

SUBMISSION TO THE  
AUSTRALIAN GOVERNMENT

# DEFENCE STRATEGIC REVIEW

OCTOBER 2022



**CLIMATE CHANGE  
IS THE GREATEST  
SECURITY THREAT  
FACING AUSTRALIA,  
REQUIRING A  
FUNDAMENTAL  
REFRAMING OF  
SECURITY AND  
DEFENCE STRATEGY.**

Submission to the Australian Government Defence Strategic Review.

Published 28 October 2022 by Australian Security Leaders Climate Group, Canberra ACT.

Admiral Chris Barrie AC (Retd), Air Vice-Marshal John Blackburn AO (Retd),  
Colonel Neil Greet (Retd), Cheryl Durrant, Major Michael Thomas (Retd) & Ian Dunlop.

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# SUMMARY AND RECOMMENDATIONS

The Australian Security Leaders Climate Group (ASLCG) welcomes the opportunity to contribute to the 2022 Defence Strategic Review (DSR). ASLCG notes that the DSR is “to be informed by intelligence and strategic assessments of the most concerning threats which challenge Australia’s security”. ASLCG submits that:

- Global inaction has resulted in climate change becoming an immediate existential threat to humanity and, together with nuclear war, is the greatest threat to the security of Australia and its people. As such, it should be the primary focus of the Defence Strategic Review (DSR).
- Addressing that threat requires an emergency response, akin to wartime mobilisation. Key requirements are: to reduce carbon emissions extremely fast to reach zero emissions as close to 2030 as possible; to drawdown atmospheric carbon concentrations to a more stable 350 parts per million carbon dioxide (ppm CO<sub>2</sub>) from the current unstable 420 ppm; and to assess potential climate intervention (geoengineering) mechanisms to cool parts of the planet, to buy time whilst other measures take effect.
- A comprehensive climate-security risk assessment covering domestic, regional and global climate risks is essential before sound conclusions on mobilisation and defence strategy can be drawn. This should be made publicly available to build community support for security and other climate-related policy measures.
- It is understood that the Office of National Intelligence is assessing global climate risks. There is an urgent need for a parallel domestic climate risk assessment to be initiated and incorporated into DSR considerations.
- Strategic and economic choices between conflict or cooperation around climate risks will have to be made by all nations:
  - The existential nature of the climate threat requires a fundamental reframing of Australia’s defence and security strategy, away from traditional nation state geopolitics, to focus on unprecedented global cooperation rather than conflict. Likewise for the other G20 nations who are responsible for 80% of global emissions, and particularly leading powers such as China and the USA.
  - Pressure on national budgets will increase as governments struggle to meet competing demands as the impact of climate change intensifies. Australia needs an effective defence capacity to protect its own territory and to respond to regional disruption, but hard choices will have to be made in order to shape the economic environment to prioritise effective climate mitigation and resilience. All government spending areas, including defence, need to be examined in this light.
- Whilst climate change is an existential threat, it is also Australia’s greatest opportunity for economic prosperity and security in a zero-carbon world, provided nations cooperate to overcome that threat.
- Demands on the Australian Defence’s Force Humanitarian Assistance and Disaster Resilience (HADR) role will increase substantially, both at home and in the region. This should prompt a restructure of civilian disaster management arrangements, further emphasising the need for regional cooperation rather than conflict.

# INTRODUCTION

The Australian Security Leaders Climate Group (ASLCG) appreciates the opportunity to make this submission to the 2022 Defence Strategic Review (DSR).

ASLCG submits that the greatest, existential threats to Australia's security now and in the foreseeable future are anthropogenic climate change and nuclear war. Australia can exert little immediate influence over the threat of nuclear war. However it is one of the countries most exposed to climate change, and has substantial economic capacity to respond.

The climate change threat has been, and continues to be, underestimated by global leaders, leading to a grossly inadequate response that has contributed to it becoming an immediate existential threat to human civilisation, in the sense that inaction – past and present – is locking in catastrophic climate outcomes which may be irreversible.

The objectives of the 2015 Paris Climate Agreement are "to limit temperature increase to well below 2°C above pre-industrial levels and to pursue efforts to limit the increase to 1.5°C, using the best available science".<sup>1</sup>

However, the Paris signatories have failed totally to meet the laudable objectives of the original 1992 UN Framework Convention on Climate Change.<sup>2</sup> Specifically, dangerous climate change is occurring now at the global average surface temperature increase of 1.2°C. Ecosystems cannot adapt to the rapid rate of change, food production is threatened, economic development is not proceeding in a sustainable manner, expansion of fossil fuel use accelerates adverse climate impacts, and the necessary precautionary steps are not being taken. Three decades of negotiation to reduce carbon emissions have achieved almost nothing, in that emissions continue to rise at worst-case rates despite the imperative to reverse that trend.

The damage from decades of procrastination and deliberate inaction has been steadily increasing, as witnessed during the 2019-20 Australian "black summer" bushfire season which was unprecedented in terms of the intensity and extent of the fires, and the impact on the community.<sup>3</sup> Attribution studies confirm the significant role of anthropogenic climate change in fuelling these fires.<sup>4</sup> Severe drought over large parts of the continent for some years beforehand set the context for the fires, and floods then followed. The Covid19 pandemic has exacerbated what was already a disastrous situation for east coast communities, further compounded by the more severe floods in 2021 and 2022. These impacts are made worse by climate change.

Australia was ill-prepared for the Covid pandemic and the severity of the fires and the floods because leaders had ignored expert advice. The results will be even more catastrophic if a similar approach continues to be taken with climate change.

