

Financing Resilience

Climate change is reshaping loss. Markets are repricing it unevenly. The residual lands on the balance sheet unless it is reduced, transferred or deliberately funded.

Sophie Griffin · Head of Climate, Sustainability & Resilience, Gallagher

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Insurance doesn't just protect resilience — it enables



AN ENABLER

Insurance is a commercial lever that lets a business adopt more efficient, more resilient and more sustainable practices — by protecting the downside to yield and margin.

Without it, even sensible operational changes can become commercially unviable. Each pair of goals, pursued alone, gives up the third.

SUSTAINABLE

Makes capex financeable.

Long-term decarbonisation, waste and water programmes need certainty — often the condition lenders require before releasing capital.

EFFICIENT

Makes lean operations viable.

Just-in-time inventory, single-source suppliers and long-lead equipment deliver margin but strip redundancy. Insurance restores the recovery path.

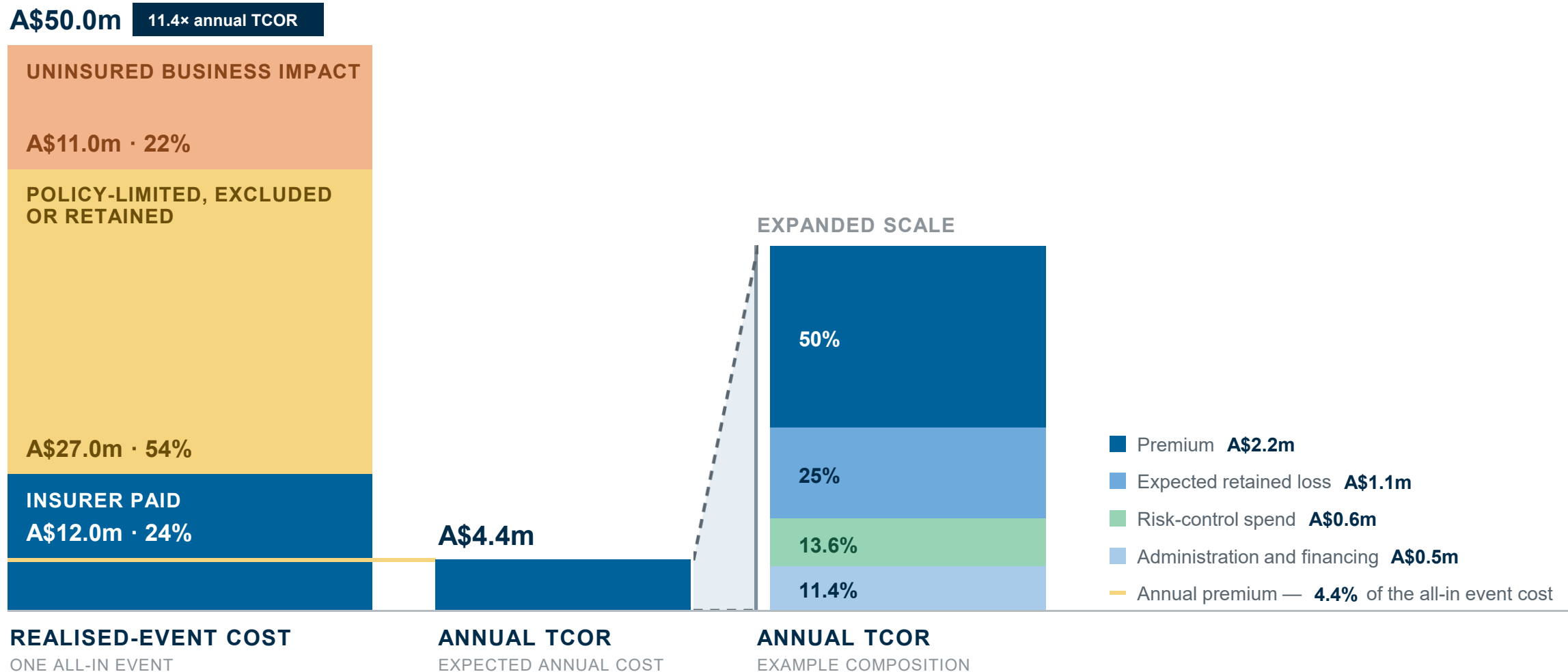
RESILIENT

Is the recovery mechanism itself.

It safeguards the balance sheet, cash flow and operations, so a potentially devastating event becomes a managed recovery.

Total Cost of Risk

Two measures, not one: what one event costs all-in, and what risk costs us every year.



Illustrative throughout — not a client programme or pricing indication.

