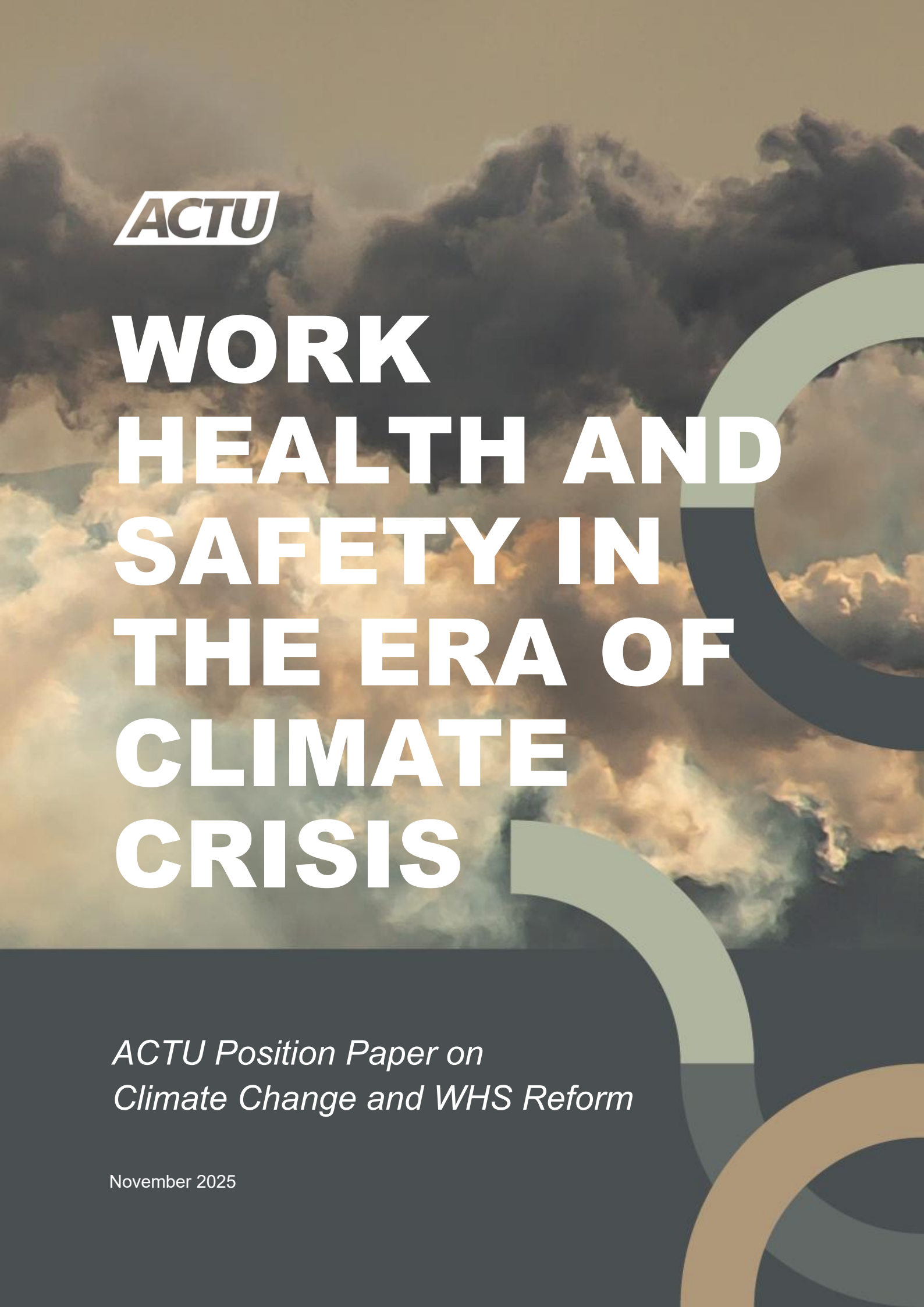

WORK HEALTH AND SAFETY IN THE ERA OF CLIMATE CRISIS

ACTU Position Paper on Climate Change and WHS Reform

November 2025

PURPOSE

This ACTU position paper highlights the growing impacts of climate change on Australian workers and the inadequacy of the current work health and safety (WHS) framework to protect workers from those impacts. It proposes a series of regulatory reforms to strengthen the WHS rights-based framework by directly address worsening climate hazards.

THE POSITION PAPER IS DIVIDED INTO THE FOLLOWING SECTIONS:

SUMMARY OF RECOMMENDATIONS

HEAT STRESS

1. Develop a WHS Regulation that covers the risks associated with heat using risk assessment criteria, similar to the hazardous manual tasks regulation.

2. Review and strengthen existing codes of practice, including the *Code of Practice on Managing the work environment and facilities*, by expanding the section on heat, cold and outdoor work.

