved outcomes for policyholders.
- I concur with the actions set out in the FOR.

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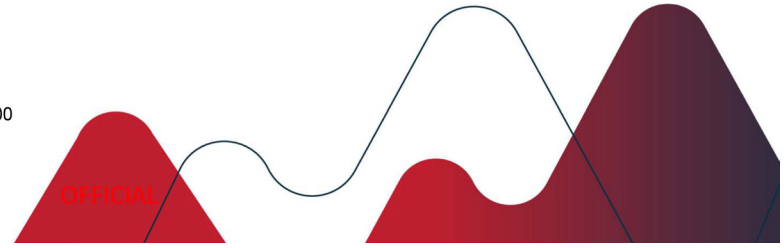

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Financial Outlook Report

Section 5E of the *Terrorism and Cyclone Insurance Regulations 2003* (the Regulations) sets out the minimum content that is required to be included in the FOR. This states that a Financial Outlook Report must include:

a) an overview of the performance of the cyclone reinsurance scheme during the financial year;
b) observations on broader financial risks affecting the scheme's financial outlook;
c) an assessment of the adequacy of:
    i) the premiums the Corporation is receiving under cyclone reinsurance contracts; and
    ii) the Corporation's reserves that are available to meet claims under those contracts;
d) observations on capital management for the purposes of the scheme;
e) projections for financial outcomes for the scheme, based on estimates of future claims under cyclone reinsurance contracts;
f) any other matters that the Corporation considers material to the current and future financial situation of the scheme.

Information Received

To complete this review, I have been provided with [1] a draft June 2024 FOR on 24 September 2024; [2] the models used to determine outstanding claims provisions; [3] the *Australian Reinsurance Pool Corporation – Approach to setting risk margins*, a process note for setting risk margins for claims provisions; and [4] the *Australian Reinsurance Pool Corporation Cyclone Pool & Terrorism Pool – Actuarial Valuation Report as at 30 June 2024*, setting out the results of the outstanding claims valuation.

I have discussed elements of the information provided with the ARPC actuarial team and TaylorFry. I have relied on this information for the purpose of this review.

Review of the Financial Outlook Report

Overview of the performance of the scheme during the financial year.

Section 3 of the FOR provides an overview of the performance of the Scheme during 2023-24.

The first two years of the pool's operation were characterised by increased exposure to the risk of cyclones as insurers joined the pool. Not surprisingly, this has resulted in increased premium income and increased claims.

In both of these years, claims have been below the modelled long-term average and this has allowed a modest level of assets (relative to the potential cost of some cyclones) to accumulate to fund future cyclones. This is also not surprising. Section 3 of the FOR illustrates the skewed nature of the distribution of claims costs and that the $155 million in claims experienced in 2023-24, or less, could occur in roughly 2 out of every three years. The operating result of the pool is expected to be characterised by small operating surpluses in most years, with occasional years where a large cyclone occurs that depletes the pool and may result in a call on the guarantee.

Assessment of the adequacy of premiums.

Section 4 provides an assessment of the adequacy of premiums.

In 2022 premiums were set that were consistent with the legislative objectives of the pool. All large insurers have now joined the pool. ARPC now has additional information relating to the exposure to cyclone risk. Given this additional information, premiums were reviewed in 2023-24. The review recommended the introduction of discounts for mitigation activity on strata policies. The review also found that premiums remain consistent with the legislative objectives of the pool. I agree with this finding.

The FOR sets out four topics to be actioned in future pricing reviews. I concur with the actions outlined in the FOR and have the additional comments below.

1. The appropriateness of the premium structure is to be monitored on an ongoing basis. The sustainability of the current rates depends on the mix of risks reinsured by the pool and how the cyclone risk changes over time. Insurance policies are 12-month contracts that charge a premium for that year. It is expected that premium rates will steadily evolve over time as the risk changes from year to year.

2. The pool is offering reinsurance coverage that provides payments for claims in a manner that largely follows the policy issued by the direct insurer. ARPC therefore need to monitor changes in coverage over time. The FOR recommends reviewing the product coverage rating factor to ensure it remains current.

3. Premiums are based on catastrophe modelling. These models evolve over time as additional data becomes available. There was no update to the models used in the 2024 premium review. ARPC should consider whether this is necessary in future reviews.

