

Achieving net zero greenhouse gas (GHG) emissions in Australian Public Service (APS) workplaces



COMMUNITY AND PUBLIC SECTOR UNION

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Policy Principles

- The government as a model employer can set the standard for best practice in net zero operational emissions
- Achieving net zero emissions relies on four pillars of decarbonisation¹:
 - Energy waste reduction, including through energy productivity and a shift away from energy-intensive products and services.
 - 100% renewable electricity.
 - Electrification and a shift away from fossil fuels to zero or near-zero emissions alternatives.
 - Non-energy emissions reductions and offsetting of residual emissions.
- Best practice net zero commitments must cover these principles²:
 - A long-term net zero commitment by or before 2050.
 - At least one medium term target that is appropriate and ambitious.
 - Addressing operational, value chain, customer and financed emissions.
 - Demonstrable, tangible near-term actions.
- Net zero prioritises reducing overall GHG emissions. The use of carbon offsets should be in line with a genuine commitment to reduce overall emissions to the lowest level possible while only offsetting unavoidable residual emissions.
- The response should be ambitious, urgent and should ensure that reducing emissions is embedded in all operations, decisions and relevant policies.
- The principle of justice for First Nations must also underpin and be central to action by the Commonwealth on climate change. It requires genuine participation of Aboriginal and Torres Strait Island peoples in decisions and working with their communities for the deep, systemic change needed.
- The Commonwealth Government can set targets and drive changes as a major procurer of goods and services, setting the standard for the goods and services purchases and operational actions, creating incentives for early demand and encouraging the uptake of climate solutions.

1 ClimateWorks Australia, 'Figure 2.2: The four pillars of decarbonisation', Decarbonisation Futures: Solutions, actions and benchmarks for a net zero emissions Australia (2020)

2 ClimateWorks (2021), Net Zero Momentum Tracker, Corporate action for 1.5 degrees: best practice for Australian company net zero commitments, <https://www.climateworksaustralia.org/resource/corporate-action-for-1-5-degrees-best-practice-for-australian-company-net-zero-commitments/>

Rationale: why do we need to achieve net zero emissions in the APS?

Climate change is the pre-eminent policy challenge of our time. The IPCC Climate Report 2021 states that global warming is likely to reach 1.5 degrees Celsius above pre-industrial levels between 2030 and 2052 without immediate action. The report concludes that to keep global warming below 2 degrees, global emissions must reach net zero by 2050.

The Commonwealth can show leadership as an organisation by setting its own targets and driving changes as a major procurer of goods and services. It can demonstrate best practice standards of goods and services purchases and actions in its operations as a major employer.

ClimateWorks Australia's Decarbonisation Futures³ report concluded that rapid technological progress in recent years means that achieving net zero by 2050 is achievable in all sectors of the economy using existing technology. The report details emissions-reduction solutions that can be readily deployed across all sectors including electricity, buildings, transport, industry and agriculture and land, many of which can be used to achieve emissions reductions in APS operations, such as:

- Switching to 100% renewable electricity.
- Upgrading existing buildings for energy efficiency, including electrification and maximising potential for buildings to produce electricity onsite.
- Optimising building usage.
- Switching to electric & fuel-cell vehicles for light road transport.
- Implementing circular economy principles through increased recycling and localised supply chains.

The report emphasises the necessity of seizing these opportunities and taking concerted, coordinated and collaborative action across all sectors of the economy, with an emphasis on government in particular creating demand through procurement, setting targets for operations and supply chains, and creating new models that accelerate the uptake of best-practice technologies.

3 ClimateWorks Australia, Decarbonisation Futures: Solutions, actions and benchmarks for a net zero emissions Australia (2020) <https://www.climateworksaustralia.org/resource/decarbonisation-futures-solutions-actions-and-benchmarks-for-a-net-zero-emissions-australia/>

Net zero versus carbon neutral:

Net zero refers to the overall balance between greenhouse gases emitted and greenhouse gases removed from the atmosphere. We achieve net zero emissions by reducing GHG emissions and neutralising the impact of residual emissions.