3. Explore the role of acclimatisation in improving heat tolerance and the possibility of requiring Persons Conducting a Business or Undertaking (PCBUs) to implement protocols and standards to facilitate worker acclimatisation, which can significantly reduce the risk of heat stress and improve safety.

4. Review the deemed disease list for workers' compensation, with a view toward expanding this list in consideration of the increasing on-the-job epidemiological hazards associated with climate change. This should also consider a mechanism for deeming heat-related illnesses based on *Annex number 1.2.6 - Diseases caused by exposure to extreme temperatures* under the list of occupational diseases identified by the ILO.[1]

5. Encourage PCBUs to include climate change as a standing agenda item at all Work Health & Safety Committee Meetings.

AIR QUALITY

6. Develop a new WHS Regulation on indoor air quality or amend the provisions in regulation 40 of the Model Regulations around general working environment.

7. Review and strengthen existing Codes of Practice, including the *Code of Practice on Managing the work environment and facilities*, which includes a section on ventilation, as well as the *Code of Practice on biological hazards*.

8. Review lessons from the 2019 bushfire IAQ tests—emphasising real-time monitoring and controlled ventilation—to establish and publish safe exposure guidelines for indoor and outdoor workers.

9. Develop a Model Code of Practice to limit outdoor workers' exposure to air pollution in the workplace, including bushfire smoke.

[1] *List of Occupational Diseases Recommendation*, 2002 (No. 194), ILO 2002.

INCLEMENT WEATHER

10. Review and strengthen Model WHS Regulation 43 (duty to prepare, maintain and implement emergency plan).

11. Strengthen the Model Code of Practice on Managing the work environment and facilities, which includes a section on emergency plans covering natural disasters. This Code of Practice should cover PCBU obligations to develop and conduct emergency planning in consultation with the workforce.

12. Develop a tool through Safe Work Australia (SWA) to measure both the climate vulnerability of workplaces and the extent of climate risk for workers themselves.

VECTOR-BORNE ILLNESSES

13. Develop a biological hazards Regulation, which would cover vector-borne illnesses.

14. Ensure the draft *Code of Practice on biological hazards* (currently in draft) sufficiently considers the risks associated with vector-borne diseases and their increase due to climate change.

15. Review the deemed disease list for the purposes of workers' compensation, to expand this list in consideration of the increasing on-the-job epidemiological hazards associated with climate change. This should also consider a mechanism for deeming new vector-borne illnesses.

INDUSTRY-SPECIFIC CODES OF PRACTICE

16. Safe Work Australia should work with state and territory governments, along with relevant unions, to develop industry-based compliance codes, with chaptered subsections for each of the hazards described above.

EVERY AUSTRALIAN WORKER IS IMPACTED BY CLIMATE CHANGE

The world is currently on track to experience nearly 3° C warming above pre-industrial levels by the end of this century. On that warming trajectory, the National Climate Risk Assessment (NCRA) concludes that by 2050, 1.5 million Australians living in coastal communities will be at high risk of annual flooding. By the 2060s, Australia will witness up to 45 days per year in which extreme heat makes manual labour too dangerous to perform outdoors and at least 2.7 million additional days of work are lost every year to climate disasters. By the end of the century, heat deaths will spike 444% in Sydney, 423% in Darwin, 312% in Perth, and 259% in Melbourne and reduced labour and agricultural productivity will result in a cumulative wealth loss of $4.2 trillion.

These statistics illustrate a vital point: climate change hurts workers. Climate action—cutting emissions, just transition, and adapting to impacts already "baked in"—is now core union business. Without urgent action, workers' fundamental right to safe and healthy work will be increasingly undermined by rising temperatures.

Climate change is most felt by people who cannot escape its impacts, including workers whose livelihood puts them at risk from climate extremes. Workers, especially those working outdoors, are frequently the first to be exposed to the consequences of climate change, often for longer periods and at greater intensities than the general population.[2] The International Labour Organisation estimates that 15,000 work-related deaths are caused by vector borne illnesses annually, over 19,000 by skin cancer from UV radiation, and up to 860,000 from workplace air pollution—all linked to and significantly worsened by climate change.[3] Globally, Work Health & Safety (WHS) policies and practices are increasingly failing to protect workers from a variety of climate-related hazards.

Strong evidence demonstrates that climate change and environmental degradation lead to a deterioration of working conditions and an increased risk of occupational injury, disease and death[4]. Numerous health conditions in workers have been linked to the impacts of climate change, including cancer, cardiovascular disease, respiratory illnesses, and mental health conditions, among many others. In general, pregnant women, children, older adults, Aboriginal and Torres Strait Islander people, and persons with disabilities are more vulnerable to health stressors such as extreme heat, air pollution and other climate-related impacts[5].

Different sectors are affected in different ways and to varying degrees. Those at greatest risk include outdoor workers, who often work in physically demanding sectors, such as agriculture,

[2] *Chemicals and Climate Change in the World of Work: Impacts for Occupational Safety and Health* - Research Report. ILO, July 2023

[3] *Ensuring safety and health at work in a changing climate*, Geneva: International Labour Office, April 2024.