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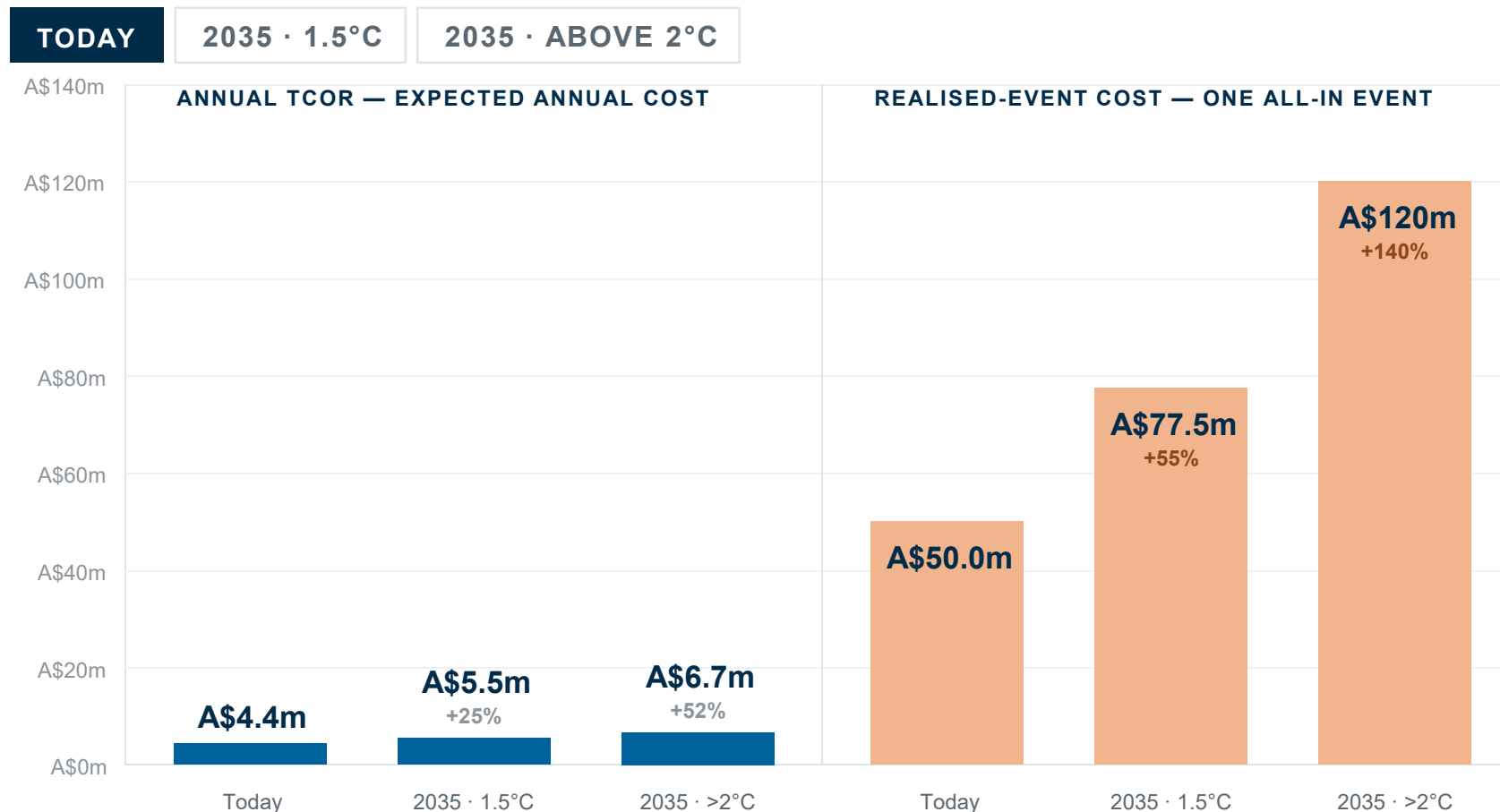
Make-up of a loss — are we considering everything?

EXAMPLE EVENT COSTS

A\$50.0m

INSURER PAID	POLICY-LIMITED, EXCLUDED OR RETAINED	UNINSURED BUSINESS IMPACT																																
A\$12.0m · 24% The policy responded properly — each line funded to its applicable limit or sublimit.	A\$27.0m · 54% Cost that can remain with the organisation — subject to the programme and wording.	A\$11.0m · 22% Economic loss with no damage trigger.																																
<table><tr><td>Water damage to plant and stock</td><td>A\$6.5m</td></tr><tr><td>Site clean-up</td><td>A\$2.0m</td></tr><tr><td>Lost gross profit</td><td>A\$3.5m</td></tr></table>	Water damage to plant and stock	A\$6.5m	Site clean-up	A\$2.0m	Lost gross profit	A\$3.5m	<table><tr><td>Damage above the flood sublimit</td><td>A\$8.0m</td></tr><tr><td>Environmental clean-up</td><td>A\$4.5m</td></tr><tr><td>Supplier interruption and road access</td><td>A\$3.5m</td></tr><tr><td>Third-party liability</td><td>A\$2.0m</td></tr><tr><td>D&O defence costs — retention and excess of limit</td><td>A\$1.0m</td></tr><tr><td>Product contamination and recall</td><td>A\$2.0m</td></tr><tr><td>ICOW, ACOW, debris and rebuilding above the flood level · A\$0.5m excess</td><td>A\$6.0m</td></tr></table>	Damage above the flood sublimit	A\$8.0m	Environmental clean-up	A\$4.5m	Supplier interruption and road access	A\$3.5m	Third-party liability	A\$2.0m	D&O defence costs — retention and excess of limit	A\$1.0m	Product contamination and recall	A\$2.0m	ICOW, ACOW, debris and rebuilding above the flood level · A\$0.5m excess	A\$6.0m	<table><tr><td>Customers switch during interruption</td><td>A\$3.5m</td></tr><tr><td>Loss of attraction — footfall and demand</td><td>A\$2.0m</td></tr><tr><td>Post-event regional downturn</td><td>A\$2.0m</td></tr><tr><td>Loss of staff and talent in recovery</td><td>A\$1.5m</td></tr><tr><td>Reputational recovery</td><td>A\$1.0m</td></tr><tr><td>Increased workers compensation cost</td><td>A\$1.0m</td></tr></table>	Customers switch during interruption	A\$3.5m	Loss of attraction — footfall and demand	A\$2.0m	Post-event regional downturn	A\$2.0m	Loss of staff and talent in recovery	A\$1.5m	Reputational recovery	A\$1.0m	Increased workers compensation cost	A\$1.0m
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Funded to the applicable limit or sublimit in each case.	Each line is qualified by wording, sublimit or extension.	No policy in this illustrative programme is designed to respond.																																