The impacts of climate change will affect every aspect of the global and human security landscape, and require a fundamental rethink of Australia's strategic outlook and the role of Australia's Defence Force (ADF).

For decades federal and state governments, along with corporate and financial leaders, have chosen to exacerbate climate risks by actions such as increasing fossil fuel use and export, and ignoring scientific advice. Those risks have never been officially assessed in Australia.

1 [unfccc.int/sites/default/files/english\\_paris\\_agreement.pdf](https://unfccc.int/sites/default/files/english_paris_agreement.pdf)

2 [unfccc.int/resource/docs/convkp/conveng.pdf](https://unfccc.int/resource/docs/convkp/conveng.pdf)

3 [climatecouncil.org.au/wp-content/uploads/2020/03/Crisis-Summer-Report-200311.pdf](https://climatecouncil.org.au/wp-content/uploads/2020/03/Crisis-Summer-Report-200311.pdf)

4 [worldweatherattribution.org/wp-content/uploads/WWA-attribution\\_bushfires-March2020.pdf](https://worldweatherattribution.org/wp-content/uploads/WWA-attribution_bushfires-March2020.pdf)

Hence ASLCG's 2021 proposal that a comprehensive Climate-Security Risk Assessment (CSRA) for Australia be carried out urgently, addressing the broad risks to human, national and regional security.<sup>5</sup> This idea was accepted by the current Australian Government. It is understood that an assessment, focussing on global but not domestic risks is currently being undertaken by the Office of National Intelligence (ONI), as a contribution to formulating systemic climate and security policy.

However, unless the full range of climate security risks, domestic as well as global, are properly understood and accepted, inappropriate policies across government will again result. This will undermine the future prosperity, and even the survival, of the Australian community as extreme climate impacts escalate.

Past inaction on climate change is locking in potentially catastrophic outcomes, which requires a fundamental reassessment of Australia's defence and security policies. As such, climate change must be central to the deliberations and recommendations of the DSR.

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5 [aslcg.org/wp-content/uploads/2022/08/ASLCG\\_RiskAssessment\\_Implementation-Proposal.pdf](https://aslcg.org/wp-content/uploads/2022/08/ASLCG_RiskAssessment_Implementation-Proposal.pdf)

# EXISTENTIAL THREATS

An existential threat is one posing permanent large negative consequences to humanity which may never be undone, either by annihilating intelligent life or permanently and drastically curtailing its potential.

Climate change and nuclear war are not the only existential threats now confronting humanity. The Council for the Human Future summarised them as follows:<sup>6</sup>

- Climate change leading to “Hothouse Earth” scenario;
- Nuclear war;
- Eco-breakdown and extinction;<sup>7</sup>
- Resource scarcity, particularly water;
- Unsustainable global food system;
- Global poisoning from chemical emissions;
- Overpopulation, beyond Earth’s carrying capacity;
- Pandemic disease from overpopulation, wilderness destruction and social behaviour;
- Uncontrollable technologies;
- Mass delusion from human’s inability to understand existential threats.

The concurrence of recovery from the bushfires, the arrival of the pandemic and subsequent floods demonstrates some of these events compounding, one upon another. The pandemic in particular has highlighted the fragility of a global economic system and supply chains built upon the constant increases in population, consumption and material use. For decades, concerns have been expressed about the implications,<sup>8</sup> which have been ignored as the global community constructed an economic system of perverse incentives likely to ensure its own destruction.

The point has now been reached where that system is indeed destroying itself, in that it cannot handle the contradictions it has created. Multiple risks are compounding in inter-related ways never previously experienced.<sup>9</sup> The lessons that the current pandemic has created must be used to rethink the road ahead, not just continuing business-as-usual. The likely impending failure of conventional economic growth, as a result of these compound threats, has fundamental implications for defence and security.

Whilst Australia has limited ability to mitigate the global nuclear threat, it does have some influence. It is a signatory to the South Pacific Nuclear Free Zone Treaty (known as the Treaty of Rarotonga) which formalises a nuclear-weapon-free zone in the South Pacific and bans the use, testing and possession of nuclear weapons within the borders of the zone.

The Treaty on the Prohibition of Nuclear Weapons was adopted at a conference on 7 July 2017 and entered into force on 22 January 2021 following the fiftieth instrument of ratification or accession of the Treaty. Australia has not signed the Treaty, but whilst in opposition now Prime Minister Albanese proposed a resolution at the 2018 ALP national conference which committed the party to sign and ratify the treaty in government, saying: “Nuclear disarmament is core business for any Labor government worth the name... Labor in government will sign and ratify the UN treaty on the prohibition of nuclear weapons”.<sup>10</sup>

6 [humanfuture.org/megarisks](https://humanfuture.org/megarisks)

7 [dceew.gov.au/science-research/soe](https://dceew.gov.au/science-research/soe); [gov.uk/government/publications/final-report-the-economics-of-biodiversity-the-dasgupta-review](https://gov.uk/government/publications/final-report-the-economics-of-biodiversity-the-dasgupta-review)

8 [clubofrome.org/publication/the-limits-to-growth/](https://clubofrome.org/publication/the-limits-to-growth/)

9 [theconversation.com/natural-systems-in-australia-are-unravelling-if-they-collapse-human-society-could-too-187263](https://theconversation.com/natural-systems-in-australia-are-unravelling-if-they-collapse-human-society-could-too-187263)

10 [theguardian.com/australia-news/2022/jun/20/australia-yet-to-sign-up-to-treaty-banning-nuclear-weapons-but-will-attend-un-meeting-as-observer](https://theguardian.com/australia-news/2022/jun/20/australia-yet-to-sign-up-to-treaty-banning-nuclear-weapons-but-will-attend-un-meeting-as-observer)

Apart from nuclear catastrophe, climate disruption is the greatest threat to global, national and human security.