[4] *Advancing the framework for considering the effects of climate change on worker safety and health*. J Occupational and Environmental Hygiene. November 2016.

[5] *Health effects of climate change: an overview of systematic reviews*. BMJ Open, June 2021.

construction and transportation[6]. Also, at risk are those working in hot indoor environments or poorly ventilated enclosed spaces that lack adequate air conditioning. The use of clothing such as personal protective equipment (PPE) can reduce air movement, impair the evaporation of sweat and increase the risk of heat related illness. This can jeopardise physical and cognitive performance, with further potential safety implications. Some working environments may become dangerous especially quickly, for example those which already generate heat, such as bakeries, foundries and laundries[7]. Furthermore, there will be increased pressure on emergency services, the healthcare sector and other public services, with emergency response workers such as firefighters and paramedics facing increasingly hazardous working conditions. These workers are often required to work continuously to meet emergency demands and to manage staff shortages, with this overwork posing its own serious health and safety risks.[8]

Climate-sensitive health risks are disproportionately felt by the most vulnerable and disadvantaged workers, including women, workers with disability, Aboriginal and Torres Strait Islander workers, migrant workers and those with underlying health conditions and chronic illnesses. Workers with a disability experience disproportionately higher rates of social risk factors that contribute to poorer health outcomes during extreme weather events and climate-related emergencies.[9] Studies show that women workers face increased health risks resulting from climate variability and extreme heat during pregnancy and menopause, which left unaddressed can drive lower workforce participation among women in the long term[10]. Migrant workers also face disproportionate climate risks, as they are frequently employed in high-risk, physically demanding occupations and may be unable to understand WHS procedures and frameworks due to language and cultural barriers.[11]

[6] *Ensuring safety and health at work in a changing climate*, Geneva: International Labour Office, April 2024.
[7] *Heat at Work: Implications for Safety and Health. A Global Review of the Science, Policy and Practice*. ILO. July 2024.
[8] *Nursing in the Anthropocene–translating disaster nursing experience into climate crisis nurse education,* Teaching and Learning in Nursing, Volume 18,2023.
[9] *Climate change and the right to health of people with disabilities*, Lancet Global Health, Jan 2022.
[10] *The Labor Market Consequences of Heat Exposure During Pregnancy*, National Bureau of Economic Research, September 2023.
[11] *Updated Assessment of Occupational Safety and Health Hazards of Climate Change*. Journal of Occupational and Environmental Hygiene. April 2023.

RIGHTS IGNORED: AUSTRALIA'S WHS REGIME AND THE CLIMATE GAP

The Australian WHS framework is explicitly built on a rights-based foundation, enshrining every worker's right to "be shown how to work safely," and to work in environments "without risk to health and safety", with the Model WHS Act requiring duty holders to "eliminate or minimise risk" to "secure the health and safety of workers". Failure to adapt the WHS regime to address new and escalating climate impacts risks violating these foundational rights by failing to protect workers from foreseeable and preventable harm, effectively undermining the core principle that workers should receive "the highest level of protection against risks to their health and safety".

The duty of care principle—which requires Persons Conducting a Business or Undertaking (PCBUs) to "adhere to a standard of reasonable care to prevent foreseeable harm to others"—is undermined when governments fail to enforce mandatory climate adaptation measures on employers, despite knowing that most workplaces will become dangerous due to the increasing impacts of climate change. By allowing workers to bear the preventable costs of regulatory inaction while climate risks escalate, Australia's approach effectively transforms workplace safety from a guaranteed right into a conditional privilege dependent on favourable weather conditions – a fundamental violation of the rights-based framework that demands proactive protection of all workers regardless of external environmental conditions.

Australia has been falling behind other highly industrialised nations and out of alignment with cutting edge global research and policy development on climate and WHS.[12][13] An ILO analysis of heat stress management policies across 21 countries – seven of them in the OECD – found that all of them had legislated some form of mandatory provision around WBGT thresholds (Wet Bulb Globe Temperature - a heat stress indicator combining temperature, humidity, wind and radiation), specific heat risk assessments, mandatory rest breaks, cool rest areas, heat acclimatisation programs, and medical monitoring.[14] Australia lacks most of these specific provisions, relying instead on the general duty to provide a "safe work environment" rather than the measurable heat stress protections that have become international best practice.[15]

The Model Workplace Health and Safety Act does not explicitly cover the hazards of climate change like extreme heat – rather, management of the problem is covered more generally by the primary duty to ensure a safe work environment. The core problem lies in the lack of specific regulations addressing climate-related WHS issues, which are necessary to ensure that PCBUs seek to eliminate, or if not practicable, reduce the risks associated with climate impacts

[12] *Impacts of hot climatic conditions on work, health, and safety in Australia: A case study of policies in practice in the construction industry,* Safety Science, September 2023.