4. The cyclone pool is required to incentivise risk mitigation. It does this through the premium discounts for mitigation for home insurance. Discounts are available for home policies and will be introduced in 2025 for strata policies. However: [1] ARPC are yet to develop mitigation discounts for SME policies; and [2] there is no penalty in the rating process for unknown risk factors when data is not collected by insurers. The FOR sets out that this will be addressed over the next two to three years. Whilst the pool will provide discounts for mitigation, examining these in the context of the overall resilience of housing stocks would be more meaningful.

Assessment of the adequacy of the reserves.

Section 5 sets out the outstanding claims liability and discusses the uncertainty in this estimate. Sources of uncertainty include:

- Uncertainty in the estimate of ultimate claims costs derived from catastrophe models: Initial estimates of ultimate claims costs are informed by modelled cyclones with similar characteristics. ARPC should monitor the performance of catastrophe models in the estimation of ultimate losses, as event data builds over time. Understanding sources of variation could

help improve early estimates of liabilities and validate the risk margin. Benefits may also accrue to the use of models in premium setting.

- Uncertainty in the chain ladder method:
  Uncertainty in the chain ladder method arises due to the immaturity of the experience to date and uncertainty in the use of experience from cyclones that occurred before the pool was established. Monitoring of actual and expected payments has commenced. Modelling the progress of the liability estimate (rather than just cash flow) could be used to further validate the selection of run-off factors and risk margin.

Despite these comments, I believe that the methods selected are an appropriate response given the immaturity of the available claims data. The experience to date is not sufficient to conclude that the current approach is inappropriate, or to suggest there any implications for premium rates. I regard the outstanding claims liabilities to be appropriate, based on the data available at 30 June 2024.

Considering the net assets of the CRP, and the scale of cyclone events to date, there is little risk to the financial outlook of the CRP from the adequacy of outstanding claims provisions.

The FOR reports unearned premium reserves of $223.5 million. I have not reviewed the calculation of this reserve as I do not have the written premium data. I note that assumptions regarding the seasonality of cyclones underpin this reserve. I expect these assumptions would be assessed in a future FOR.

Observations on the financial risks facing the scheme.

Section 6 focusses on broader financial risks affecting the financial outlook of the pool.

The clearest financial risk facing the pool is that of a severe cyclone, or series of cyclones, over insured areas. Cyclone risk is highly volatile, with the potential for low probability high severity events to occur in any given year. However, the pool has mitigated this financial risk with the Commonwealth guarantee, and associated provisions relating to its reinstatement and potential extension. It is therefore appropriate that the FOR focus on some of the more nuanced risks facing the CRP.

Changes in the mix of insured properties (through changes in insurance take up and the distribution of new buildings), climate change, inflation, underinsurance, insurers' claims management, changes in product coverage and data quality are the risks considered in the FOR.

The pool can ultimately respond to adverse financial experience through targeted premium increases. This underlines the importance of premium setting for the CRP. However, I note that relying primarily on premium changes to manage emerging financial risk may not lead to the best outcomes for policyholders. Where possible, it is preferable to monitor the risks and work with insurers to help manage these emerging risks before premium increases are necessary.

Observations on capital management

Section 7 of the FOR provides a description of the capital management plan and approach to liquidity management.

The capital management plan sets a target level of net assets, outside of which management action may occur. In the short term, it is quite reasonable to expect that assets may build up to significant levels, only to be expended on claims from a large cyclone. Similarly, a large cyclone in the short term may require a call on the guarantee that takes many years to recoup. Given the net assets of the pool are building towards the target level of net assets, no actions are proposed in respect to capital management in this FOR. This is appropriate.

ARPC invests its assets to be sufficiently liquid to meet expected future claims. The FOR illustrates how this has been implemented by ensuring the maturity profile of invested assets aligns with the next cyclone season. Quarterly premium income also provides liquidity to the assets held by ARPC. No actions are proposed regarding ARPC's approach to managing liquidity. This is appropriate.

Conclusion

The FOR provides an assessment of the pool at 30 June 2024. I support the actions set out in the FOR.

The pool is not a static entity. The properties covered, and the risk to which they are exposed will evolve over time. The pool will need to evolve with these changes. I look forward to the FOR, and its actions, evolving as emerging risks bear out in the experience.

Your sincerely

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