If the strategic road ahead is to be navigated successfully, a strong light must be shone on climate change risks encompassing, inter alia, food and water crises, large-scale disruption, and social and political breakdown both within and between nations. These risks fundamentally change the security landscape. Globally, there will be potential conflict over shared resources, climate-change enhanced famine, breakdown in social cohesion, forced displacement of populations, and state failure, particularly in our region.<sup>11</sup>

Hosting a climate and security panel on 22 April 2021 as part of US President Biden's Leaders Summit on Climate, US Secretary of Defence Lloyd J. Austin III commenced with these words: "Today, no nation can find lasting security without addressing the climate crisis. We face all kinds of threats in our line of work, but few of them truly deserve to be called existential. The climate crisis does".<sup>12</sup> The October 2022 US National Security Strategy reiterates that "the climate crisis is the existential challenge of our time".<sup>13</sup>

Likewise, Pacific island leaders have clearly and repeatedly identified climate change as the greatest threat to their peoples' future security. This has been confirmed in official declarations from the Pacific Islands Forum, such as the 2018 Boe Declaration, which states that "climate change remains the single greatest threat to the livelihoods, security and wellbeing of the peoples of the Pacific".<sup>14</sup>

Existential, civilisation-threatening risks are not amenable to the learn-from-failure approach of conventional risk management. Attention should be given to the question: what are the feasible, worse-case scenarios, and what actions are required to prevent, prepare and protect against their occurrence? The approach to climate-related security risks must be holistic, avoiding siloed, discipline-based analysis. Risk analysis must account for system complexity and deep uncertainty.

The 2022 UN report, *Our World at Risk: Transforming Governance for a Resilient Future*, comes to a sobering conclusion: despite commitments to build resilience, tackle climate change and create sustainable development pathways, current societal, political and economic choices are doing the reverse.<sup>15</sup> It warns of the risk of collapse because "risk creation is outstripping risk reduction".

The case for urgent action is clear. The scientific evidence is that the global average warming will reach 1.5°C in the next decade, irrespective of any emissions reductions in the meantime, and 2°C before 2050, even with higher-ambition emission reductions.

Currently, global emission-reduction actions will lead to around 3°C of warming, and more once significant carbon-cycle feedback loops – which are now becoming active – are taken into account. Impacts of 3-4°C of warming would be catastrophic.

11 [breakthroughonline.org.au/\\_files/ugd/148cb0\\_8c0b021047fe406dbfa2851ea131a146.pdf](https://breakthroughonline.org.au/_files/ugd/148cb0_8c0b021047fe406dbfa2851ea131a146.pdf); [aspi.org.au/report/geopolitics-climate-and-security-indo-pacific](https://aspi.org.au/report/geopolitics-climate-and-security-indo-pacific)

12 [defense.gov/News/News-Stories/Article/Article/2582051/defense-secretary-calls-climate-change-an-existential-threat/](https://defense.gov/News/News-Stories/Article/Article/2582051/defense-secretary-calls-climate-change-an-existential-threat/)

13 [whitehouse.gov/wp-content/uploads/2022/10/Biden-Harris-Administrations-National-Security-Strategy-10.2022.pdf](https://whitehouse.gov/wp-content/uploads/2022/10/Biden-Harris-Administrations-National-Security-Strategy-10.2022.pdf)

14 [forumsec.org/2018/09/05/boe-declaration-on-regional-security/](https://forumsec.org/2018/09/05/boe-declaration-on-regional-security/)

15 [undrr.org/gar2022-our-world-risk](https://undrr.org/gar2022-our-world-risk)

So how will such risks manifest from a security perspective? A remarkable insight was provided fifteen years ago by Kurt Campbell, currently Coordinator for Indo-Pacific Affairs in the US National Security Council, and formerly Assistant Secretary of State for East Asian and Pacific Affairs in the Obama administration. Campbell led a team that produced climate scenarios in a 2007 report, *The Age of Consequences*.<sup>16</sup> One scenario described the security impacts in a 3°C-warmer world, which is now on the cards:

Massive nonlinear events in the global environment give rise to massive nonlinear societal events. In this scenario, nations around the world will be overwhelmed by the scale of change and pernicious challenges, such as pandemic disease. The internal cohesion of nations will be under great stress, including in the United States, both as a result of a dramatic rise in migration and changes in agricultural patterns and water availability. The flooding of coastal communities around the world, especially in the Netherlands, the United States, South Asia, and China, has the potential to challenge regional and even national identities. Armed conflict between nations over resources, such as the Nile and its tributaries, is likely and nuclear war is possible. The social consequences range from increased religious fervor to outright chaos. In this scenario, climate change provokes a permanent shift in the relationship of humankind to nature.

Australia could be facing such a scenario within 20-30 years, which should prompt some hard thinking about the priorities and tasks facing the ADF.

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<sup>16</sup> [csis.org/analysis/age-consequences](https://www.csis.org/analysis/age-consequences)

# THE RAPIDLY CHANGING CLIMATE CONTEXT

The need to address climate change seriously is becoming accepted by regulators, corporate leaders, investors and some governments. Sound governance demands that the real climate risks are understood and properly mitigated if disastrous consequences are to be avoided, even in the short-to-medium term.