[14] *Heat at Work: Implications for Safety and Health. A Global Review of the Science, Policy and Practice*. ILO. July 2024.

[15] *Heat at Work: Implications for Safety and Health. A Global Review of the Science, Policy and Practice*. ILO. July 2024.

that compromise workers' health and safety. These regulations should require PCBUs to take all reasonably practicable steps, using the hierarchy of control, to meet their duty to provide a safe work environment.

Previously, Safe Work Australia has published a variety of materials to assist PCBUs in managing some related risks to the health and safety of workers. The Model Code of Practice on managing the work environment and facilities includes specific control measures for eliminating, or otherwise minimising exposure to extreme heat and UVR when working outdoors.[16] The Model Code of Practice on psychosocial hazards at work provides some guidance on controlling psychosocial hazards that arise from a poor physical work environment.[17] The *Code of Practice on managing the work environment and facilities* provides information on managing the risks of working in UV-exposed work environments.[18] But these instruments create a regulatory landscape where climate protections take the form of general guidance rather than binding law, severely limiting their efficacy.

Safe Work Australia (SWA) continues to rely on general duty of care provisions, without setting specific temperature thresholds, heat stress limits, or mandatory climate adaptation requirements to protect workers. This regulatory approach appears increasingly inadequate in light of the government's National Climate Risk Assessment, which confirms that workplace risks will intensify significantly—with e.g., manual outdoor labour projected to become too dangerous to perform for 15 to 26 days annually in Perth by 2070.[19] Despite this, the Australian Work Health and Safety Strategy 2023–2033 offers only a commitment to "assess responses" to climate impacts by 2033[20]. This timeline does not sufficiently address the urgent need for stronger worker protections as climate risks continue to accelerate across Australia.

The Commonwealth must address these escalating threats, through integrating climate and environment concerns into WHS policy and practice at all levels, as well as mainstreaming WHS concerns into climate policy. This is crucial to protect the safety and health of workers and contribute to the overall goal of the Australian WHS system: to create and maintain safe and healthy work environments. Without further reform, a fragmented approach to the question of WHS and climate change could leave Australian workers dangerously exposed to rising temperatures—or force them to choose between their safety and their livelihood. As the lead agency tasked with developing national WHS policy, SWA must work proactively and across departments to fill this significant policy gap.

[16] *Model Code of Practice: Managing the work environment and facilities*, Safe Work Australia, August 2022.
[17] *Model Code of Practice: Managing psychosocial hazards at work*, Safe Work Australia
[18] *Guide on exposure to solar ultraviolet radiation*, Safe Work Australia, December 2019.
[19] *Australia's First National Climate Risk Assessment*, Australian Climate Service, Australian Government, September 2025.
[20] *Inertia in transformed times: Work health and safety amid climate change*, Elizabeth Humphrys, Journal of Industrial Relations, November 2024.

CLIMATE HAZARDS AND RECOMMENDED WHS REFORMS

A. HEAT STRESS

Climate change is driving more frequent and severe extreme heat events around the world. Estimates indicate excessive heat is currently responsible for 18,970 deaths annually, 22.85 million occupational injuries, and the loss of 2.09 million disability-adjusted life years.[21] The ILO reports that in Asia and the Pacific, exposure to excessive occupational heat is above the global average.[22] Heat stress poses serious health and safety risks for workers across different industries in Australia. Heat-related illnesses range in severity from mild heat rash and swelling, to heat stress and heat exhaustion, to more severe and potentially fatal illnesses such as rhabdomyolysis (muscle damage), acute kidney injury, heat stroke and heat stress-induced cardiac arrest.[23] As hot days and heatwaves increase in frequency and become more intense, these risks increase. Outdoor workers, those working indoors without temperature controls and ventilation, workers moving between different climates, and emergency service workers are particularly at risk.

Workplace injuries also increase markedly on hotter days. According to a study on 35 years of Australian occupational health claims, a day with temperatures reaching 33 to 36 °C averages 5.3% more claims than when temperature remains between 18 and 21 °C.[24] Research further demonstrates that the mechanisms producing adverse impacts of heat on workers' safety extend beyond a direct effect of heat on the body—like heat-related accidents and injuries—to include long-term productivity loss and terminal illnesses.[25] Studies also show that workers, rather than PCBUs, predominantly bear the costs of increased heat stress through lost future earnings.[26] Safe Work Australia's 2015 report on heat-related workplace accidents and hazards confirms that workers bear 74% of the total costs related to heat induced hazards, the community bears 21%, and firms bear only the remaining 5%.[27]

In Australia, temperature triggers and heat safety cut-off mechanisms are not common outside unionised workplaces where the relevant union has won the condition through enterprise bargaining. The current guidance on heat stress—Safe Work Australia's *Guide on Managing the Risks of Working in Heat*—is general, non-binding, and often confusing. According to global standards for heat stress management outlined in the ILO's *Heat at Work* report, Australia's current reliance on general WHS laws falls short in its lack of specific regulations to address

