

ADDENDUM TO THE FORMAL SUBMISSION: STRONG OBJECTION TO ULAN COAL COMPLEX MODIFICATION 8 – ULAN WEST CONTINUED OPERATIONS PROJECT (MP08_0184-Mod-8)

The Escalating Economic and Social Burden of Climate Change in Australia: A Total Cost Analysis, 2019–2024

The New Climate-Driven Economic Baseline

The period spanning 2019 to 2024 represents a critical inflection point in Australia's disaster profile, characterized by a rapid succession of historically severe and costly climate-driven events. This sequence, beginning with the protracted 2017–2019 drought, followed immediately by the catastrophic 2019–2020 Black Summer bushfires, and culminating in the devastating 2021–2022 East Coast floods, has fundamentally altered the nation's economic baseline for managing natural hazards. The findings of the Royal Commission into National Natural Disaster Arrangements (RCNDA) concluded that "Natural disasters have changed, and the nation's disaster management arrangements must also change". One of those changes has to clearly be no coal mining extensions, modifications allowing continuation, and no new coal mining licences to be issued in NSW.

Defining the Total Economic Cost (TEC)

A comprehensive assessment of the real cost of climate change necessitates moving beyond conventional measurements of direct, tangible damages, such as property destruction and immediate infrastructure repair. Traditional costing methods that focus solely on market-priced losses are now widely understood to severely underestimate the true financial burden of climate events, potentially by more than 50%.

This submission adopts a Total Economic Cost (TEC) approach, integrating both tangible (insured losses, governmental recovery expenditure, road restructures) and intangible impacts. Intangible costs capture damages that are difficult to price, impacts on mental health and well-being, and long-term reductions in labour productivity and human capital.

The sequential nature of these disasters—where drought weakened rural communities before fires struck, and unrecovered regions faced massive floods—significantly amplified long-term socioeconomic damage. The lack of temporal and financial buffers between events reduces regional resilience, ensuring that each subsequent event imposes a disproportionately higher cost on local economies and social cohesion than isolated events would.

Climate fuelled natural disasters currently impose an estimated **annual cost of \$38 billion on the Australian economy**. This baseline figure is projected to escalate dramatically, forecast to reach at least \$73 billion per year by 2060.

The contrast between the urgency dictated by these rapidly increasing future costs and the current governance model is stark. Existing policy emphasises immediate response, with 97% of Australian disaster funding spent on recovery and only 3% invested in risk mitigation and resilience building.⁴ This reactive spending bias, despite official recognition that arrangements must change¹, ensures that future costs will likely accelerate toward the projected \$73 billion annual threshold, validating the necessity for immediate and substantial investment in structural adaptation.

Breakdown of costs for NSW

- **Extreme weather events:** These are a major driver of costs through damage to infrastructure, property, and agriculture, as well as the human toll of injury and loss of life.
- **Flooding:** In an average year, flooding alone costs the **NSW economy around \$250 million**.
- **Bushfires:** The 2019-20 bushfires cost NSW an estimated \$6.4 billion, with some models putting the figure closer to **\$100 billion**.
- **Projected increases:** The average annual cost of climate change for NSW is predicted to rise by over **\$10 billion annually** over the coming decades.
- **Future impacts:** Costs could also be higher due to increased insurance premiums, disruptions to global trade, and impacts on superannuation.

Economic and financial implications

- **Infrastructure and services:** Climate change poses significant risks to infrastructure, from transport networks to energy facilities.
- **Government revenue:** Climate change can negatively affect government tax revenue and disrupt supply chains.
- **Economic resilience:** Building climate resilience in infrastructure and other sectors is a key strategy for mitigating these costs, but it requires significant investment and planning.

Road Restructures and the Imperative of Betterment Investment

The damage inflicted by the floods and bushfires on essential public assets, particularly transport and water infrastructure, was immense. The Lismore Local Government Area (LGA) alone estimated total damage to Council assets from the 2022 floods to exceed \$350 million. Road and bridge restoration represented the largest single component, estimated at \$150–200 million, with 90% of the LGA's 1200km road network suffering extensive damage. Inevitably this growing expense is absorbed by ratepayers and taxpayers. The local communities.

Mental Health and Public Health System Strain

The mental health consequences of increasingly frequent and severe extreme weather events are placing immense strain on the national health system, which already faces annual costs exceeding \$190 billion for mental illness. The direct effects of extreme events and hotter temperatures on adverse mental health outcomes are well-established in medical literature.

The quantified future strain on the health system is alarming. Rising temperatures are projected to increase the burden of mental and behavioural disorders (MBD) by 11.0–17.2% in the 2030s and by a catastrophic 27.5–48.9% in the 2050s. This thermal stress contributed to an annual loss of 8,458 disability-adjusted life years (DALYs), representing 1.8% of the country's total MBD burden. Warmer regions, particularly the Northern Territory, face the highest predicted relative risk, and younger Australians aged 15–44 are noted as being particularly impacted.

