AUSTRALIAN LOCAL GOVERNMENT

Climate Review 2018



ICLEI Local Governments for Sustainability

beyond ZERO emissions

Ironbark Sustainability

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Beyond Zero Emissions is one of Australia's most respected climate change think tanks. We produce independent research demonstrating that zero emissions is achievable and affordable now.

Beyond Zero Emissions' work is carried out by a small staff of experts, the help of academic institutions and a large network of volunteer scientists, engineers and economists. We are funded by private foundations and concerned individuals.

You can be a part of Beyond Zero Emissions' audacious vision for a Zero Carbon Australia by making a donation to fund our research. Eighty-five per cent of our researchers are volunteers, making your donation go a long way.

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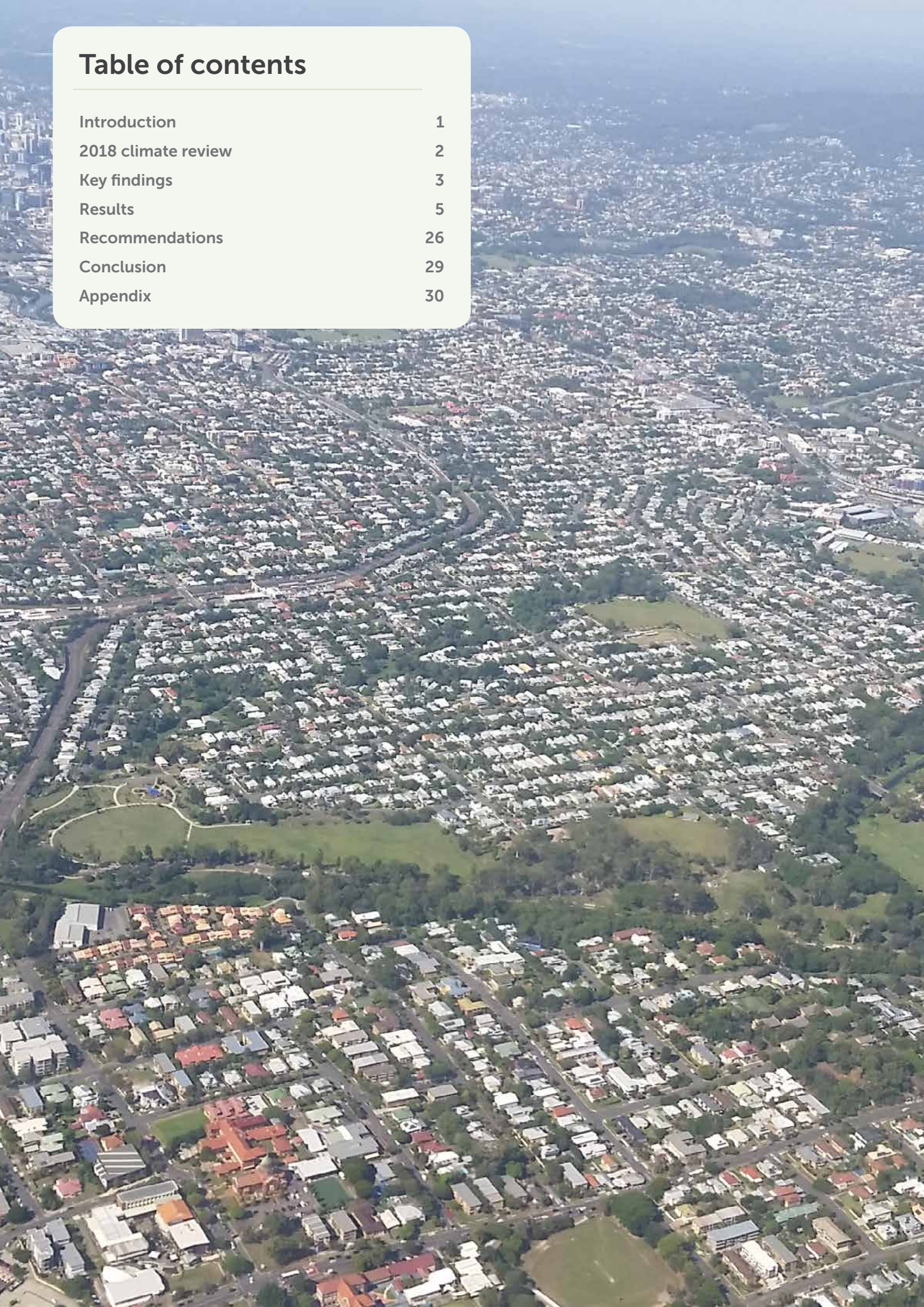
ICLEI - Local Governments for Sustainability is the leading global network of over 1,500 cities, towns and regions worldwide committed to building a sustainable future. In Australia ICLEI Oceania is the focal point for the Global Covenant of Mayors for Climate and Energy and initiates numerous other sustainability programs and networks.

Ironbark Sustainability (Ironbark) is a specialist local government consultancy that works with councils around Australia by assisting them to reduce energy and water usage through sustainable asset and data management and on-the-ground implementation. Over the last decade, Ironbark has worked with over 250 councils around Australia on energy efficiency, renewable energy, data management, emissions reporting, target development and broader climate change strategies and action plans to reduce emissions and improve sustainability outcomes for councils and their communities.

Ironbark is currently working with over 100 councils around Australia to develop community-wide greenhouse emissions profiles and science-derived emissions reduction targets. The concept of real action underpins everything we do. Ironbark is only interested in local government projects or programs that will result in real action on climate and real action on sustainability.

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Introduction

Globally, local governments and their communities are leading the way on climate action, aligning with the latest climate science and international agreements. Many are already working towards 100% renewable energy goals and zero emissions targets.

Nationally, Australia is struggling to develop effective policies to rapidly decarbonise the economy. Current initiatives are not achieving our obligations under the Paris Agreement. The policy environment over the past two decades has not resulted in effective emissions reduction and current data from the **Department of Energy and Environment** demonstrate an increase in emissions.