[21] *Ensuring safety and health at work in a changing climate*, Geneva: International Labour Office, April 2024.
[22] *Heat at Work: Implications for Safety and Health. A Global Review of the Science, Policy and Practice*. ILO. July 2024.
[23] *A Bad Climate: The Climate Crisis is putting workers at potentially deadly risk* , International Trade Union Confederation, 2024.
[24] *Feeling the heat: how our workplaces will become more dangerous*, Monash Business School, August 2022.
[25] *Climate Change and Occupational Health, Are There Limits to Our Ability to Adapt?* Journal of Human Resources, January 2021.
[26] *Heat and worker health*, Journal of Health Economics, September 2023.
[27] *The Cost of Work-related Injury and Illness for Australian PCBUs, Workers and the Community: 2012–13*. Safe Work Australia, November 2015.

climate change-related workplace hazards.[28] These provisions are often too broad and ill-defined to meet the challenges posed by a warming climate. Even in the limited cases where temperature triggers are mentioned, the qualitative guidance is vulnerable to misinterpretation and lacks any mechanism for evaluation, let alone enforcement. As a result, duty-holders and workers across multiple industries continue to struggle with the growing impacts of heat stress.

In July 2024, the United States Department of Labor proposed new regulations to protect workers from extreme heat due to climate change.[29] Countries like Qatar and Japan have progressed from general guidance to implementing mandatory, legally enforceable requirements under national occupational health and safety (OHS) legislation compelling PCBUs to assess risks from excessive heat and then reduce and, wherever possible, prevent them.

Australia should follow suit to establish clear and accessible OHS pathways that prioritise organisational and environmental controls over individual adaptation. Participatory, workplace-level heat risk assessments should focus on comprehensive measures that prevent heat stress for the entire workforce, rather than on individualised solutions —while recognising that worker susceptibilities may differ due to factors such as acclimatisation, health status, age, medication, or pre-existing conditions.[30]

RECOMMENDATIONS

The ACTU recommends that, at minimum, the following steps be taken to address the impacts of heat stress on worker health and safety:

1. Develop a WHS Regulation that covers the risks associated with heat using risk assessment criteria, like the hazardous manual tasks' regulation, rather than a one-size-fits all threshold. Drafting of the regulation should take the following into consideration:

- The ILO's global review of WHS reforms in response to impacts of heat stress reveals that 15 of the 21 national frameworks analysed (71 per cent) use a heat stress indicator to assess the level of exposure[31]. Use of the wet bulb globe temperature (WBGT) as a potential heat stress indicator to assess the level of heat exposure, with varying safety thresholds based on occupation, is the most

[28] *Heat at Work: Implications for Safety and Health*. A Global Review of the Science, Policy and Practice. ILO.2024.
[29] Heat Injury and Illness Prevention in Outdoor and Indoor Work Settings, Department of Labor, Occupational Safety and Health Administration, United States Government.
[30] A 5 Step Guide for PCBUs, workers and their representatives on conducting workplace risk assessments. ILO December 2013.
[31] *Heat at Work: Implications for Safety and Health*. A Global Review of the Science, Policy and Practice. ILO.2024.

common method adopted by countries which have standards to cover risks associated with workplace heat stress.[32]

- Maximum safe temperatures can vary according to work intensity, the nature of the work, the heat acclimatisation of the workers, the presence or absence of shade or air conditioning etc., so different safety thresholds are appropriate for protecting different types of workers from heat stress.

2. Review and strengthen existing codes of practice, including the *Code of Practice on Managing the work environment and facilities*, by expanding the section on heat, cold and outdoor work, including protection against the risks of UV.

3. Explore the role of acclimatisation in improving heat tolerance and the possibility of requiring PCBUs to implement protocols and standards to facilitate worker acclimatisation, which can significantly reduce the risk of heat stress and improve safety.

4. Review the deemed disease list for workers' compensation, with a view toward expanding this list in consideration of the increasing on-the-job epidemiological hazards associated with climate change. This should also consider a mechanism for deeming heat-related illnesses based on *Annex number 1.2.6 - Diseases caused by exposure to extreme temperatures* under the list of occupational diseases identified by the ILO.[33] Drawing on these guidelines, countries such as France and Spain have recognised and expanded the list for workers compensation to classify heat-related illnesses as occupational diseases. [34] [35]

5. Encourage PCBUs to include climate change as a standing agenda item at all Work Health & Safety Committee Meetings. PCBUs must be encouraged to consult with workers and their representatives on WHS issues. Climate change should be an Agenda item to be discussed at health and safety committee meetings or similar forums where the views of workers are represented and considered.

[32] *Heat at Work: Implications for Safety and Health*. A Global Review of the Science, Policy and Practice. ILO.2024.
[33] *List of Occupational Diseases Recommendation*, 2002 (No. 194), ILO 2002.
[34] *Table of Occupational Diseases*, General Scheme Table 58, French Ministry of Labour (INRS), Occupational Health & Safety.
[35] *National Plan of Preventive Actions against the effects of excessive temperatures on health*, Ministry of Health, Government of Spain,2025.