ASLCG's current assessment of those risks, based upon the latest science, concludes:

- A 1.5°C global average temperature increase will occur by 2030 regardless of the emissions trajectory this decade. This is the lower boundary of the 2015 Paris Agreement;
- The upper boundary of 2°C is now likely prior to 2050, even with actions better than the current Paris commitments. 3°C is likely early-to-midway through the second half of this century given the current emissions trajectory;
- The war in Ukraine and the US-China tension over Taiwan, unless rapidly resolved, will distract from climate being a global political priority. Weakened or delayed emission-reduction commitments may result in a global temperature increase in the 3-4°C range by 2100;
- Rapid emission reductions will have limited impact on the warming trend over the next 25 years due to the offsetting effect of reducing aerosols from fossil fuel use, which have been moderating the planet's warming thus far - the "Faustian bargain" of fossil fuel use;
- A "Hothouse Earth" scenario of non-linear, irreversible, self-sustaining warming may be triggered at 1.5-2°C of warming, noting that some climate system tipping points have likely already been triggered, leading to catastrophic implications even in the short-term;<sup>17</sup>
- In summary: current global warming of 1.2°C in 2022 is already dangerous; 2°C would be extremely dangerous; 3°C would be catastrophic; and 4°C unimaginable.

## Tipping points

Tipping points are the most critical climate risks. Some large-scale elements of the climate system do not change in a linear manner with increasing atmospheric carbon concentrations; but rather at a critical boundary point they "tip" abruptly from one relatively stable state to another that may be far less conducive to human prosperity or survival. For example, Arctic sea ice is melting rapidly as Arctic temperatures rise four times faster than the global average. As a result, less solar radiation is reflected back to space by the white ice and instead it warms the oceans, which in turn also warms the seabed and surrounding land. This melts permafrost and ice sheets, leading to further carbon emissions and accelerated warming, contributing to changes in ocean circulation and in the Arctic jet stream, with major global implications.

Fifteen non-linear tipping points were identified around the world some years ago.<sup>18</sup> They represent the greatest risks of climate change in that, once triggered, they are irreversible on relevant human timeframes, with catastrophic outcomes. Some are interrelated and may cascade.

<sup>17</sup> [pnas.org/doi/10.1073/pnas.1810141115](https://doi.org/10.1073/pnas.1810141115)

<sup>18</sup> [pnas.org/content/105/6/1786](https://doi.org/10.1073/pnas.1810141115)

The implications of tipping points are yet to be properly assessed in the periodic reports of the Intergovernmental Panel on Climate Change (IPCC),<sup>19</sup> in part because the mechanisms are not well understood or cannot be quantified. This underlines the importance of exercising the precautionary principle and an emergency-scale mitigation mobilisation. Professor Hans Joachim Schellnhuber, founder of the Potsdam Institute for Climate Impact Research, emphasises: "This is particularly true when the issue is the very survival of our civilisation, where conventional means of analysis may become useless".<sup>20</sup>

A 2019 assessment by leading scientists suggests that tipping points may occur earlier than previously thought.<sup>21</sup> They identified nine inter-related tipping points under way and concluded:

In our view, the evidence from tipping points alone suggests that we are in a state of planetary emergency; both the risk and urgency of the situation are acute. We argue that the intervention time left to prevent tipping could already have shrunk toward zero, whereas the reaction time to achieve net zero emissions is 30 years at best. Hence we might have already lost control of whether tipping happens. A saving grace is that the rate at which damage accumulates from tipping – and hence the risk posed – could still be under our control to some extent. The stability and resilience of our planet is in peril. International action – not just words – must reflect this.

Further analysis published this year increased these concerns, identifying five climate system tipping points which may have already moved beyond human influence,<sup>22</sup> emphasising the need to focus far more attention on preparing for worst-case scenarios, which are increasingly likely.<sup>23</sup>

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<sup>19</sup> [ipcc.ch](http://ipcc.ch)

<sup>20</sup> [breakthroughonline.org.au/whatliesbeneath](http://breakthroughonline.org.au/whatliesbeneath)

<sup>21</sup> [nature.com/articles/d41586-019-03595-0](http://nature.com/articles/d41586-019-03595-0)

<sup>22</sup> [breakthroughonline.org.au/climatedominoes](http://breakthroughonline.org.au/climatedominoes)

<sup>23</sup> [pnas.org/doi/10.1073/pnas.2108146119](https://pnas.org/doi/10.1073/pnas.2108146119); [science.org/doi/10.1126/science.abn7950](https://science.org/doi/10.1126/science.abn7950)

## Impacts

Climate change is taking an increasing social and economic toll, as witnessed in Australia and around the world, often well in advance of scientific expectations.<sup>24</sup>

Whilst Australia has never conducted a comprehensive official assessment of climate risks, our major allies are doing so on a regular basis. In 2021, Chatham House, Britain's eminent international affairs think tank, warned that the world "is dangerously off track to meet the Paris Agreement goals", that the risks are compounding, and that "without immediate action the impacts will be devastating in the coming decades", especially for food security. The think tank's report, *Climate change risk assessment 2021*,<sup>25</sup> concluded that:

- Impacts likely to be locked in for the period 2040–2050 unless emissions rapidly decline include a global average 30% drop in crop yields by 2050;
- The average proportion of global cropland affected by severe drought will likely rise to 32% a year (where severe drought is defined as greater than 50% yield reductions);
- By 2040, almost 700 million people a year are likely to be exposed to droughts of at least six months' duration, nearly double the global historic annual average.
- Cascading climate impacts will "drive political instability and greater national insecurity, fuelling regional and international conflict".