Despite current federal inaction, state and territory governments are stepping up to kick start the transition required. Governments of New South Wales, Victoria, Queensland, South Australia, Tasmania and the Australian Capital Territory have 2050 net zero emissions targets. The Victorian and ACT Governments have some of the first legislated emissions reduction targets in the world and Tasmania recently become the first jurisdiction in Australia to achieve zero net emissions.

Local governments also have a strong and proud history of leading climate action in Australia. However, few state policies provide support for local councils or communities to reduce emissions.

For over 20 years local government has been actively involved in climate action, most notably through ICLEI's Cities for Climate Protection (CCP) program. At its peak, the CCP program engaged over 240 local councils in developing local action plans with a focus on renewable energy, sustainable transport, waste management and efficient lighting.

Building upon this, 25 councils, reflecting 15% of Australia's population, have now joined the **Global Covenant of Mayors for Climate and Energy**, forming part of a 7,500 strong community of cities and towns internationally working to reduce emissions and to adapt to climate change.

Local government leadership is important and can drive state and national aspirations. Locals councils develop innovative solutions, opportunities and benefits and provide valuable lessons to inform state and national policy to cope with the climate and economic challenges of the future.

For this review, Beyond Zero Emissions, ICLEI, and Ironbark invited Australian council and community stakeholders to take part in a wide-ranging survey to better understand local government climate change targets, actions, strategies and policies.

This review provides a comprehensive assessment of actions councils are undertaking and the barriers and opportunities facing councils and their communities.



2018 Climate Review

This review helps to better understand the climate change actions and targets, policies and strategies of Australian councils and communities.

It includes key findings, results, state overview and case studies.

A series of recommendations for councils, local government groups and associations, and state, territory and federal governments are outlined as well as steps communities can take to drive and accelerate climate action in their local area.

Review process and previous surveys

In 2016, Beyond Zero Emissions reviewed 152 Australian councils and found 82% had emissions targets for their own operations and 18% had community emissions targets.

To gather more accurate information, Beyond Zero Emissions, ICLEI Oceania and Ironbark collaborated to create the most comprehensive local government and climate change survey in Australian history.

To track progress and change we intend to repeat this process every two years.

Glossary of terms

Corporate emissions - also known as council, internal or operational emissions

Community emissions - also known as municipal, community-wide or city-wide emissions

CoP - Conference of the Parties

Emissions - all greenhouse gas emissions

GPC - Global Protocol for Community-Scale Greenhouse Gas Emissions

Paris Agreement - The Paris Agreement aims to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5°C

UNFCCC - The United Nations Framework Convention on Climate Change

Review methodology

In July 2017 Beyond Zero Emissions recruited several volunteers to:

- conduct an audit of all Australian community groups active on climate change
- review all Australian council websites for reference to climate related activities.

An online survey, undertaken as part of the review, was also developed by Beyond Zero Emissions, ICLEI Oceania and Ironbark and reviewed by several council officers. The survey was promoted through various newsletters, organisations and industry contacts and responses were collected between 16 November 2017 - 19 January 2018.

The survey gathered data on councils and communities, including:

- demographics
- baseline emissions
- climate targets
- strategies and plans to reduce emissions
- actions and results
- monitoring, evaluation and broader engagement
- opportunities and barriers to reduce corporate and community emissions.

The survey questions are available for reference in the appendix of the report.

Key findings

National overview

- Australia's councils and communities are leading action on climate change
- Nationally, 50% of Australian councils provide public information on climate change
- 88% of the responding councils were unsatisfied with the Federal Government's approach to meet global targets.

Corporate emissions

- Nationally, 19% of Australian councils provide public corporate emissions targets
- 81% of the responding councils had or intended to have a corporate emissions target
- 72% of the responding councils had a corporate emissions baseline inventory
- A majority of the responding councils are confident in meeting corporate emissions targets.

Community emissions

- Nationally, 7% of Australian councils provide public targets to reduce community emissions
- 37% of the responding councils had or intended to have a community emissions target
- The most common barrier in setting community emissions targets was appropriate data and methods
- 25% of the responding councils had a community emissions inventory
- 50% of the responding councils were somewhat confident in meeting community emissions targets, while 25% were not at all confident
- Half of the responding councils used the Global Protocol for Community-Scale Greenhouse Gas Emissions (GPC) tool to develop their community emissions inventory
- Community emissions reduction targets and actions are not well resourced or monitored
- Strong community support can be harnessed to reduce council and community emissions.

Actions

- Almost all of the responding councils had corporate emissions reduction strategies and/or policies
- Common measures to reduce corporate emissions included energy audits of large facilities, installing solar PV and upgrading lighting in council facilities
- The most common and cost effective action was uptake of solar PV
- Community actions were focused on education, events or renewable energy access.

Budgets

- A lack of funding and resourcing are the most significant barriers to reducing emissions in both corporate and community efforts
- A large number of councils have no budget officially allocated to reduce emissions
- The scale of investment, related costs and emissions outcomes are not well understood
- Councils and communities need state and federal support to deliver effective strategies to reduce community emissions
- Emissions reduction budgets are correlated to overall population, the gross regional product, and the Socioeconomic Index for Areas.

Benefits

- Reducing emissions creates mutual benefits across the community and council
- Positive outcomes include cost savings, environmental benefits and increased profile
- Local action contributes to meeting the Paris Climate Agreement and prepares communities for a changing climate.


SUNPOWER
T0 TRACKER

Results

Desktop Review

A desktop review of council websites and community groups in each state and territory was conducted by Beyond Zero Emissions volunteers to assess climate change engagement and actions.

Climate change community groups

The review found 214 community groups across Australia identifying as active on climate change. This result reflects the considerable community interest to drive and enable local emissions reduction projects.