The annual cost rises; the realised-event cost compounds



THE COMPOUNDING EFFECT

The question is not what the asset cost to build. It is what it will cost to reinstate — at future prices, to a current standard, in a constrained market.

1 · RECONSTRUCTION COST RISES

2 · PREMIUM RISES WITH IT

3 · UNINSURED LOSS RISES TOO

SCENARIO BASIS

Australia's mandatory climate-reporting legislation requires analysis of at least a 1.5°C future and a future in which warming well exceeds 2°C. AASB S2 establishes the associated disclosure requirements.

Do we model future reinstatement cost — or only this year's premium?

Reduce, retain, transfer, finance

1

REDUCE

LOWERS EXPECTED LOSS

Reduces expected loss by lowering exposure, vulnerability or operational disruption. Physical and operational adaptation is the first-order control.

2

RETAIN

FUNDS SELECTED LOSS DELIBERATELY

Deliberately accepts and funds selected loss through deductibles, reserves, funded self-insurance, captive capital and committed liquidity.

3

TRANSFER

CHANGES WHO FUNDS VOLATILITY

Changes who funds selected volatility. It does not reduce the underlying physical loss.

4

FINANCE

SECURES CAPITAL AND LIQUIDITY

Secures internal and external liquidity and capital for adaptation, recovery and residual risk.

THREE ACTIONS

1

See the total cost



2

Structure the residual



3

Capture value

We budget the annual number. We do not forecast the event.

THE ASSET PLAN — FORECAST EVERY YEAR

Annual TCOR A\$4.4m sits inside this

- Insurance premium
- Maintenance and servicing
- Energy and operating cost
- Planned replacement capex
- Depreciation and assumed asset life

Smooth. Recurring. Signed off once a year.

THE EVENT — IN NO YEAR'S PLAN

One realised all-in event A\$50.0m

- Retained share — deductibles, sublimits, exclusions
- Uninsured economic loss — customers, downturn, reputation
- Betterment — the upgrade indemnity will not fund
- Capital diverted — growth and planned capex fund the recovery
- Contract penalties and tenders lost while recovering

Lumpy. Unbudgeted. Decided once, under duress.

WHAT THAT DOES TO THE CAPITAL PLAN

TIMING

The replacement you planned for later arrives now — unplanned, and on the worst terms.

FUNDING

Indemnity funds like-for-like. The upgrade to a current or lower-carbon standard is yours, unless extra-cost-of-reinstatement or code-upgrade cover responds.

DISPLACEMENT

Growth and planned capex fund the recovery instead of the strategy they were approved for.

Insurability should be part of the capex process — not just at renewal

Transition changes what an asset costs to run, to reinstate and to insure. The appraisal usually sees only the first.

LEGACY PLANT AND OBSOLESCENCE

Plant becomes obsolete → parts and skills scarce → reinstatement lengthens

Cover narrows, cost retained

The risk still has to be priced — and may prove intolerable, or incompatible with market appetite.

LOWER-CARBON / “MORE SUSTAINABLE” SUBSTITUTION

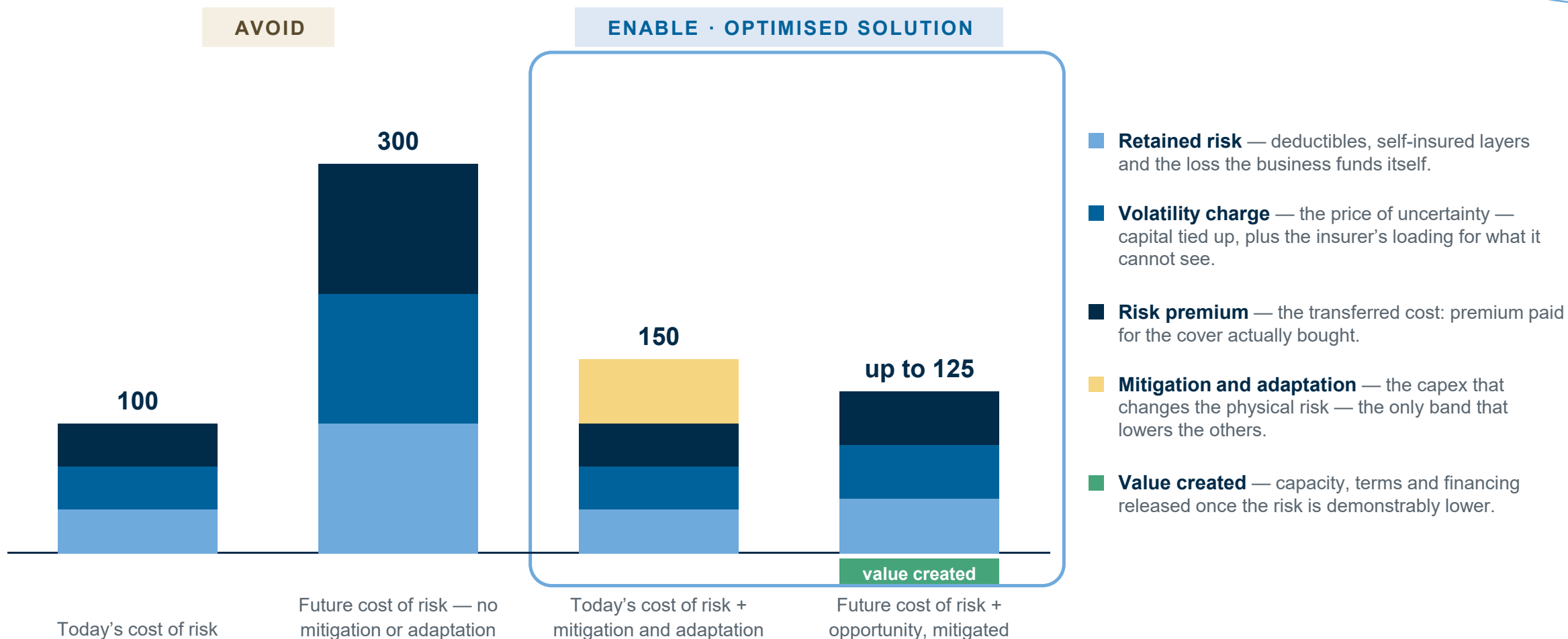
Lower-carbon substitution → loss behaviour uncertain → severity / frequency may rise

Terms tighten, cost retained

Underwriters price severity, not intent. Terms may tighten where the loss pathway is less mature or less well evidenced.