B. AIR QUALITY

Over 860,000 outdoor workers die annually from occupational air pollution, a number likely significantly higher when accounting for indoor workers.[36] Workplace air pollution, both indoor and outdoor, can cause acute and chronic health issues like cancer, stroke, respiratory and cardiovascular diseases. Climate change continues to alter weather patterns, affecting the levels and locations of pollutants like ground-level ozone, nitrogen dioxide, and sulphur dioxide. Climate variations are also expected to increase the intensity and duration of wildfires, which emit significant particulate matter and ozone precursors, risking the health & well-being of frontline and indoor workers alike.

The combined impact of air pollution and excessive heat must also be considered, as there is growing evidence that exposure to both simultaneously presents a greater combined risk to health than the sum of their individual risks.[37] Changes in climate, specifically rising temperatures, altered precipitation patterns and increasing concentrations of atmospheric carbon dioxide, are expected to contribute to increases in the levels of airborne allergens and associated increases in asthma episodes and other allergic illnesses, especially for outdoor workers.[38] For example, In November 2016, Victoria experienced an unprecedented thunderstorm asthma event that resulted in 10 deaths.[39] The event, which occurred on November 21, overwhelmed emergency services and hospitals with a significant increase in respiratory-related presentations.

Australia faces a critical regulatory gap in workplace indoor air quality protection, with existing frameworks providing insufficient protection for workers. Current WHS legislation relies primarily on Workplace Exposure Standards (WES) designed for specific industrial airborne contaminants like welding fumes and chemical vapours but lacks comprehensive indoor air quality performance standards that address broader environmental pollutants, such as particulate matter from bushfire smoke, build-up of carbon dioxide from poor ventilation, etc.[40] This regulatory gap, where responsibility for indoor air quality is fragmented across multiple authorities without coordinated oversight, leaves Australian workplaces vulnerable to poor air quality that negatively impacts the health and wellbeing of workers.

Although there are building codes in place for the construction of indoor workplaces, there is generally no guidance in place to address the ongoing operation of these buildings regarding air quality and the levels of pollutants that workers are exposed to. Workers operating in hot environments with strong or reactive chemicals often face multiple hazards. Elevated temperatures can trigger chemical reactions, cause pressure build-up, and even lead to

[36] *Ensuring safety and health at work in a changing climate*, Geneva: International Labour Office, April 2024.
[37] *Combined Effects of Air Pollution and Heat Exposure in Europe: Time for Action.* European Environment Agency, November 2023.
[38] *Air Quality Impacts - The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment.*' U.S. Global Change Research Program, April 2016.
[39] *Your Health: Report of the Chief Health Officer - Thunderstorm Asthma*, Victoria Department of Health, Victoria State Government, December 2018.
[40] *Workplace Exposure Limits for Airborne Contaminants*, Safe work Australia, July 2025.

explosions—particularly when dealing with volatile or flammable substances[41]. While dangerous goods are known to be highly combustible, there is growing concern that rising atmospheric heat may cause hazardous substances to behave similarly, increasing the risk of ignition or instability.

While SWA acknowledges employer duties to manage air pollution risks and maintain work environments "without risks to health and safety," the current approach lacks specific indoor air quality thresholds, monitoring requirements, or enforcement mechanisms.[42] International best practice and mounting scientific evidence support the establishment of a coordinated national framework that would integrate indoor air quality standards into WHS legislation, ensuring systematic protection of Australia's predominantly indoor workforce through mandatory monitoring, performance targets, and compliance mechanisms aligned with contemporary public health research and evidence[43].

There is an urgent need for a comprehensive national WHS framework specifically addressing indoor air quality, as current standards fail to protect workers from the full spectrum of airborne health risks. The Australian government should move quickly to develop and mandate indoor air quality standards that can be adopted by various jurisdictions and applied to various indoor work settings and scenarios.

RECOMMENDATIONS

The ACTU recommends that, at minimum, the following steps be taken to address the impacts of indoor air quality on worker health and safety:

6. Develop a new WHS Regulation on indoor air quality or amend the provisions in regulation 40 of the Model Regulations around general working environment.

7. Review and strengthen existing Codes of Practice, including the *Code of Practice on Managing the work environment and facilities*, which includes a section on ventilation, as well as the *Code of Practice on biological hazards*.

8. Review lessons from the 2019 bushfire IAQ tests—emphasising real-time monitoring and controlled ventilation—to establish and publish safe exposure guidelines for indoor and outdoor workers. This process should seek guidance on effective ventilation strategies, including both natural and mechanical ventilation, to control indoor humidity and airborne contaminants while recognising the importance of effective air filtration to improve indoor air quality.