Other studies have highlight similar concerns,<sup>26</sup> but are largely ignored by political leaders despite the escalating devastation and cost of climate impact. Further, these analyses do not allow for the possible worst case tipping point scenarios discussed above.

<sup>24</sup> [carbonbrief.org/mapped-how-climate-change-affects-extreme-weather-around-the-world-jbcs.co/iieraustralia-projects](https://carbonbrief.org/mapped-how-climate-change-affects-extreme-weather-around-the-world-jbcs-co/iieraustralia-projects)

<sup>25</sup> [chathamhouse.org/sites/default/files/2021-09/2021-09-14-climate-change-risk-assessment-quiggin-et-al.pdf](https://chathamhouse.org/sites/default/files/2021-09/2021-09-14-climate-change-risk-assessment-quiggin-et-al.pdf)

<sup>26</sup> [unfccc.int/news/united-in-science-we-are-heading-in-the-wrong-direction](https://unfccc.int/news/united-in-science-we-are-heading-in-the-wrong-direction); [aspstrategist.org.au/simultaneous-climate-hazards-are-supercharging-global-systemic-risk](https://aspstrategist.org.au/simultaneous-climate-hazards-are-supercharging-global-systemic-risk); [ad-aspi.s3.ap-southeast-2.amazonaws.com/2021-04/Emerging%20crisis%20FINAL.pdf](https://ad-aspi.s3.ap-southeast-2.amazonaws.com/2021-04/Emerging%20crisis%20FINAL.pdf); [swissre.com/dam/jcr:e73ee7c3-7f83-4c17-a2b8-8ef23a8d3312/swiss-re-institute-expertise-publication-economics-of-climate-change.pdf](https://swissre.com/dam/jcr:e73ee7c3-7f83-4c17-a2b8-8ef23a8d3312/swiss-re-institute-expertise-publication-economics-of-climate-change.pdf)

# SOLUTIONS

The prevalent idea that the world can still make an ordered, gradual transition to a low-carbon world with a “Net Zero Emissions by 2050” (NZE2050) goal is unrealistic. The world has left it too late for an incremental rate of change and now needs to reduce carbon emissions extremely fast, ideally reaching zero emissions as close to 2030 as possible (ZE 2030). This is a massive task, far greater than anything thus far contemplated by policymakers.

Climate impacts in Australia are noticeably greater than global statistics imply; for example Australia's average temperature in 2020 was 1.44°C above 1910 levels, close to the 1.5°C Paris boundary. And this during cooler La Nina conditions; the next El Nino will be extremely dangerous.

Inertia in the global climate system means that the impacts of increasing atmospheric carbon concentrations do not fully manifest themselves for years ahead; today's impacts are the result of emissions from past decades. Irrespective of action taken today or in the immediate future, we cannot avoid severe, escalating climate impact due to past emissions.

The immediate challenge is to prevent matters becoming even worse due to the consequences of expanding fossil fuel use, whether domestic or export. New coal and gas projects as currently proposed in Australia are irresponsible in these circumstances, and unnecessary given more attractive alternatives are available. In broad terms, solutions would include:

- Accelerate innovation and deployment to further reduce cost of zero-emission energy alternatives. Gas is not a low-emission option;<sup>27</sup>
- Ban investment in new fossil fuel capacity immediately, then phase-out coal, oil and gas as fast as alternatives become available;
- Remove subsidies to fossil fuel industries, currently an annual US\$5.9 trillion globally, and A\$42 billion annually in Australia, roughly equivalent to our current defence budget;<sup>28</sup>

- Introduce realistic carbon pricing to ensure an economically efficient transition to a low-carbon society and acceleration of new technologies. This rectifies the pollution externality that has not been priced and removes the massive subsidy enjoyed by fossil fuels;
- Tighten controls on fugitive methane emissions from fossil fuel operations and agriculture;
- Accelerate electrification, energy conservation and efficiency;
- Build capacity to draw down atmospheric carbon concentrations from the present unstable level of 420 ppm CO<sub>2</sub>, toward a more stable level of less than 350 ppm CO<sub>2</sub>. This would include regenerative agricultural practices, soil carbon, ocean sequestration and reforestation;
- Encourage debate and reframing of values toward evolution of sustainable societies in support of the low carbon transition;<sup>29</sup>
- Provide, and plan for, a fair transition for those people and regions adversely affected.

Vested interest pressure and market failure have created the climate crisis. Over three decades, market solutions alone have proven incapable of solving it, and that is unlikely to change. Precautionary action is now essential to avoid worst case scenarios, which makes increasing state intervention inevitable.

<sup>27</sup> [climatecouncil.org.au/resources/passing-gas-renewables-are-future/](https://climatecouncil.org.au/resources/passing-gas-renewables-are-future/)

<sup>28</sup> [imf.org/en/Publications/WP/Issues/2019/05/02/Global-Fossil-Fuel-Subsidies-Remain-Large-An-Update-Based-on-Country-Level-Estimates-46509](https://imf.org/en/Publications/WP/Issues/2019/05/02/Global-Fossil-Fuel-Subsidies-Remain-Large-An-Update-Based-on-Country-Level-Estimates-46509)

<sup>29</sup> [earth4all.life](https://earth4all.life)



# IMPLICATIONS FOR THE DEFENCE STRATEGIC REVIEW

Threat recognition

The DSR Terms of Reference for the Independent Leads of the Review call for “an holistic consideration of Australia’s Defence force structure and posture ... to meet the nation’s security challenges over the period 2023-24 to 2032-33 and beyond”. The DSR is “to be informed by intelligence and strategic assessments of the most concerning threats which challenge Australia’s security” .<sup>30</sup>

The DSR was initiated in August 2022 following concerns over the change in Australia’s strategic environment, the lack of clarity on Australia’s defence strategy and recent defence procurement failings.<sup>31</sup> The supporting material notes that the Review will help ensure that the potential of the September 2021 AUKUS partnership with the US and UK is maximised in Australia’s best strategic interests.