THE CAPEX QUESTION If this asset cannot be insured on acceptable terms, what additional risk cost do I need to account for?

How this impacts the future cost of risk



AVOID vs ENABLE

Deferring the spend does not hold the cost of risk flat — it increases it. One funded step holds the future cost close to today's and returns value: capacity, terms and financing.

A captive is an insurance company the group owns

WHAT IT IS

- A licensed insurer, owned by the group it insures
- Real policies, priced at arm's length, with capital held against them
- A cedant in its own right — it can buy reinsurance directly

WHAT IT IS NOT

- Not a tax structure — treatment must be confirmed with advisers
- Not a way to make risk disappear; the group still carries it
- Not a replacement for cover that is available on good terms

WHAT IT BUYS YOU

- Retention that is priced, reserved and funded — not absorbed
- A place to hold what the market has withdrawn from, and build the loss record for it
- Direct access to reinsurance, subject to scale, fronting and collateral

WHY A BUSINESS GOES DOWN THIS ROUTE

- The cover they need has been sublimited, excluded, or priced beyond what it is worth
- Their own loss record is better than the portfolio they are rated against, and they want credit for it
- Retentions have risen anyway — better to fund them by design than absorb them by surprise
- They want the cost of risk managed over several years, not repriced every twelve months
- **Control of risk reduction and the benefit of it — adaptation pays back to the group, not into a portfolio rate**

Form in calm, not in crisis.

Feasibility, licensing, capitalisation and fronting all go badly under duress.

A captive can strengthen the business case for resilience capex

The question is who captures the saving, when it is realised, and whether the evidence is strong enough for capital allocation.

THE ISSUE IS CAPTURE, TIMING AND ATTRIBUTION	
Resilience can reduce physical risk, but still fail a corporate hurdle rate if the benefit sits outside the entity funding the work. Capital committees need enterprise benefits: lower retained loss, protected revenue, improved terms, liquidity protection or funded co-benefits. Do not treat avoided future loss as current income. Model it in risk-adjusted NPV and validate it through loss, claims and engineering evidence.	

WHERE THE VALUE SITS	
Retained loss reduction	Enterprise NPV; realised over time
Externally insured loss reduction	May first sit with market
Operational continuity	Revenue / margin value if measurable
Community / public benefit	External unless funded or monetised

WHAT A CAPTIVE CAN CHANGE				
RETAINS THE BENEFIT	FUNDS THE EVIDENCE	ALLOCATES THE SIGNAL	SUPPORTS FUNDING	CREATES A LOOP
Keeps more selected loss-cost improvement inside the group, net of retained layers and reinsurance.	Claims, engineering and climate data support mitigation decisions and underwriting.	Risk-based internal pricing rewards sites that reduce risk.	Premiums or surplus may support approved risk-management spend, subject to capital and reserves.	Loss experience informs retention, reinsurance and future capex choices.

A captive does not create the return — it helps retain, attribute and reinvest the insurable benefit.

Use only where there is genuine insurance risk, arm's-length pricing, adequate capital/reserves, substantive governance and confirmed tax, accounting, legal and domicile treatment.

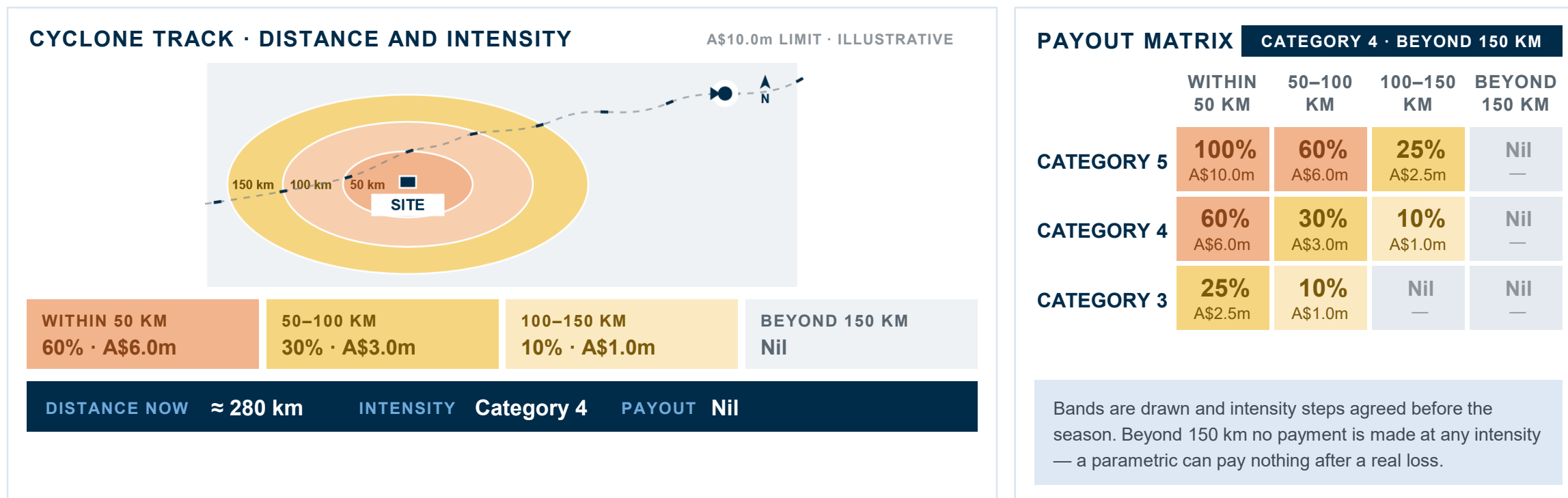
Captive mechanisms / examples: Zurich · WTW · A.P. Moller-Maersk · AXA XL.