Communities tend to have strong support for actions that will reduce emissions. In Victoria, according to social research by Sustainability Victoria, **93% of the community support state government action on climate change and four out of five people are willing to take action on climate change**. Renewable energy is popular and proving increasingly cost effective. Business, industry and the community want to get on with the job and make the most of opportunities to secure food, water and energy supplies and build a new and robust economy.

Australian local government website review

All of the 537 Australian local government websites were reviewed to assess public information on climate change. More detailed results are presented in the **state analysis**.

Table 1: Positive findings in the Australian local government desktop climate review

Question	Total	%
Does the council website have information addressing climate change issues?	269	50
Does the council website present actions focusing on reducing or saving energy?	260	48
Does the council website present current strategies, actions and plans to reduce emissions?	226	42
Does the council website present current targets to reduce emissions for council operations?	102	19
Does the council website present current targets to reduce community emissions?	36	7

Many councils, while not specifically providing information on climate change, may include relevant content within overall strategic plans, corporate plans, risk and resilience actions, and elsewhere.

Survey data

The survey was intended to gather data relevant for governments and communities looking to reduce corporate and community emissions. Survey questions, response rates and more detailed analysis are provided later in the report. Low rates of response were received from some states and territories which may be relevant when assessing this information. Further information is provided in the state analysis section.

Council and community response

The online survey resulted in 114 completed responses. Ninety-eight council related organisations from all Australian states and territories (including the ACT government) completed the survey as well as 18 non-council entities.

More than half of the respondents identified as council officers while just over a third identified as team leaders and senior management. Almost half of the respondents had been working with their council for more than five years, while most of the remaining respondents had been at council between 1-5 years.

Emissions inventories

Corporate emissions

The majority of councils surveyed (72%) had a baseline inventory for corporate emissions, however almost a quarter (22%) did not, and 6% were unsure. Of those councils with an inventory for corporate emissions, a large majority (86%) responded that it was either very accurate, or fairly accurate, with many (84%) also reporting that the emissions inventory was reviewed regularly. A range of accounting methods, tools and registries were used by councils to develop inventories for corporate emissions; for example 28% used their own excel spreadsheet and 28% used **National Greenhouse and Energy Reporting** (Figure 1).

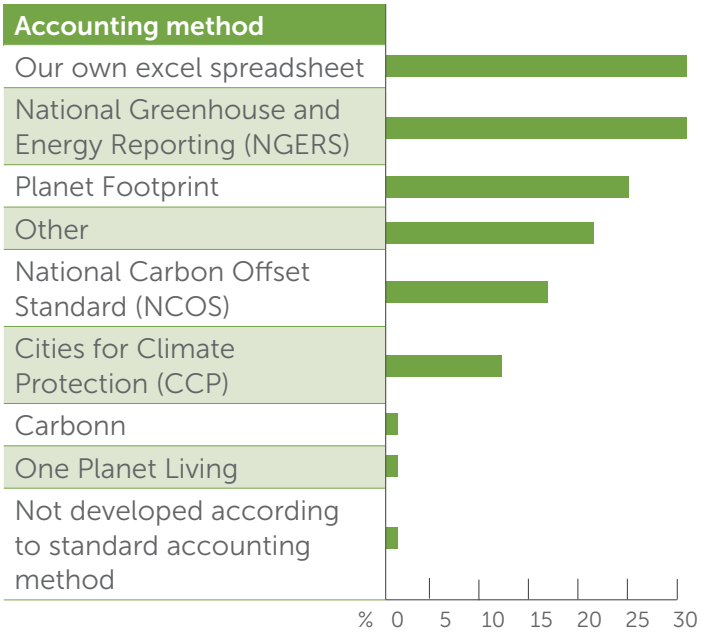


Figure 1: Tools used to create community emissions inventories

Community emissions

Unlike the baseline inventory for corporate emissions, most responding councils (69%) reported that their council did not have a baseline inventory of community emissions, while only a quarter (25%) did, and 6% were unsure. Of those councils with an inventory for community emissions, the majority (74%) reported that it was fairly accurate, and 60% stated that the emissions inventory was reviewed regularly. Half of the respondents used the **Global Protocol for Community-scale GHG emission Inventories (GPC)** to develop their community emissions inventory.

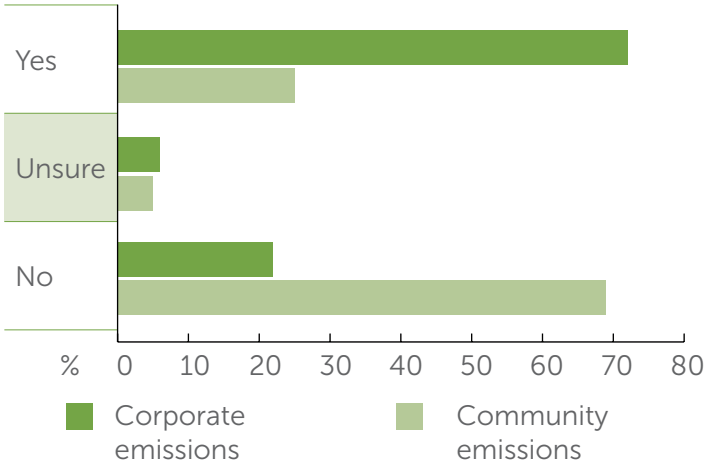


Figure 2: Councils with corporate and community baseline emissions inventories

Targets

Corporate emissions targets

A little over half of the responding councils (56%) had a corporate emissions reduction target, however 12% did not. A quarter of the respondents (25%) stated that they intended to have a target, while 7% were unsure if they had a target.

Table 2: Does council have (or intend to have) a emissions reduction target for corporate emissions?