Carbon neutral means that any carbon dioxide released into the atmosphere is balanced by an equivalent amount being removed, which can be achieved by buying carbon credits. A carbon neutral approach allows you to continue to produce carbon and emit GHG without necessarily reducing emissions.

While the terms 'net zero' and 'carbon neutral' are often used interchangeably, net zero requires a commitment to reduce the overall level of emissions while carbon neutrality does not. Reducing emissions to zero is not always realistic or achievable, but a net zero commitment that relies heavily on offsetting carbon will not be sustainable in the long term. Any commitment to net zero must ensure that the focus is on driving down overall emissions, with offsets only being used for residual emissions that are unavoidable.⁴



4 ClimateWorks (2021), Net Zero Momentum Tracker, Corporate action for 1.5 degrees: best practice for Australian company net zero commitments, <https://www.climateworksaustralia.org/resource/corporate-action-for-1-5-degrees-best-practice-for-australian-company-net-zero-commitments/>

Barriers to achieving net zero emissions in APS operations

- Annual operational emissions for the APS have not been publicly reported since 2013.⁵
- Current procurement policies are not strong enough on climate. The *Commonwealth Procurement Rules*⁶ (CPR) state that environment sustainability must be considered when assessing value for money, including energy efficiency and environmental impact. The CPR encourage the use of the *Sustainable Procurement Guide*⁷ (SPG) which was released this year. This is notable as a step in the right direction however both the CPR and the SPG are silent on net zero, and decisive action towards reducing emissions is not currently required when making procurement decisions.
- The scope of the work carried out by the APS is extremely varied and specific plans for emissions reductions will need to be tailored to individual agencies. A zero emissions target may not be achievable in some agencies, such as the Department of Defence.



5 Department of Resources, Energy and Tourism (2013), Energy Use in the Australian Government's Operations 2011-12, https://www.energy.gov.au/sites/default/files/energy-use-in-australian-govt-ops_2011-12-report-2013_0.pdf

6 Department of Finance (2020), Commonwealth Procurement Rules, Division 1, clause 4.5(e), <https://www.finance.gov.au/sites/default/files/2020-12/Commonwealth%20Procurement%20Rules%20-%202014%20December%202020.pdf>

7 Department of Agriculture, Water and the Environment (2021), Sustainable Procurement Guide- A practical guide for Commonwealth entities, <https://www.awe.gov.au/sites/default/files/documents/sustainable-procurement-guide.pdf>

A plan to achieve net zero greenhouse gas (GHG) emissions in the APS

CPSU RECOMMENDS THE FOLLOWING COMMITMENTS BE MADE:

- A commitment to achieve net zero emissions from Australian Public Service operations by 2030. This commitment should include at least one medium-term target for APS emissions reductions that is ambitious yet achievable.
- A commitment to establish and implement a pathway to net zero emissions that:
 - Does not just limit emissions reductions to everyday operations, but also addresses value chain, customer and financed emissions.
 - Requires public reporting of progress towards zero emissions targets on an annual basis that is transparent and provides clarity about the scope of emissions that are included and excluded, how reductions are being measured and against what baseline.
 - Requires all agencies to measure and report emissions annually and to develop and implement individual strategies to achieve net zero emissions measured against key performance indicators. CPSU members should be able to work within agencies to help create these strategies; it is important to give workers rights and buy-in.
 - Includes immediate, tangible action (such as improving energy efficiency, switching to renewable energy and electric and zero-emissions vehicles, setting up reporting systems and amending procurement policies to support emissions reductions).

ACTIONS TO BE TAKEN:

A pathway to net zero emissions should include:

1. Measuring Government emissions & energy use

- Implement compulsory emissions reporting for Government departments that:
 - Enables consistent monitoring and reporting of electricity, natural gas, water, fuel, emissions and cost⁸ (electricity usage data should also specify percentage of electricity from renewable sources).
 - Provides clarity about the scope of emissions that are included and excluded, how reductions are being measured and against what baseline.
 - Analyses the worst indicators and identifies where agencies are emitting the most.
 - Outlines any changes that should be considered when comparing emissions with previous years (such as changes in ownership of assets, quantity of services being delivered and machinery of government changes).
- Collate and publicly report whole of APS emissions, including:
 - Whole of APS emissions and energy use.
 - Measures undertaken as part of achieving a net zero target.
 - Agency-specific performance measured against key performance indicators.