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Parametric cover buys speed and capital to deploy — not perfect loss matching

Step 1 · The system is tracked from formation. Beyond 150 km nothing pays, at any intensity.



1 · INDEX

Intensity and closest approach, from the nominated best-track dataset.

2 · GEOMETRY

Four distance bands, three intensity steps — all agreed before the season.

3 · CALCULATION

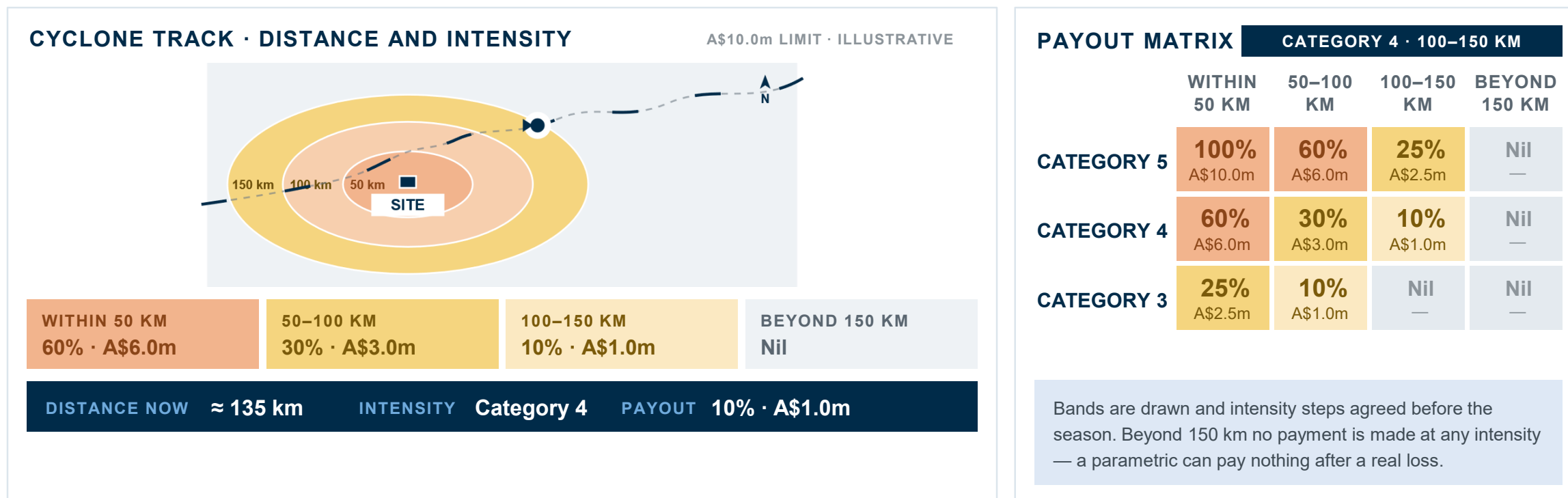
An independent agent reads the published record. No adjuster attends.

4 · SETTLEMENT

Can settle promptly once final index data are available and all conditions are satisfied.

Parametric cover buys speed and capital to deploy — not perfect loss matching

Step 2 · The track crosses into 150 km. Stop here and a Category 4 pays 10% — A\$1.0m.



1 · INDEX

Intensity and closest approach, from the nominated best-track dataset.

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Four distance bands, three intensity steps — all agreed before the season.

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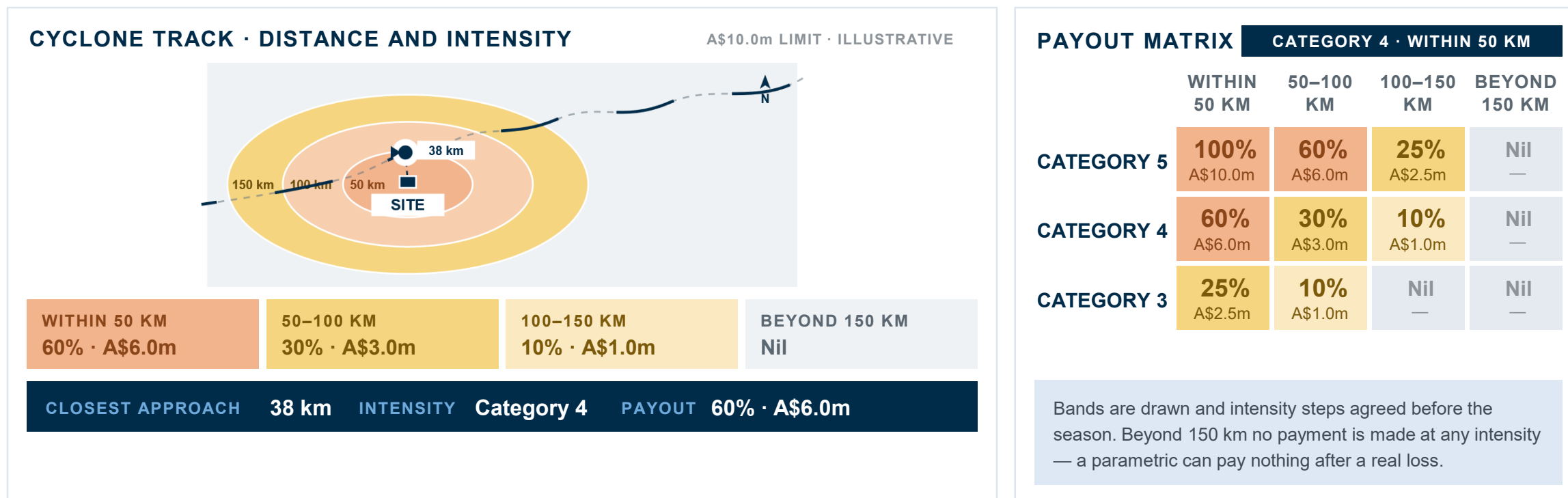
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Parametric cover buys speed and capital to deploy — not perfect loss matching