	Responses	%
Yes, we have a target	50	56%
Yes, we intend to have a target	22	25%
No	11	12%
I don't know	6	7%

Typically, a council with a corporate emissions target was aiming for a 20-30% reduction in emissions by 2020, with an average base year of 2006. Different terms were used to describe the target (Table 3). Over half of the targets (56%) were introduced after 2010, while 36% had been introduced between 2000 and 2010. Some councils (18%) had an energy sector specific target, while others (18%) had a transport specific target to reduce corporate emissions. Waste and buildings were also listed as sectors with specific targets.

Most respondents (86%) were somewhat or very confident that their corporate emissions targets would be met.

The most common reported barrier in setting corporate targets was the difficulty in accessing accurate and timely greenhouse gas emissions data for council operations. Other common barriers included: internal politics, the financial cost of reducing emissions, the need for more services and infrastructure to keep pace with population growth, and the difficulty in controlling emissions from landfill.

Table 3: Terms used to describe corporate and community emissions targets

Term	Amount
Absolute Emissions Reduction	20
Zero Net Emissions	18
Carbon Neutral	10
100% Renewable Energy	8
Per Capita Target	5
Zero Emissions	2
Other	20

Community emissions targets

A small proportion of the responding councils (18%) had a community emissions reduction target, although a further 19% stated they intended to have one. Almost half (46%) did not have a target and 17% were unsure if they had a target (Table 4).

Table 4: Does council have (or intend to have) a community emissions reduction target?

	Responses	%
Yes, we have a target	16	18%
Yes, we intend to have a target	17	19%
No	40	46%
I don't know	15	17%

Seventy councils have signed up to the Cities Power Partnership, a national program run by the Climate Council to celebrate and accelerate the emission reduction and clean energy successes of Australian towns and cities. The program shares council climate actions and has a strong media component to help to engage and mobilise a broad section of the community.

Zero Carbon Communities is an initiative of Beyond Zero Emissions that encourages communities to put our Zero Carbon Australia research into action. We provide resources and tools to help communities and councils reduce community emissions.

Typically, a council with a community emissions target was aiming for carbon neutrality in the 2020-2030 period, with an average base year of 2006. Of the councils with community emissions targets, more than half set 100% reduction targets. Most of the community targets (62%) were introduced between 2001 and 2015, while over a third had been introduced between 2016 and 2017. Most of the targets were not sector specific.

Half of respondents were somewhat confident that council would meet its community emission reduction target, while a quarter were not at all confident.

The most common reported barrier in setting community targets was the difficulty in accessing appropriate methods to accurately record and measure community greenhouse gas emissions data. Other common barriers included: the lack of direct control, poor leadership from the Federal Government, and limited funding.

Over 7,500 councils worldwide have joined the Global Covenant of Mayors reporting on community emissions targets through comprehensive climate action plans. These community based actions directly contribute to limiting global warming in line with the Paris Agreement.

Climate strategies and plans

Corporate emissions

A majority of the responding councils (64%) had corporate emissions reduction strategies, plans and/or policies in place, while 29% reported that they intended to have such initiatives in place.

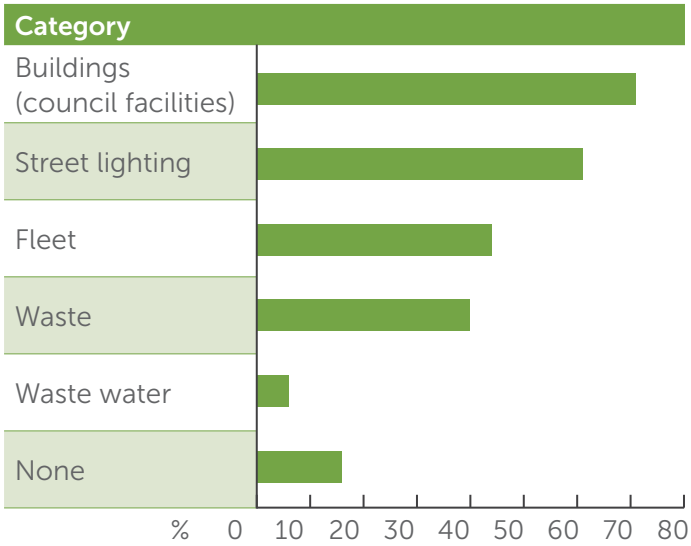


Figure 3: Areas with effective strategies to reduce emissions

Measures that had already been implemented to reduce corporate emissions included energy audits of large facilities (92%), installing solar PV on council facilities (97%) and upgrading lighting in council facilities (93%). Less popular actions included incorporating emissions-reduction Key Performance Indicators into senior position descriptions, efficient driving programs for staff and purchasing offsets.

Funding was ranked as the most important barrier to reducing emissions, followed closely by internal resourcing. Senior management support and political support received very similar scores (Figure 4).