5.3 Intergenerational Costs: The Long-Term Erosion of Human Capital

The most profound long-term cost is the damage inflicted upon children and young people (CYP). Climate disasters are projected to impose over \$100 billion in cumulative costs on this cohort by 2060 under low warming scenarios, potentially reaching \$109.6 billion under high warming.

Analysis shows that the total annual measurable economic and social costs for CYP affected by disasters are estimated at \$6.3 billion. The economic trauma of climate change is highly concentrated in two areas:

1. **Lost Education and Earnings:** The largest driver of this cost is the long-term impact on human capital, estimated at \$5.3 billion in annual lifetime costs due to reduced year 12 completion rates and subsequent loss of potential earnings.
2. **Mental Health and Social Costs:** Disasters impose \$662 million in annual short-term mental health expenses on CYP, alongside \$192 million from the increased incidence of child abuse.²⁵

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The fact that the \$5.3 billion cost from lost education and earnings is eight times larger than the \$662 million immediate mental health expense demonstrates that the primary economic liability resulting from climate trauma is not the immediate psychological distress, but the long-term deterioration of human capital and workforce skills. This will suppress national productivity for decades, necessitating mandated investment in resilient educational and social services alongside physical infrastructure reconstruction.

Escalation of Insured Losses and Systemic Risk

Extreme weather events are worsening across Australia. Since the Black Summer bushfires in 2019-20, there have been 11 declared insurance catastrophes. Since January 2020 insurers have received almost 788,000 claims related to floods and storms that have been declared catastrophes or significant events. **As the climate warms, the risk of extreme weather events will continue to increase, likely bringing disasters at a scale and severity for which we are not currently prepared for financially.**

The catastrophic losses experienced during the flood events pushed the Australian insurance market to unsustainable levels. Insured catastrophe losses reached a record \$7 billion in 2022. Analysis of long-term trends reveals a dramatic reversal: since 2013, insured losses incurred in *each year* have

exceeded the *combined losses* of the five-year period from 2000 to 2004. This structural shift indicates that the increasing frequency and severity of climate events have outpaced the industry's historical models.

The commercial failure to effectively manage and mitigate this escalating risk has created a significant long-term fiscal liability for the government. Modelling suggests that the direct cost of natural disasters could reach \$35 billion per year by mid-century, averaging more than \$2,500 per household annually. These projections underscore that the climate crisis is rapidly transforming into a sovereign fiscal liability that requires preventative intervention.

Premium Inflation and the Crisis of Affordability

The private sector's rapid repricing of this risk has led to unprecedented premium inflation. Between 2022 and 2023, the average Australian home insurance premium rose by 14%, the largest increase recorded in a decade.

The escalation of insurance costs is also acting as a direct driver of macroeconomic inflation, increasing up to five times faster than the Consumer Price Index (CPI). Since insurance is a necessary household expenditure, this rapid cost escalation places significant pressure on the cost of living, complicating the central bank's ability to manage inflationary pressures. This confirms that climate change is now a non-discretionary inflationary mechanism within the economy, independent of emissions reduction policies.

This regional disparity has created a social crisis of affordability stress. Research indicates that nearly one in eight households (1.25 million people) suffer from home insurance affordability stress, paying more than four weeks of their gross income on premiums annually. Furthermore, one in 20 households spend more than seven weeks of gross income on home insurance. For these households, they are effectively working from New Year's Day almost to the end of February solely to cover their insurance premium. This financialization of risk indicates that as the private market prices out 1.25 million households, the residual risk transfers back to the sovereign entity, forcing government agencies to assume the cost of rebuilding uninsured properties during subsequent disasters.

Conclusion and Strategic Recommendations: Investing in a Resilient Future

There is absolutely no economic rationale for positive economic returns from Ulan Coal extension of the existing underground mine to the west of the approved underground operations which would extract an addition 38Mt of product coal. There is no sound economical quantification to allow Mod 8 to be approved on when assessed against the real cost of increasing climate change damage, and where there is a clear projection of renewable energy expanding quickly and now providing a cheaper form of electricity without the economic losses from growing climate catastrophic events.

The period from 2019 to 2024 has unequivocally demonstrated that climate change represents the single greatest accelerating fiscal liability facing the Australian economy. The combined tangible costs resulting from the catastrophic sequence of drought, fires, and floods, including insured losses exceeding \$15 billion and governmental DRFA outlays of \$3.1 billion, represent only a fraction of the total economic damage. With these costs now expected to grow exponentially, with a projected annual bill of over \$10 billion in the coming decades due to events like bushfires, floods, storms, and heatwaves. Simply put, we cannot continue to afford extracting coal.

Economic information provided has been extracted from these sources:

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Opens in a new window

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Administration of the Disaster Recovery Funding Arrangements | Australian National Audit Office (ANAO)

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www1.racgp.org.au

Mental health impacts of rising temperatures