Worked example: a Category 4 track passing 38 km from the site pays 60% of a A\$10.0m limit.



1 · INDEX

Intensity and closest approach, from the nominated best-track dataset.

2 · GEOMETRY

Four distance bands, three intensity steps — all agreed before the season.

3 · CALCULATION

An independent agent reads the published record. No adjuster attends.

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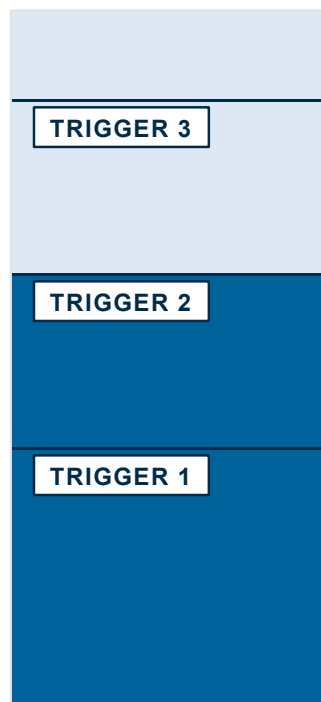
Can settle promptly once final index data are available and all conditions are satisfied.

Example: how a flood parametric pays

The index is river height at a nominated gauge — each level pays a set percentage of the limit, agreed before inception.

WHAT TRIGGERS A PAYMENT

OFFICIAL GAUGE HEIGHT



TRIGGER 3 Highest nominated gauge height	100%	A\$8.5m
TRIGGER 2 Intermediate nominated height	55%	A\$4.7m
TRIGGER 1 Lowest nominated gauge height	20%	A\$1.7m
BELOW TRIGGER 1 The river does not reach the level — this is where the capex for your physical flood defences do the work	Nil	—

In this example the event causes **A\$8.5m of flood damage inside the retention** . At Trigger 2 the policy pays A\$4.7m, so A\$3.8m stays on the balance sheet — basis risk, modelled and accepted before inception.

TRIGGER 2 → A\$4.7m

Flood defences change the shape of the loss, not just the size

As direct damage falls, parametric cover can be repriced, extended or redirected to access and dependency losses outside damage-based indemnity.

BUILD THE BARRIER

DAMAGE STARTS HIGHER

PARAMETRIC CHANGES SHAPE

THREE WAYS TO USE PARAMETRIC AFTER THE IMPROVEMENT

REDUCE PARAMETRIC COST

Recalibrate the parametric trigger to the barrier's higher protection threshold. Lower payout probability can support a lower premium, subject to market pricing.

Bank the parametric pricing benefit.

EXTEND PARAMETRIC COVER

Hold the parametric budget constant. Use any pricing benefit to buy a higher limit, an added severity layer, longer duration or broader dependency cover.

More parametric cover for the same budget.

FUND THE GAP WITH PARAMETRIC

Retain a lower parametric layer for access or dependency disruption — even when the barrier holds and the premises remain dry. Payout follows the agreed hazard trigger.

Parametric cash for residual interruption.

Use the resilience improvement to reduce parametric cost, extend parametric capacity or fund the residual interruption gap.

THE PARAMETRIC USE CASE — RESIDUAL INTERRUPTION

OFF-SITE DAMAGE, BUSINESS LOSS

South Australia, 2022 — flooding damaged 18 locations across a 300km section of the east–west corridor. The line closed for 24 days, disrupting WA and NT supplies.

ECONOMIC LOSS IS REAL

ARA/FORG estimate — the 2022 closure carried a national economic cost of about A\$320m, or more than A\$13m per day.

RECOVERY IS A RISK CONTROL

East–west corridor, 2022, 2024, 2026 — major flood closures recurred. ARTC now pre-positions equipment and materials for faster response.