2. Taking practical steps to reduce emissions

This may include:

Reducing Scope 1 direct emissions from APS operations under APS control; and Scope 2 indirect emissions from the generation of electricity, heating or cooling that is purchased and used by the APS (i.e emissions created during the production of the energy).

- Build on Labor's 2019 commitment to set a government electric vehicle target of 50 percent of new purchases and leases of passenger vehicles by 2025 and ensure all newly leased Government fleet vehicles will be zero emissions vehicles by 2030. This should also apply to Executive Vehicle Scheme policies that are managed individually by agencies.
- Require Property Management Plans conducted under the Commonwealth Property Management Framework⁹ to ensure all newly built or leased Government buildings and facilities are energy efficient to reduce energy waste, and all-electric using 100% renewable energy.
- Transition existing government-owned and leased buildings to all-electric, powered by solar, wind and other sources of zero-carbon electricity

⁸ ACT Government Enterprise Sustainability Platform

⁹ <https://www.finance.gov.au/government/property-construction/commonwealth-property-management-framework>

- Replace all space and water heating systems in Government facilities with electric systems at the end of their economic lives.
- Solar hot water.
- Optimise government-owned and leased buildings for energy efficiency and use government procurement to drive retrofitting where needed. This can include:
 - Upgrading the light fittings to LEDs.
 - Upgrading heating, ventilation and air conditioning equipment.
 - Insulation and draught-sealing.
 - Using natural ventilation and fresh air alternatives where possible.
 - Electrochromic windows.
 - Smart systems and lighting controls, or adjusting lighting and air conditioning settings according to a building's occupancy rate to reduce energy use.
 - Tracking building operations to monitor real-time consumption.
 - Efficient appliances.
- Co-locate staff in multi-agency regional job hubs to reduce energy use.
- Implementing sustainability measures, such as:
 - Ensuring green cleaning products and methods are used.
 - Banning single-use items such as coffee cups, plastic cups, plates and cutlery in office kitchens and replacing them with reusable items, where necessary.
 - Promoting a paperless culture.
 - Implementing a waste strategy that includes recycling and considers food composting where possible.
 - Using rechargeable batteries for smaller items such as fire alarms and remote controls.
 - Utilising staff-led environmental networks to involve workers in developing agency-specific plans to meet net zero target.

Reducing all other Scope 3 indirect emissions from APS activities, occurring from sources they do not own or control such as procurement, employee commuting, business travel, waste and water:

- Encourage use of green travel options for APS employees:
 - Encourage use of public transport by ensuring workplaces are in proximity to public transport options, allowing flexible start times and offering incentives such as yearly travel cards.
 - Encourage car-sharing by designating parking spaces for car-sharing vehicles only.
 - Encourage travel to work via bike by providing secure bike storage and end of trip facilities.

- Pursue Labor's 2019 commitment to require all Commonwealth owned-and-leased office buildings to include the provision of electric vehicle charging infrastructure where appropriate.
- Encourage staff to work from home to reduce travel and energy use.
- Offset business travel including air travel, fuel hire cars, fuel cards and remote working.
- Offset embodied carbon in manufacturing of procured goods, such as IT equipment.
- Redesign Government procurement policies to encourage the uptake of climate solutions. This could include:
 - The development of a new procurement-connected policy on net zero requiring Commonwealth entities to make procurement decisions that are in line with achieving the net zero emissions target. Such as:
 - » Procurement will only be from companies that are reducing emissions.
 - » Tenderers for government contracts should include carbon offsets.
 - » Least emissions should be a factor in decision-making.
 - » Prioritise procurement from locally owned SMEs in regional communities.
 - Amending existing Commonwealth policies to specifically refer to a net zero emissions target. For example, amending the *Code for the Tendering and Performance of Building Work (2016)* that sets out the expectations for all building industry participants seeking to be involved in Commonwealth funded building works to include an emissions reductions requirement.
- Amend cost-benefit analysis frameworks to incorporate the social cost of carbon, as has been done in the ACT. This a tool designed to calculate the cost of climate inaction and is defined as '*net monetary cost associated with the climate change impacts resulting from the emission of a tonne of carbon dioxide in a given year.*'¹⁰ A social cost of carbon at an interim price of \$20 per tonne of emissions was included in the 2021-22 ACT Budget; the commitment requires the ACT government to invest \$20 per tonne of emissions from government operations into measures to meet the zero emissions government target from 2020-21 rather than relying on offsets, and arrange for an independent body to develop a social cost of carbon for application from 2025¹¹.
- Adopt investment strategies for the Future Fund and Commonwealth superannuation funds that reduce exposure to risky carbon-intensive industries and actively leverages ownership via its funds to encourage companies to act on climate change.