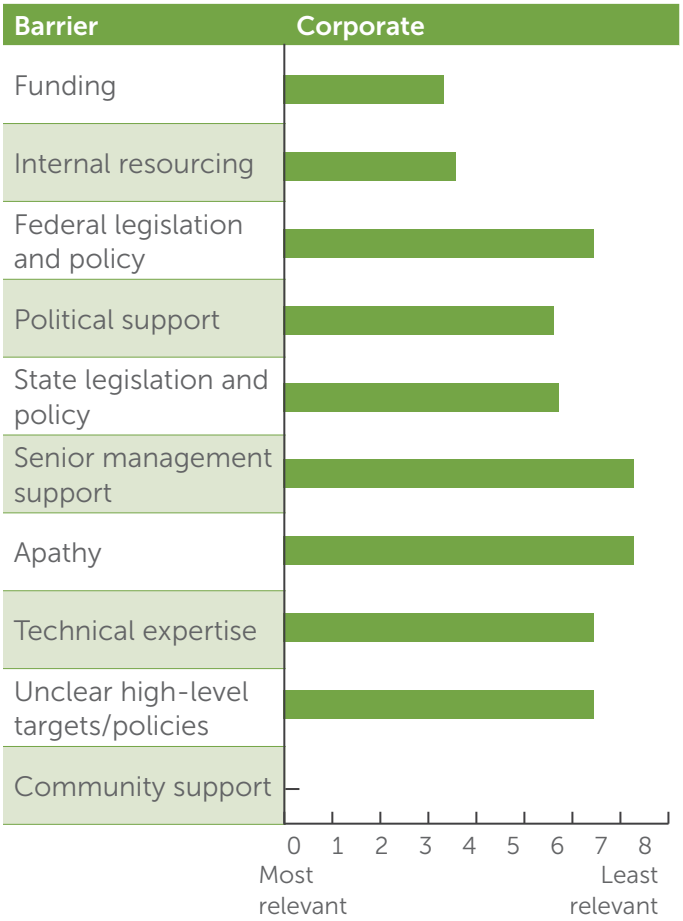


Figure 4: Key barriers to reducing corporate emissions

97%
Install solar PV on council facilities

93%
Upgrade lighting in council facilities

92%
Energy audits of large facilities

89%
Improve or upgrade heating, ventilation and air conditioning in council facilities

86%
Changeover residential street lights to LED

81%
Strict sustainability criteria into planning processes

79%
Undertake energy audits of small facilities

85%
Building retrofits (energy efficiency) for large facilities

73%
Building retrofits (energy efficiency) for small facilities

73%
Divert organic waste from council facilities

78%
Undertake staff behaviour change on energy efficiency

70%
Changeover major road street lights to LED

64%
Purchase bikes for council staff

63%
Switch to electric or hybrid vehicles

63%
Introduce composting and food waste minimisation at council facilities

37%
Purchase greenpower

34%
Undertake staff efficient driving programs

31%
Purchase offsets

13%
Incorporate emissions-reductions KPIs into senior position descriptions

% = Proportion doing or planning actions

Figure 5: Measures implemented by council to reduce corporate emissions

Community emissions

A small proportion of the responding councils (22%) had community emissions reductions strategies, plans and/or policies in place. A third of the respondents did not have such initiatives in place, however 28% reported that they intended to.

Measures already implemented by responding councils to reduce community emissions included: installing bike paths (89%), hosting community climate events (71%), and implementing urban forest strategies (77%). Less common strategies included: supporting industrial ecology projects, providing rebates for residential or commercial solar, and developing skills of local building trades.

Lack of community support was not considered a barrier to reducing community emissions.

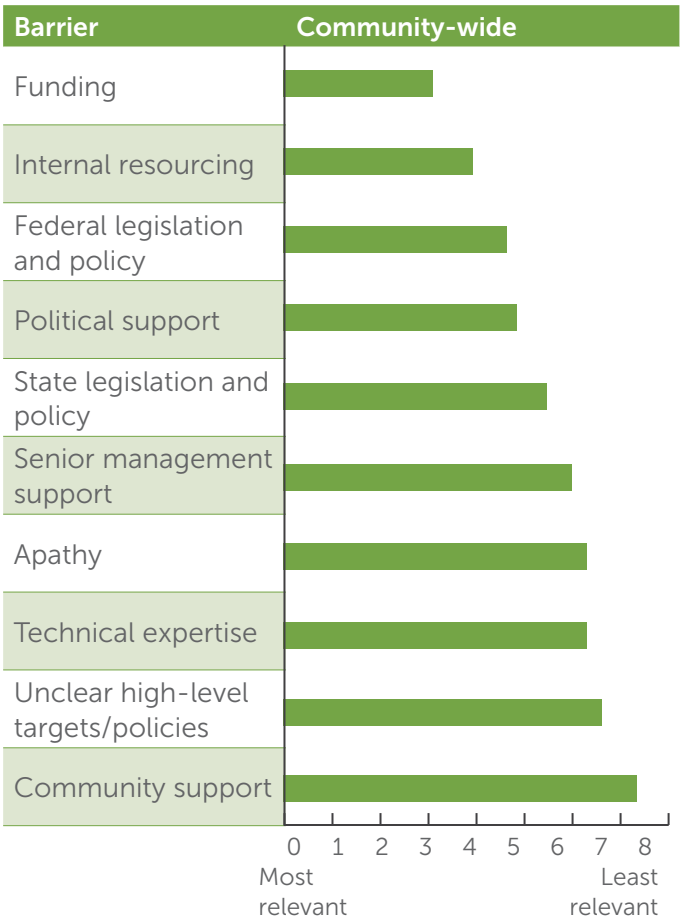


Figure 6: Barriers to reducing community emissions

Summary

Strategies to reduce emissions are beneficial for corporate operations, with a large majority of responding councils stating that they are implementing or intending to implement such initiatives.

Efforts to reduce emissions from community emissions are less prominent, as they require coordination with external bodies and are dependent on community behaviour. Lack of community support was not noted as a factor.

The most significant barriers to implementation of such strategies were, in both council and community efforts, funding and internal resourcing.