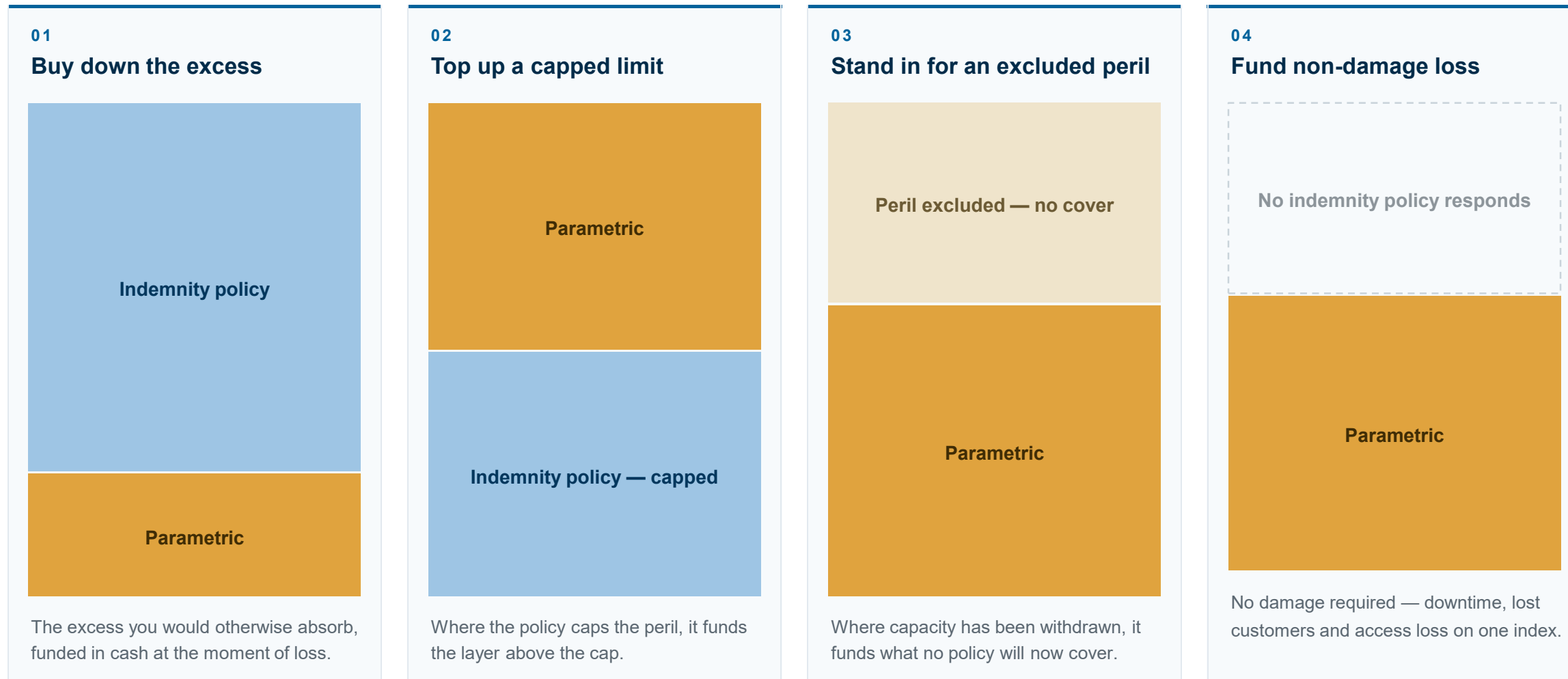
Sources: ARA/Freight on Rail Group NFSC submission; ARTC updates (2024, 2026); ARA Climate Resilience Framework. Parametric structure illustrative; calibration and basis-risk analysis required.

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Parametric: an option to fund uninsured losses

■ Indemnity cover ■ Gap — excluded, or no trigger ■ Parametric cover



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The payout is cash, not a reimbursement

Settlement is not tied to a repair cost, so one payment can be spent where recovery needs it first.

Emergency response

Clean-up, temporary premises, expediting and extra expense in the first weeks.

Immediate liquidity

Payroll, covenants and suppliers, while the indemnity claim is still being adjusted.

The deductible

Cash to meet a retention that has risen at every renewal — funded, not absorbed.

Contingent interruption

A supplier, port or road is hit while your own sites are untouched.

Non-damage interruption

Revenue lost with no physical damage: closure, denial of access, loss of attraction.

Uninsured economic loss

Customers lost, regional downturn, reputational recovery — the lines no policy reached.

INDEX TRIGGER BREACHED



AGREED PAYOUT



CASH IN WEEKS, NOT YEARS

Speed is the point — the money arrives while the indemnity claim is still open, and it is not ring-fenced to a repair cost.

That matters most where the cost of capital is high, and where reinstatement has to be started and paid for long before the indemnity policy settles.

Making heat loss countable is what makes it transferable

No damage usually means no trigger — but a measured, externally verifiable lost day gives a structure something to attach to.

NO DAMAGE, NO TRIGGER

No insured damage often means no trigger — unless a non-damage extension responds.

NO PREMIUM LINE, NO VISIBILITY

Often omitted from premium-centric reporting unless TCOR captures uninsured loss.

THE INSURABILITY TEST

A countable, independently verifiable occurrence may support transfer — where there is insurable interest, a demonstrable link to financial loss, fortuity and an acceptable structure. Chronic drag is not ordinarily transferable.

OUTPUT SLOWS

Chronic operating drag. No occurrence, no counterfactual — so it belongs in the operating budget.

BUDGET PROVISION

HOURS ARE LOST

A WHS or EBA threshold stops work — a countable, verifiable day. Any single day is expected; the season's count is not.

TRANSFERABLE TAIL

CLAIMS LAND

Statutory workers compensation, priced by scheme, differing by state.

SCHEME-PRICED

ILLUSTRATIVE STRUCTURE

INDEX

Daily maximum $\geq 38^{\circ}\text{C}$ or WBGT ≥ 32 at a nominated station.

RETAINED

First 20 qualifying days each season.

PAYOUT RATE

A\$45,000 per qualifying day thereafter

SEASONAL CAP

A\$900,000

Attachment set above the mean of an illustrative sample — not a return period.

Vulnerability is what adds the uncertainty

Hazard is mapped, exposure is declared. Vulnerability varies — and it is the only one you control.

RISK = HAZARD × EXPOSURE × VULNERABILITY

Where the field is not supplied, the model assumes. The assumption comes from the class — which includes every poorly maintained building in it.

HOW MUCH IT VARIES — THE CYCLONE EVIDENCE

THE RANGE IS WIDE

Four decades of damage surveys by JCU’s Cyclone Testing Station show a step change in performance for housing built after the post-1980 code changes.