10 ACT Climate Change Council (2021), 'What is the Social Cost of Carbon?', The Social Cost of Carbon and Implications for the ACT, p. 2, https://www.environment.act.gov.au/__data/assets/pdf_file/0004/1864894/the-social-cost-of-carbon-and-implications-for-the-act.pdf

11 Shane Rattenbury MLA (2021), 'Considering the 'social cost of carbon'', media release, https://www.cmtedd.act.gov.au/open_government/inform/act_government_media_releases/rattenbury/2021/considering-the-social-cost-of-carbon

Case studies on emissions reduction strategies

CASE STUDY 1: ACT ZERO EMISSIONS GOVERNMENT FRAMEWORK¹²

The ACT Government has achieved significant reductions in its operations since releasing the Carbon Neutral Government Framework in 2014. By the end of 2018 they were on track to achieve a 60% reduction in overall emissions by 2020 (compared to 2012-13 levels) and had achieved:

- Utility bill savings of approximately \$2 million per year.
- Demonstration of large-scale electric heating systems.
- Establishment of a Government zero emissions vehicle fleet.

The Carbon Neutral Government Framework (2014) has been replaced by the Zero Emissions Government Framework (2019), with an ambitious target to reduce emissions from government operations by more than 33% by 2025 (from 2020 levels) without the use of offsets.

Examples of actions being undertaken to achieve this target include:

- Ensuring all newly leased ACT government passenger fleet vehicles will be zero emissions vehicles from 2020-21 (where fit for purpose).
- Shifting to high efficiency, all-electric and climate-wise Government buildings and facilities.
- Considering the 'social cost of carbon' and climate change adaptation outcomes in all policies, budget decisions and procurement and capital works decisions. The ACT Government will not purchase carbon offsets to meet its targets and instead invest the social cost of emissions from Government operations from 2020 onwards in measures to further reduce emissions.
- Monitoring climate change projections and ensure infrastructure and services are resilient to climate change impacts.
- Reducing staff travel needs by co-locating staff in centralised offices, providing facilities for teleconferencing, exploring co-working hubs and supporting flexible work arrangements and explore incentives to support staff use of public transport and active travel.
- Implementing a user-friendly sustainable procurement approach for goods and services and capital works that ensures GHG and adaptation outcomes are considered in all procurement decisions.

¹² ACT Government, ACT Government leadership, ACT Climate Change Strategy 2019-25, https://www.environment.act.gov.au/__data/assets/pdf_file/0003/1414641/ACT-Climate-Change-Strategy-2019-2025.pdf/_recache



CASE STUDY 2: CSIRO'S SUSTAINABILITY AND NET ZERO EMISSIONS STRATEGIES¹³

The CSIRO aims to be a leader and exemplar of sustainable practices and has mapped out a path to achieve net zero emissions in their own operations by 2030, with the following aims:

- Net zero emissions by 2030 for Scope 1 and 2 emissions.
- Beyond net zero by 2050 for Scope 1, 2 and 3 emissions.
- Net zero emissions by 2025 for Scope 1 and 2 emissions at the Newcastle CSIRO site.