[41] *Managing the risks of Hazardous Chemicals in the Workplace* , Code of Practice, Work Health and Safety Queensland,2021.
[42] Managing the Risks from Air Pollution: Advice for PCBUs, Safe Work Australia.
[43] *Healthy Indoor Air is our Fundamental Need: the time to act is now*. The Medical Journal of Australia, November 2022.

9. Develop a Model Code of Practice to limit outdoor workers' exposure to air pollution in the workplace, including bushfire smoke—currently addressed through a guidance issued by SWA.

C. INCLEMENT WEATHER AND EMERGENCIES

The cascading effects of extreme-weather events made more frequent and intense by climate change are increasingly affecting every worker in Australia. In NSW, for instance, drought conditions were followed by the devastating Black Summer wildfires (2019–2020), and multiple severe flooding events (2021–2022). These climate change-driven extreme weather events have had profound socio-economic impacts on thousands of workers, compounding mental and physical health issues while eroding economic and social security.[44] Workers at heightened risk, including casual, elderly, women, disabled, and Aboriginal and Torres Strait Islander workers, are particularly vulnerable in these emergencies.

Many extreme weather events have also led to major damage to hazardous installations, such as factories or extraction sites, triggering the release of hazardous substances, fires and explosions. During extreme weather events, and in the immediate aftermath, demands on workers in the emergency services escalate quickly and unsustainably. Floods, storms, droughts, and wildfires often require complex emergency response, recovery, and rescue operations. Emergency workers are expected to work harder, for longer periods, in difficult and often hazardous circumstances.

For example, extreme heat and extreme weather events have shown a strong correlation to increases in violent behaviour, with community-facing workers often bearing the brunt—a risk category that must be recognised by PCBUs.[45] Delivery and continuity of care demands can lead to healthcare workers facing pressure to travel to work in unknown or unsafe conditions, or render them unable to leave work for extended periods.

Workers may also be exposed to biological hazards during flooding, for example bacteria, mould, faecal matter, and vector-related risks (for example cholera and Weil's disease), causing allergic, infection and toxicity risks.[46] In times of drought and wildfires, firefighters and other rescue workers may be exposed to elevated levels of particulate matter and face risks from chemicals in firefighting foams. The increased intensity and duration of the wildfire season due to drought can result in more exposure of firefighters to smoke and reduced firefighter recovery time between fire seasons.[47]

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[44] *Vulnerability and recovery: Long-term mental and physical health trajectories following climate-related disasters*, Social Science & Medicine, March, 2023.
[45] *Weather extremes, disasters, and collective violence: Conditions, mechanisms, and disaster-related policies in recent research*. Current Climate Change Reports, University of Hamburg, December 2018.
[46] *Non-Heat Related Impacts of Climate Change on Working Populations.* Global Health Action Report, December 2010.
[47] *Updated Assessment of Occupational Safety and Health Hazards of Climate Change.* Journal of Occupational and Environmental Hygiene, June 2023.

While all PCBUs have a legal obligation under existing WHS regulations to have emergency plans, evidence suggests that emergency preparedness often falls short, with inadequate planning and training leaving workers - especially first responders – vulnerable.[48] A large majority of PCBUs create only rudimentary emergency/disaster plans, often limited to poorly designed evacuation notices, rather than comprehensive strategies that address various hazards and potential consequences for workers. There are no national/statewide frameworks or monitoring processes to ensure that PCBUs carry out adequate training for workers on emergency procedures, hindering their ability to respond effectively during extreme weather events. Studies show that most workplace emergency plans do not adequately address the needs of vulnerable workers, such as those with disabilities or language barriers, potentially endangering them during an emergency.[49]

The primary reason for weak workforce emergency planning systems is the absence of frameworks that enforce comprehensive worker involvement in emergency planning. Increased involvement of workers in risk assessment and designing emergency planning frameworks at every workplace should be the foundation of workplace emergency response. Because the impacts of climate risks and the strategies to manage them must be continually reassessed, comprehensive worker engagement in emergency planning and preparedness is essential. This would also help in creating emergency workforce plans for disaster situations, ensuring that proper staffing levels, roles, responsibilities, and adequate work breaks are enforced to effectively balance workers' health and safety with increased workforce demands during emergencies. Workers consistently report that they are rarely consulted or even briefed adequately immediately after an extreme weather event to guide in recovery efforts.

The lack of worker consultation combined with inconsistent post-event evaluation and debriefing - crucial for identifying lessons learned and improving future preparedness post-emergency - renders workplaces increasingly prone to climate risks associated with extreme weather events.

RECOMMENDATIONS

The ACTU recommends that, at minimum, the following steps be taken to address the impacts of inclement weather and emergencies on worker health and safety:

10. Review and strengthen Model WHS Regulation 43 (duty to prepare, maintain and implement emergency plan).

11. Strengthen the Model Code of Practice on Managing the work environment and facilities, which includes a section on emergency plans covering natural disasters.