IT SHOWS UP IN THE CLAIMS

Most residential damage in Larry (2006) and Yasi (2011) was to pre-1980 houses. Around 40–50% of housing in cyclone-prone Australia still is.

AND IT MOVES OVER TIME

Yasi surveys found substantial corrosion of roof elements in houses under ten years old. Retrofit is only part of it.

WHAT TO SUPPLY, AND WHAT IT EARNS

PERIL	WHAT TO SUPPLY	WHAT IT EARNS
Cyclone / wind	Roof age and condition, tie-downs, flashings, opening protection, roller-door bracing	ARPC: up to 30% of the cyclone component
Flood	Surveyed floor level in AHD, location of key plant, equipment and stock, tested barriers	NFID prices the address, not the building
Bushfire	BAL assessment, defensible space with dated photos, RBC certificate	Up to 60% off the bushfire component
Fire / all perils	Fire safety statement, sprinkler flow tests, hazardous storage, cladding, claims run	Read as management quality

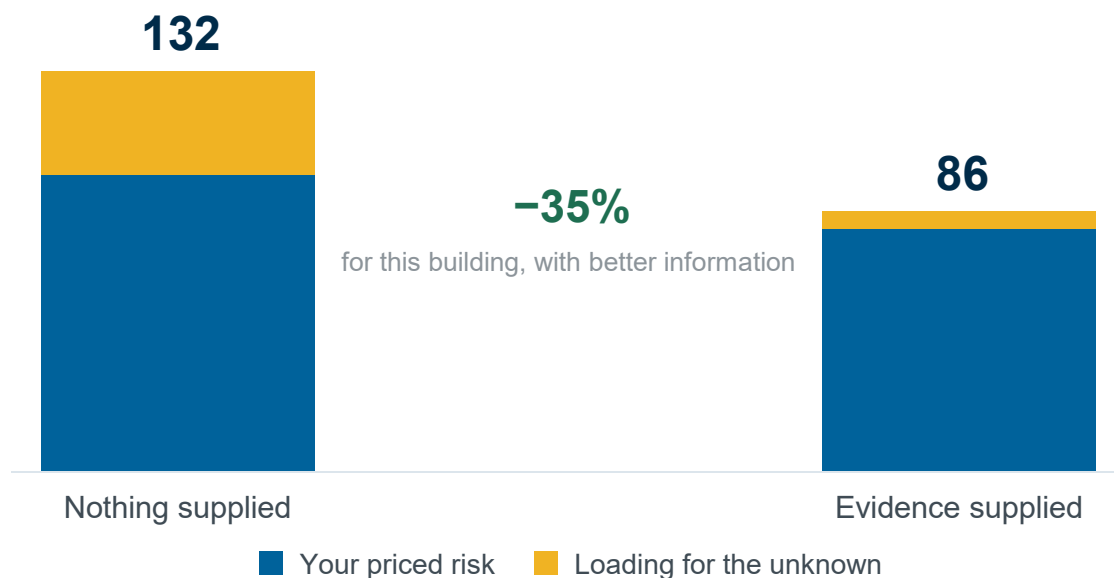
Uncertainty gets priced. Most of what removes it already sits inside your business.

Sources: Cyclone Testing Station, James Cook University · Gallagher Re, Making Communities More Resilient to Natural Perils in Australia · ARPC · Resilient Building Council.

No data? You may be paying twice.

Once as the average building in your area. Again as a loading for what the insurer cannot see.

SAME BUILDING, TWO SUBMISSIONS



Real case: one home, cover unchanged. Premium ~\$1,500 → ~\$1,900 as the roof aged → under \$1,000 once the new roof was on record.

WHY IT MATTERS FOR A BUSINESS

Commercial insurers already pay for it.

Lenders read the same file.

It pays to be early.

Question your insurer: “Which parts of my price come from assumptions rather than facts — and which details (risk drivers) would change it most?”

A business with evidence negotiates. One without accepts.

Chart illustrative. Sources: Moody's (May 2026) · EIOPA (Nov 2024) · RBA & APRA (2022–2026) · ARPC · Resilience Ratings Scheme. Detail and links in speaker notes.

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Run it as a cycle, not a renewal event



Goal — each turn is cheaper to finance. Better evidence earns better terms; better terms free capital; reduced risk produces better evidence.

Five questions to take back

One question each. If you cannot answer number three, that is where to start.

- 1 **TOTAL COST** — Do we know ours in both views — annual TCOR and one realised event — or only our premium?
- 2 **CAPACITY** — Do we know our appetite, tolerance and capacity as numbers the CFO would recognise?
- 3 **RETENTION** — Which retention did we actually choose, and which have we simply accepted because that is how it has always looked?
- 4 **GAPS** — Which exposure on our register has no policy at all — and has it been taken to design?
- 5 **EVIDENCE** — What would an insurer, lender or co-funder need to see — and do we hold it?

Know the total cost. Reduce the risk. Structure and fund the residual deliberately. Build the evidence once and adapt it for insurers, treasury, lenders and co-funders.

Is there a better way to do this?

MORE COVER

When the limit costs less than carrying the loss. Risk transfer prices the exposure; the balance sheet only absorbs it.

A DIFFERENT TYPE OF COVER

When the programme was inherited, not designed. A structure built to our exposure, our tolerance and our appetite — able to carry what is coming, not only what has happened.

LESS COVER

When the risk itself is demonstrably smaller. Mitigation and adaptation you control, evidenced, and reflected in what you need to buy.

Adaptation reduces the loss. Insurance funds what is left.

See the total cost · Structure the residual · Capture the value.

Contact us

Get in touch to let us know how we can help.



Sophie Griffin

**Head of Climate, Sustainability and Resilience
Solutions**

Sophie.griffin@ajg.com.au

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