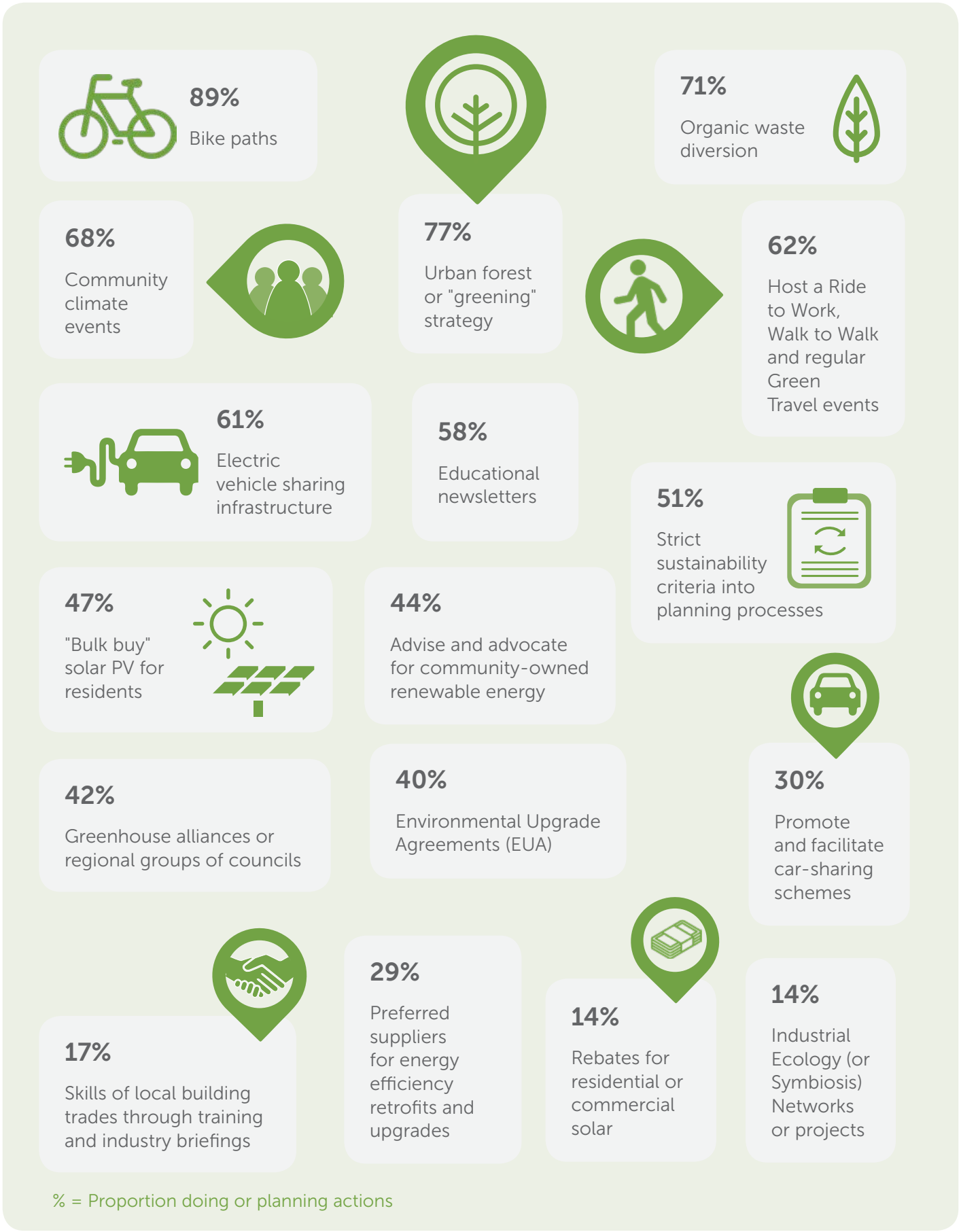


Figure 7: Measures implemented by council to reduce community emissions



Case Study - Flying High: Bundaberg Airport Energy Improvements

The area of Bundaberg Regional Council, nearly 400 km north of Brisbane, has one of the highest concentrations of residential rooftop solar uptake in Australia. Taking solar further than residential photovoltaic, Council has undertaken significant work at the Bundaberg Airport to achieve energy efficiency and cost savings. This includes optimisation of the airport's building management system, which controls the four main air conditioning units; installation of timers and sensors to control lighting and fans; transitioning metal halide lighting to LED; and a solar array. Year over year since 2015 as a baseline, Council has achieved 15% reduction in electricity costs from the improvements.





Case Study - Energy for the People: 100% Renewable Newstead

Renewable Newstead is working to supply the small community of Newstead in central Victoria with 100% renewable energy. The project started in 2008 and over the past decade community members have worked tirelessly to run their town with 100% locally generated, grid-connected, reliable, affordable renewable energy that also generates other benefits for their community. In early 2018, the town announced a groundbreaking deal on network charges that could pave the way for similar projects around the country. Negotiating new network charges with the town's electricity distributor, Powercor, will remove some of the hurdles of building a small solar farm and sharing the output with the community. The two-year trial on new network fees will mean that the community can install solar PV and share the output without being hit by further network charges for each kilowatt they consume.



Case Study - Mount Gambier Aquatic Centre Biomass Boiler

The installation of a new biomass boiler at the Mount Gambier Aquatic Centre has made the City of Mount Gambier the first council in Australia to install a biomass boiler for pool heating. Constructed in the 1980s, the centre has three pools, including an Olympic sized pool. When the old boiler needed replacing after 30 years of service a new 650 kW Binder Boiler was installed to meet the facility's – and community's – needs. When comparing the biomass system to the most likely alternative – a straight gas boiler – the payback period is around 4 years and if natural gas prices keep skyrocketing as predicted, then this period becomes even shorter. The biomass boiler saves approximately 58 tonnes of emissions per year and due to the efficiency of the boiler, and the low moisture content of the locally sourced wood chip, no smoke is produced, and only negligible particulates. In April 2014, the Mount Gambier Aquatic Centre Biomass Boiler was awarded the 2014 South Australian Aquatic Innovation Award.

Actions

Corporate actions

One third of councils responded that they had at least one emissions reduction project in place. The majority were focused on the use and generation of renewable energy, primarily installing solar panels on council buildings, LED light upgrades along roads and in council buildings, energy efficiency measures and geothermal or wind power. The costs provided by the councils for these projects ranged between $0 and $3 million.

Case Study - Roaring in the Regions: Local Government Energy Saver Program



The Local Government Energy Saver Program provides a simple model to help rural and regional Victorian councils reduce energy consumption and emissions by measuring and planning for emissions reduction projects. Run by Sustainability Victoria, the program supports councils who are implementing projects including replacing passenger cars to electric vehicles, installing solar PV across council facilities and reducing organic waste in landfill. The program also highlights great existing work in the regions, such as the Tallangatta Integrated Community Centre in Towong Shire on the border with NSW, that includes a modern library, expanded children's services and a community activity space. Most importantly, this centre will be incorporating solar PV plus battery storage, solar hot water and best-practice ecologically sustainable design.