The following strategies are in place to achieve this:

- Establishing exemplar sites, such as Newcastle, where new technologies and emissions reduction strategies will be tested before implementing them across the organisation.
- More than halving CSIRO's electricity-related emissions through purchase of grid-fed renewable energy.
- Expanding on-site solar generation capacity. To date, the CSIRO has installed more than 5 megawatts of solar panels across 11 key sites which generate more than 6000 MWh of energy per year.
- Using CSIRO facilities as a testbed for emerging technologies such as hydrogen-based solutions.
- Transitioning to a low emission CSIRO vehicle fleet. To date, the CSIRO has introduced electric vehicles to national fleet along with charging infrastructure at major city locations.
- Reducing the overall property footprint and applying building energy efficiency measures.
- Electrification of plant and equipment.
- On-site tree plantings.
- Carbon offsets (if needed).

13 CSIRO, Towards a net zero emissions CSIRO, <https://www.csiro.au/en/about/strategy/sustainability>

CASE STUDY 3: WHOLE OF VICTORIAN GOVERNMENT EMISSIONS REDUCTION PLEDGE 2021-2025¹⁴

The Victorian Government has a goal of net-zero emissions by 2050 and sets five-yearly interim targets to achieve this. The actions 2021-2025 emissions reduction pledge will reduce annual government emissions by an estimated 2.7 Mt CO₂-e by 2025 (compared to 2018-19 levels.) It's important to note that these strategies are building on substantial action already taken by the Victorian Government; the Greener Government Buildings program facilitated \$280 million in energy efficiency and renewable energy projects between 2009 and 2020, saving \$39 million and 173,000 tonnes of CO₂-e per year and they achieved a 30% reduction in office-based emissions from Government departments in 2020 (from 2015 levels).

Practical actions in the current pledge to create a climate-neutral public sector include:

- Commitment for electricity used in government operations to be 100% renewable by 2025.
- Accelerating integration of zero emissions vehicles into the Government fleet with a short-term target of 400 zero emissions vehicles and supporting infrastructure by 2023.
- Improving the energy performance of government buildings through environmentally sustainable design of new buildings and public facilities and upgrading the energy efficiency of existing buildings:
 - All new Government office buildings and tenancy fit-outs will have a minimum 5-Star energy efficiency rating from 2021 and a 6-star rating from 2025.
 - Government leases will preference higher-rated buildings and those with a Green Lease Schedule.
 - The Government will invest \$60 million in the Greener Government Buildings program, on top of the \$280 million already invested since 2009.
 - Reducing reliance on natural gas usage.
- On-site renewable energy.

14 Victorian Government, Whole of Victorian Government emissions reduction pledge, <https://www.climatechange.vic.gov.au/victorian-government-action-on-climate-change/Whole-of-Victorian-Government-sector-pledge-accessible.pdf>

Cost

The total cost of transitioning to a net zero APS is not immediately quantifiable, however considering the externalities and increased costs associated with climate change it is essential to note that there will be a cost regardless of whether the APS acts.

The current Australian carbon credit unit (ACCU) spot price for October is at a record high of \$33.50 per tonne, an amount that has more than doubled over 2021.¹⁵

The absence of public reporting on Commonwealth government operational emissions means that we are not able to calculate the exact cost of current APS emissions, however Australian Government activities generated GHG emissions equivalent to 2.8 million tonnes of carbon dioxide in 2011-12¹⁶.

Based on these figures, it would cost approximately \$93.8 million a year to offset APS operations.

CASE STUDY: ACT ZERO EMISSIONS GOVERNMENT FUND

As part of their pathway to addressing the impacts of climate, the ACT Government established the Zero Emissions Government Fund (previously the Carbon Neutral Government Fund.) Projects supported by the Carbon Neutral Government Fund generated annual savings to Government of approximately \$2 million.

The Fund continues to provide interest free loans to government agencies to support approved emissions reduction projects. Agencies use energy bill or fuel savings to repay these loans, ensuring the Fund is continually replenished for new projects.¹⁷

15 RepuTex Energy (2021), Australian Carbon Offset Market Report: October 11-22'.

16 Department of Resources, Energy and Tourism (2013), Energy Use in the Australian Government's Operations 2011-12, https://www.energy.gov.au/sites/default/files/energy-use-in-australian-govt-ops_2011-12-report-2013_0.pdf

17 ACT Government, ACT Government leadership, ACT Climate Change Strategy 2019-25, https://www.environment.act.gov.au/__data/assets/pdf_file/0003/1414641/ACT-Climate-Change-Strategy-2019-2025.pdf/_recache