China continues to be Australia’s major trading partner, around which much of our national wealth has been created over recent decades, built up through long-term diplomatic and business initiatives. This long-term diplomacy and relationship-building contrasts with the anti-China rhetoric which has emerged relatively recently from US, UK and Australian political and security leaders as China has become more assertive.

Certainly China might have handled its emerging global role less aggressively, but that has to be seen against the current accepted Western paradigm that Western dominance must be maintained and China’s influence “constrained”.<sup>32</sup> China’s rise is inevitable and should be welcomed, particularly given the crucial role it must play addressing climate change. Our relationship with China should not be seen as a zero-sum game to preserve the status quo; Australia’s challenge is to position our nation as a constructive player in addressing the existential climate threat that all nations face.

Australia could take a lead from its Pacific island neighbours. The community of Pacific Island nations has made it abundantly clear, including in the 2018 Boe Declaration, that climate impacts and not China are its biggest concern. Yet for decades Australia ignored the evidence that climate change represents the single greatest threat to the livelihood, security and wellbeing of Pacific nations.

Australia should put climate and security concerns at the centre of Pacific security and defence policy if it is to regain trust in the region. ASLCG has publicly recognised that: “Pacific governments have long argued that climate change and security are inter-linked. The key to Australia’s successful re-engagement in the Pacific is a Pacific Climate and Security Initiative that would give priority to the Pacific’s needs”.<sup>33</sup> This would include new commitments to the Green Climate Fund, and mitigation actions consistent with the Pacific’s focus on constraining warming to less than 1.5°C.

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30 [defence.gov.au/about/reviews-inquiries/defence-strategic-review](https://defence.gov.au/about/reviews-inquiries/defence-strategic-review)

31 [minister.defence.gov.au/media-releases/2022-10-10/quality-defence-spending-top-priority-albanese-government](https://minister.defence.gov.au/media-releases/2022-10-10/quality-defence-spending-top-priority-albanese-government)

32 [penguinrandomhouse.com/books/678193/dismantling-global-white-privilege-by-chandran-nair/](https://penguinrandomhouse.com/books/678193/dismantling-global-white-privilege-by-chandran-nair/)

33 [aslcg.org/wp-content/uploads/2022/04/ASLCG\\_Media\\_Release\\_27422.pdf](https://aslcg.org/wp-content/uploads/2022/04/ASLCG_Media_Release_27422.pdf)

Historically Australia has suffered from a dangerous groupthink which sees traditional nation state geopolitics as the main game whilst ignoring or downplaying the existential climate threat. This was evident in the 2016 Defence White Paper where climate change did not even rate a mention, and in the 2020 Defence Strategic Update where it received only passing reference in the context of the need to address “natural” disasters. If this is any indication, Australia has a long way to go in embracing the understanding from our Pacific neighbours that climate and not China is the greatest security threat.

### **Existential threats require global solutions**

Climate change does not fit readily into the traditional definition of a national security threat. Historically it has been viewed as a “threat multiplier”, just one among a multitude of strategic considerations. Today, as a result of the global policy failure, it is the greatest threat facing humanity. It cannot be solved within the mindset of geopolitical competition because it is a global threat which transcends both national boundaries and great powers.

Climate change requires unprecedented levels of global cooperation to dramatically reduce carbon emissions and atmospheric carbon concentrations, and manage climate interventions constructively. Cooperation may seem fanciful at a time with war in Ukraine, increasing tension between the US and China, and other countries moving toward isolationism. However this is an existential threat that is bigger than any individual country, and unlike anything humanity has previously experienced.

Every corner of the globe and every continent is already experiencing escalating climate impacts. The question is whether, and how, traditional security mindsets can be set aside and leadership emerge to trigger cooperation and avoid collapse. It is in Australia’s interests to foster such cooperation, particularly within the G20 group of nations – whose economies account for around 80% of global greenhouse gas emissions – and with leading powers such as China and the USA and other global leaders. This is the context in which the DSR must be developed if the security of the Australian and Pacific communities is to be ensured.

### **Mobilisation**

A feasible scenario is as follows. The world will fail by a large measure to reduce emissions by 50% by 2030, which would be the first step in limiting warming to 2°C. Emissions by 2030 may not be substantially lower than the 2010-20 period. This is certainly the Chatham House assessment.<sup>34</sup> As the pace and intensity of extreme events accelerates, political panic, conflict and blame-shifting over the global climate policy-making failure will likely take hold.

<sup>34</sup> [chathamhouse.org/sites/default/files/2021-09/2021-09-14-climate-change-risk-assessment-quiggin-et-al.pdf](https://www.chathamhouse.org/sites/default/files/2021-09/2021-09-14-climate-change-risk-assessment-quiggin-et-al.pdf)

This crisis could only be resolved by a collective determination to step up climate action to an emergency level, akin to a wartime mobilisation, in which climate mitigation becomes the first priority of climate and politics in Australia and around the world. Such a mobilisation will mean economic disruption and large-scale social and political change, but this can no longer be avoided; the alternative, of escalating climate impacts and self-sustaining warming, will be far worse. In these circumstances, the defence sector has the experience and capacity to be a significant contributor to enacting such a mobilisation. Defence should ensure it is well prepared for such a task.