Community actions

One quarter of the responding councils reported that they had a community emissions reduction project in place. Community actions were primarily concerned with education, such as providing information, enabling residents and businesses to buy or generate renewable energy, organising community events, and establishing behaviour change programs. Preferred provider lists, bulk buy schemes, as well as discounts and subsidies for solar installation were used as incentives to generate uptake. The costs of such actions, as reported by the councils, ranged between $0 and $1.9 million.

Half of the community-based projects do not have a calculated or estimated emissions abatement strategy.

Case Study - The Sunshine Coast Behemoth: 15MW Sunshine Coast Solar Farm

In July 2017, Sunshine Coast Council flicked on the switch to become Australia's first local government to offset its entire electricity consumption across all its facilities and operations from renewable energy generated at the 15MW Sunshine Coast Solar Farm.

This includes administration buildings, aquatic centres, community and performance venues, as well as holiday parks, libraries, art galleries and sporting facilities.

The Solar Farm will provide $22 million in savings, after costs, over a 30-year period based on today's electricity costs, which are anticipated to increase substantially in the future.

Council is striving to become Australia's most sustainable region and the Sunshine Coast Solar Farm is part of its plan to achieve that vision. The solar farm is accredited under the Large-scale Renewable Energy Target administered by the Clean Energy Regulator.





Case Study - Light Years Ahead: Western Sydney LED Street Lighting

The LED revolution is in full force in Australia with over 100 Australian councils having now completed a changeover to LEDs, making Australia an international leader, outshining most of Europe, South-East Asia and North America in LED take-up. As the largest LED street lighting replacement project in NSW, Light Years Ahead is the gold-standard approach in the state with nine local councils coming together to replace almost 15,000 energy guzzling street lights with efficient LED technology. This has rewarded councils with savings of $20 million and 91,000 tonnes of greenhouse gas emissions over 20 years.

In 2017, the project won a NSW Green Globe Award and with such clear benefits for both communities and the environment, Western Sydney Regional Organisation of Councils are keen to build on the success by offering a second round of the program. The updated 2018 Light Years Ahead Energy Efficiency Initiative has been expanded to include a broad range of energy-saving upgrades such as street lighting, solar panels, battery storage, HVAC systems and more. It is open to councils outside Western Sydney for the first time and welcomes any council who wants to get involved – the more councils participating, the better the savings for everyone.

Satisfaction with state and federal approach

More than half of the respondents (54%) were satisfied with their State Government's approach to meet state or global targets. However, only 3% are somewhat satisfied with the Federal Government's approach to meet global targets, with 88% somewhat, or very, unsatisfied.

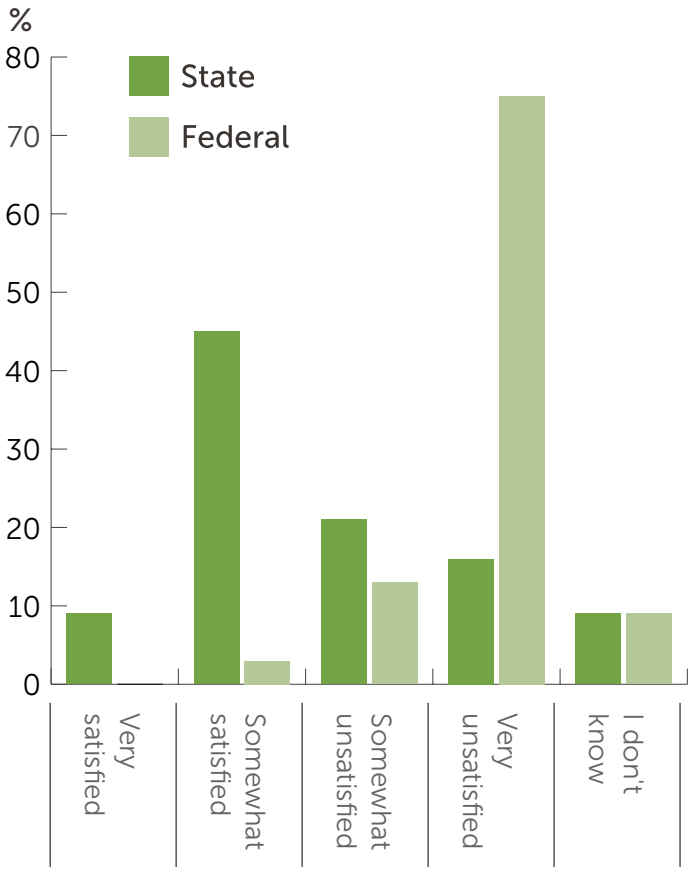


Figure 8: Satisfaction with state and federal government emissions reduction targets

Monitoring and evaluation

A majority of councils reported that they monitor and evaluate corporate emissions reduction initiatives. Of these councils, 30% continually monitored and evaluated throughout a project, while 31% only did so at the end of a project. Almost a third (32%), however, responded that they did not monitor or evaluate at all.

Of those councils that did monitor and evaluate throughout a project, 74% responded that they modified delivery throughout a project, while 22% stated that they waited for post-project evaluation.

A large proportion (47%) of the same respondents reported that such efforts were adequate, or more than adequate, for the delivery of emissions reduction projects. However, 41% stated that they did not think it was sufficient.

The majority of responding councils (70%) reported that they did not monitor and evaluate throughout a community emissions reduction project at all. Only 3% of respondents stated that they monitored and evaluated throughout a project, and 9% responded that they did so at the end of a project.

Improved monitoring and evaluation will help councils to assess the efficacy of their programs. Funding and process to demonstrate effective evaluation is likely required.