[48] *Rapid review of the impacts of climate change on the health system workforce and implications for action*, The Journal of Climate Change and Health, October 2024.
[49] *Disability Inclusive Emergency Management Toolkit: Principles and Practical Action Guide*, National Emergency Management Agency, Australian Government, December 2024.

This Code of Practice should cover PCBU obligations to develop and conduct emergency planning in consultation with the workforce.

12. Develop a tool through Safe Work Australia to measure both the climate vulnerability of workplaces and the extent of climate risk for workers themselves. The former tool should analyse workplaces' level of exposure to a range of climate hazards, while the latter should analyse risk factors for workers based on gender, age, dis/ability, and job in/security.

D. VECTOR-BORNE ILLNESSES

Several studies have linked climate change impacts with an increased risk of vector-borne diseases in workers.[50] Climate change is expected to alter the seasonality, distribution, and prevalence of existing vector-borne diseases, through higher temperatures, and shifts in humidity and rainfall patterns. These alterations can impact disease incidence through their effects on vector population sizes, survival rates, and reproduction. New ILO estimates have found that every year over 15,170 workers die due to occupational exposure to parasitic and vector-borne diseases. These numbers likely represent a significant underestimate due to insufficient data, as occupational exposures are not always recognised or notified.[51]

Outdoor workers are particularly susceptible to vector-borne diseases, as they have the highest exposure to vectors such as mosquitoes, ticks, and fleas.[52] These include farmers, foresters, landscapers, groundskeepers, gardeners, painters, roofers, pavers, construction workers, and firefighters. Emergency responders and healthcare workers who deal with infected subjects are also in danger of exposure.[53]

In Australia, increasing incidence of extreme weather, excessive rainfall, and flooding attributable to climate change have exacerbated the spread and re-emergence of vector-borne diseases in regions historically considered safe from such spread. This is evidenced, for example, by the 2023 Japanese encephalitis virus outbreak in Victoria, SA, and NSW—circa the 1990s, the virus had only ever been recorded in far northern Queensland.[54]

[50] *Impacts of Climate Change on Work Health and Safety in Australia: A Scoping Literature Review,* International Journal for Environmental Research and Public Health, October 2023.
[51] *A call for safer and healthier working environments*, ILO, November 2023.
[52] *Updated Assessment of Occupational Safety and Health Hazards of Climate Change*, Journal of Occupational and Environmental Hygiene.November,2023.
[53] *Impacts of Climate Change on Work Health and Safety in Australia: A Scoping Literature Review,* International Journal for Environmental Research and Public Health, October 2023.
[54] *2023 Murray Valley Encephalitis outbreak in Australia*, The Kirby Institute, UNSW Australia, August 2023.

RECOMMENDATIONS

The ACTU recommends that, at minimum, the following steps be taken to address the impacts of vector-borne illnesses on worker health and safety:

13. Develop a biological hazards Regulation, which would cover vector-borne illnesses;

14. Ensure the draft *Code of Practice on biological hazards* (currently in draft) sufficiently considers the risks associated with vector-borne diseases and their increase due to climate change;

15. Review the deemed disease list for the purposes of workers' compensation, to expand this list in consideration of the increasing on-the-job epidemiological hazards associated with climate change. This should also consider a mechanism for deeming new vector-borne illnesses.

IMPLEMENTATION OF INDUSTRY-BASED CODES OF PRACTICE

The increasing frequency and intensity of the above-mentioned hazards requires that PCBUs receive clear directions on their obligations to safeguard the health of employees under a rapidly changing climatic regime. The development and implementation of industry-based compliance codes would aim to address these climate-driven challenges. Such codes would serve as tailored guidelines to help specific industries navigate the hazards they face, ensuring the safety and well-being of their workforce while maintaining operational continuity.

Industry-based compliance codes would function as comprehensive frameworks that outline the necessary precautions and procedures to mitigate climate-related risks for that particular industry. The development and implementation of these codes would require a multi-faceted approach, allowing for localised responses to this global issue. In the healthcare sector, for instance, a specialised Code of Practice might emphasise climate-related hazards specific to the industry and link them to duty holders' obligations to control them under relevant WHS legislation and regulations. Obligations might include provisions for adequate heating and cooling, backup power generation, and the requirement for designers of new healthcare buildings to future-proof them against emerging climate-related hazards. Other specific employer obligations, such as those relating to employees working in rural or remote settings, would also need to be developed, given their different risk profiles compared to workers in urban settings.

Implementing industry-based compliance codes will require additional resources and inter-agency coordination to enforce new regulations effectively. This collaborative effort is vital to ensure that each industry can adapt to the distinct climate challenges it faces, thereby safeguarding worker health and safety and maintaining industry resilience.

RECOMMENDATIONS

The ACTU recommends that, at minimum, the following steps be taken to ensure PCBUs meet their WHS obligations:

16. SWA should work with state and territory governments, along with relevant unions, to develop industry-based compliance codes, with chaptered subsections for each of the hazards described above.