An emergency implies acting early rather than later, otherwise mitigation becomes secondary to adaptation as incumbencies throw their resources at managing symptoms, rather than paying adequate attention to the underlying climate change cause. This may lead into a “death spiral” toward societal collapse, as climate impacts escalate unconstrained. The beginnings of this are already seen in responses around the world, not least in the lack of preparation for the uncharted territory manifested in 2019-20 Australian bushfires, in the ongoing east coast floods, and in the continued political willingness to expand Australia’s fossil fuel industry despite the fact that this will make similar future events even worse.

## Climate interventions (geoengineering)

The immediate priority must be to stop fossil fuel expansion, rapidly reduce carbon emissions, and draw down carbon from the atmosphere to more stable concentrations. However, there is little time to achieve these objectives if humanity is to retain some control over global warming.

In the 2030 scenario sketched above, the clear evidence that the world has failed to constrain warming within the Paris limits will likely push climate interventions (geo-engineering) towards the top of the climate agenda. Such interventions are required now – for example with current research and advocacy to cool the Arctic using marine cloud brightening – to prevent a cascade of events whose outcomes may drive the climate system beyond human capacity to rein in further warming.<sup>35</sup>

But the need for cooling at a much larger scale –for example with solar radiation management – will be more obvious by the end of the decade. Given the lack of governance or any significant progress towards an international geoengineering agreement, there is a substantial risk that unilateral action by nations experiencing the greatest harm, and with the capacity to deploy cooling technologies, will result in dispute and conflict.

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35 [climaterепair.cam.ac.uk](http://climaterепair.cam.ac.uk)

For example, China currently employs around 35,000 people in weather modification with cloud seeding programs. These in part are designed to push atmospheric moisture from the Tibetan Plateau north onto the grasslands of northern China and Mongolia which are lurching towards a climate tipping point of irreversible heat, drought and desertification.<sup>36</sup> Already water has become a regional flashpoint. The loss of the ice sheets (already well underway) in the Hindu Kush, Himalayan and Tibetan Plateau regions – where all the major rivers of Asia rise – will exacerbate regional geopolitical tensions as water shortages in India, Pakistan and China become more critical. Dam construction and control of rivers flowing from the Himalayan plateau through several nations will become increasing sources of conflict.

Many proposed climate intervention approaches are unproven at scale and pose major technical issues, as well as a myriad of legal and ethical challenges. Unfortunately the failure of global leadership to address climate change has now brought the world to the point that geoengineering must be seriously investigated as there may be no alternative but to resort to such measures.

Whilst it is not appropriate to delve further into these issues in this submission, it is important to recognise the capacity of climate interventions to become security and defence concerns.

## Food security crises

Food insecurity is one of the immediate outcomes of escalating climate change. Australia is ill-prepared for the resulting global food crises and their systemic, cascading risks to human and global security.<sup>37</sup>

Food scarcity has already become a contributing factor to major conflicts around the world, including the Syrian civil war. Climate change will exacerbate rising food prices and shortages. Food and water insecurity will increasingly become major drivers of global conflict and instability, particularly in the Middle East and North Africa.

A cascading climate security crisis initiated by chronic water shortages, crop failures and diminishing yields, and amplified by more extreme climate events and supply-chain dislocations, is likely to emerge globally, including in strategically important areas in the Indo-Pacific, posing a security challenge to Australia.

Similarly, climate change and conflict can combine to make food even more expensive and scarce, as is the case with Ukraine's role as a major wheat exporter. Likewise record-breaking heat waves across south Asia have led India to ban wheat exports, worsening the food crisis.

<sup>36</sup> [theguardian.com/world/2020/dec/03/china-vows-to-boost-weather-modification-capabilities](https://www.theguardian.com/world/2020/dec/03/china-vows-to-boost-weather-modification-capabilities)

<sup>37</sup> [aslccg.org/wp-content/uploads/2022/06/ASLCCG-Food-Fight-Report-June-2022-1.pdf](https://www.aslccg.org/wp-content/uploads/2022/06/ASLCCG-Food-Fight-Report-June-2022-1.pdf)

There will be big consequences for Australia's economic and human security. Australia's own food growing systems will be disrupted, and food insecurity in the region will drive political instability, conflict, and people displacement.

Yet Australia has been reluctant to assess their likelihood, understand the consequences, and act to rapidly reduce the risks by strong emission reduction along with adaptation and regional resilience plans.

To enhance the capacity of neighbours to withstand climate-changed driven food shocks and their security consequences, Australia should contribute to deploying a monitoring system to identify potential food insecurity hotspots, and commit to a programme to enhance food production capacity and resilience in the region.

### **Climate–security risk assessment**

As mentioned above, a realistic defence and security strategy, along with climate policy, must be built around a full understanding of the risks of climate change, which to date have not been adequately assessed in Australia. Hence ASLCG's 2021 call for an urgent, comprehensive Australian risk assessment to provide the basis for ongoing, systemic policy across the full spectrum of government. This must encompass an assessment of both domestic and international risks. Whilst ONI is currently conducting a global assessment, the domestic assessment remains an urgent outstanding task. Key elements would include:

- An holistic approach, encompassing the broad risks to human, national and regional security; avoiding siloed, departmental-specific analysis or a narrow traditional defence-oriented national-security analysis;

- Local focus, global context; assessing domestic climate threats in particular, placed within a global context;
- Broad expertise and input. It should be guided by a well-resourced, independent expert panel, drawing upon the best expertise from relevant fields within and external to government, not just within government;
- No "sugar coating". The risk analysis must account for system complexity and deep uncertainty, adopting an existential risk-management framework where attention is given to the question: what are the feasible, worse-case scenarios that might occur and what actions are required to prevent, prepare and protect against the worst outcomes?
- Leverage existing work. To avoid duplication and thus reduce the analytical workload, the assessment should draw on existing international work. For example the 2021 risk assessment prepared by Chatham House and its high-quality scenario is a foundation on which to build regional and Australian domestic assessments.
- Transparency. The process should not be secret, but instead fully engage the public, relevant experts, and stakeholders in both the assessment itself, and in the outcomes, so as to build community understanding and support for the difficult decisions which lie ahead.

A sound understanding of both domestic and global climate risks is essential to the formulation of realistic defence and security policy

## Economic choices

The economic cost of natural disasters in Australia has been steadily rising over recent decades. In 2017, it was around \$18 billion, with the Australian Business Roundtable (ABR) forecasting at that time a rise to around \$39 billion annually by 2050. Unfortunately, past estimates can no longer be taken as a guide to the future. The cost of the 2019-20 bushfire season was around \$100 billion, and the cost of the February 2022 Lismore flood event alone is likely to be well over \$5 billion. The most recent ABR estimate suggests costs averaging \$76 billion annually by 2060, a significant increase on the previous estimate, much of which is climate change-related.<sup>38</sup>

Apart from the escalating costs of natural disasters, the additional investment required to transition Australia to a competitive net-zero economy by 2050, compared to the status quo, has been estimated to be around \$420 billion.<sup>39</sup>

These funding requirements will place further demands upon an economy which is already carrying unprecedented gross government debt of around \$900 billion as a result of the Covid pandemic.

Pressure on budgets will undoubtedly increase as governments struggle to meet competing demands, for example in the health, aged care and disability arenas, with the impact of climate change and compounding events intensifying.

Responding in full measure to the climate emergency will require a global mobilisation, unprecedented in peacetime, of economic resources to mitigate the risk and adapt to the threats. Australia has a responsibility to provide fair and equitable support to nations with less capacity to prepare and respond. This will require fundamental changes in the Australian economy and government expenditure priorities. Clearly, the current government direct fossil fuel subsidies of more than \$11 billion a year should cease, but beyond that hard choices must be made in order to shape the economic and security environment so as to prioritise effective climate mitigation and resilience. All government spending areas, including defence, need to be examined in this light.

Certainly, Australia requires the ability to defend its own territory, and to mitigate social disruption and conflict in the region as appropriate, but the nature of that defensive capacity is changing rapidly, as the Ukraine conflict is demonstrating.

The bigger picture is that whilst climate change is an existential threat, it is also Australia's greatest opportunity for economic prosperity and security in the low carbon world we must create. This potentially could see Australia's global standing and influence far outweigh its historical role.<sup>40</sup> Cooperation between G20 nations, rather than conflict, is an essential part of creating this future. The zero-carbon world also requires new thinking on where Australia's developing interests may lie, for example in the resurgence of Africa, and the strategic implications thereof.

38 [iag.com.au/sites/default/files/Newsroom%20PDFs/Special%20report%20\\_Update%20to%20the%20economic%20costs%20of%20natural%20disasters%20in%20Australia.pdf](https://www.iag.com.au/sites/default/files/Newsroom%20PDFs/Special%20report%20_Update%20to%20the%20economic%20costs%20of%20natural%20disasters%20in%20Australia.pdf)

39 [news.nab.com.au/wp-content/uploads/2022/07/AllSystemsGo.pdf](https://www.news.nab.com.au/wp-content/uploads/2022/07/AllSystemsGo.pdf)

40 [blackincbooks.com.au/books/superpower-transformation](https://blackincbooks.com.au/books/superpower-transformation)

## Humanitarian Assistance & Disaster Resilience

Australia's emergency and disaster management services, much of which are volunteer-based, have historically been adequate to contend with natural disasters across the continent. However, the recent impacts of more frequent and intense climate change events have demonstrated that this is no longer the case. The cascading impacts of multiple events occurring sequentially, with little time in between for recovery, has exacerbated the challenge, such that demand for emergency responses has become more of a continuum, rather than infrequent isolated events.

The ADF has always been a resource of last resort in undertaking humanitarian assistance and disaster resilience (HADR) missions, to be called upon in extremis.<sup>41</sup> Those calls are becoming more frequent, both within Australia and in our region, and will increase along with climate change impacts.

It is evident that Australia's current volunteer-based emergency response capacity will not be able to respond adequately to this mounting pressure, so the demands on ADF HADR capacity will increase in the absence of a restructuring of civilian services. Various solutions have been mooted, for example a national voluntary service obligation, given that use of ADF military resources in such circumstances is an expensive option.

Likewise, HADR demands within the region, and calls upon the ADF, will escalate, given that south-east Asia and the Pacific are amongst the regions most vulnerable to climate change impact. This underlines the importance of reframing Australia's current narrative of "winning the battle for influence in the region" (against China), to one of cooperating with China and other nations to address a common existential threat.

The DSR should factor in this increasing HADR role, the need for better integration with civilian services, and for cooperation rather than conflict in the region.

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<sup>41</sup> [ad-aspi.s3.ap-southeast-2.amazonaws.com/2021-10/SR%20176%20Snapshot%20in%20a%20turbulent%20time.pdf](https://ad-aspi.s3.ap-southeast-2.amazonaws.com/2021-10/SR%20176%20Snapshot%20in%20a%20turbulent%20time.pdf)