Climate adaptation

More than half of the responding councils (53%) had plans or strategies to guide climate change adaptation, while 31% intended to have such plans or strategies. However, only a quarter of councils had an approved budget for the development of an adaptation plan. Most of the adaptation plans (61%) were linked to either a state, regional or international processes, although 32% were not. Less than half (40%) of the adaptation plans were linked to climate mitigation or a greenhouse gas reduction plan or strategy.

Most of the councils with plans (71%) have implemented climate change adaptation initiatives including coastal protection, urban design, flood management, agriculture and solar energy.

Engagement and partners

Almost all of the respondents (98%) thought the community should be very engaged in developing and implementing a climate plan. Most of the responding councils (70%) have worked in partnership with local community organisations in relevant fields. Over half of the respondents (53%) worked with a state local government association, 33% worked with a Greenhouse Alliance or equivalent regional alliance, 32% worked with Ironbark, 30% worked with ICLEI, and 28% worked with the Global Covenant of Mayors.

About a quarter of the responding councils (26%) had, or intended to have, a fossil fuel divestment commitment.

Budgets to reduce emissions

For more information see the state budget breakdown later in the report.

Cost effective actions

The results of the survey show that the vast majority (54%) of emission reduction initiatives are solar PV. The estimated effectiveness of actions clusters around $67/t CO2e (initial capital spend). For a number of these projects council is a direct recipient of benefits and utility cost reductions, leading to significant operational savings, which are not always represented.

Much more detail is provided for council-focused activities than community activities. This is understandable as costs and benefits are more likely to be realised and accessible by councils themselves.

Caveats on analysis

Most of the figures provided by councils are projected, meaning they do not necessarily reflect the expenditure actually incurred or resulting emissions reductions. There is also little to no consensus on how to accommodate business as usual trending over measured outcomes, meaning that how this quantification should be interpreted is unclear.

Understanding the scale of emissons reduction, and the outcomes of that investment, is still not well understood in Australia. Overall there is limited evaluation of programs, and poor transparency of analysis, that makes it difficult for councils to learn lessons from each other and to best identify appropriate areas for attention and investment.

Council budgets

Analysis of total expenditure on sustainability and emissions mitigation provided shows that specific characteristics drive investment levels.

Annual budgets under $100,000 show no significant association with any council characteristics. This is likely due to the relative discretionary nature of budgets of this size, and that they do not need extensive wrangling through the budget process to secure.

Budgets over $100,000 were correlated to specific characteristics of a municipality including: overall population, the gross regional product, and the Socioeconomic Index for Areas. These factors should be considered in determining feasible council budgets and demonstrate a key area of support that state and federal governments can provide.

Council budgets to reduce emissions from corporate operations varied from no specific budget, to one council with up to $6 million and another with a $10 million loan. Responses were mostly in the $100,000 to $1 million range and included spending on energy efficiency and development of sustainability plans. Many stated that an actual budget and/or spending was difficult to estimate.

Council budgets to reduce community emissions in 2016-2017 also varied greatly. Some reported having no specific budget, or that the budget was unknown. One council reported having a budget of $750,000. Budgets were mostly in the $10,000 to $300,000 range and were mostly (where specified) allocated to develop sustainability strategies or community education and engagement efforts.

The large differences in budget may also demonstrate a lack of distinction between corporate and community efforts. In several instances, the same budget was provided suggesting that council and community initiatives were double counted.

State and territory policy overview

The information below provides an overview of current policies in each state and territory noting that most governments have net zero emissions 2050 targets.

Current state emissions targets

Table 5: Overview of state and territory emissions targets, strategies and plans

States and territories	Target	Interim target	Policy	Key plans
ACT	• Net zero emissions by 2050 • 100% renewable energy by 2020	• 40% reduction in emissions on 1990 levels by 2020	Climate Change Strategy and Action Plan	Climate Change and Greenhouse Gas Reduction Act 2010
VIC	• Net zero emissions by 2050 • 40% renewable energy by 2025	• 15-20% reduction in emissions on 2005 levels by 2020 • 25% renewable energy by 2020	Climate Change Act 2017	• Victorian Renewable Energy Target (VRET) • Victorian Energy Efficiency Target (VEET)
NSW	• Net zero emissions by 2050 • Does not have state-specific renewable energy target	• N/A	Climate Change Policy Framework	• Renewable Energy Action Plan • Draft Climate Change Fund Strategic Plan
WA	• Does not have state-specific emissions reduction target, or renewable energy target	• N/A	N/A	N/A
QLD	• Net zero emissions by 2050 • 50% renewable energy by 2030	• 30% reduction in emissions on 2005 levels by 2030	Climate Change Response	Climate Transition Strategy
SA	• Net zero emissions by 2050 • 50% renewable energy by 2025	• 33% renewable energy generation by 2020	Climate Change Strategy 2015-2050	Low Carbon Investment Plan
TAS	• Net zero emissions by 2050 • 100% renewable energy by 2022	• N/A	Climate Action Plan 2017-2021	Climate Action 21
NT	• Does not have state-specific emissions reduction target, • 50% renewable energy by 2030	• N/A	Northern Territory Climate Change Policy	Roadmap to Renewables



Australian Capital Territory

The ACT Government Climate Change and Greenhouse Gas Reduction Act, passed in 2010, enabled the ACT to become ranked first in the world for emissions reduction and third for renewable energy targets of any state or region reporting under the Carbon Disclosure Project. The Act also established peaking per person emissions in 2013. The ACT government is on track to secure 100 per cent renewable energy by 2020.



Victoria

The Victorian Government's current suite of policies and strategies to address climate change are legislated in the Climate Change Act 2017. The Act includes interim targets and strategies to be updated every five years, adaptation action plans, policy objectives and guiding principles, pledges and annual reporting.

New South Wales



The NSW Climate Change Policy Framework outlines the objectives of achieving net zero emissions by 2050 and enhancing the resilience of NSW to the challenges of a changing climate. The framework resulted in an advisory body, the Climate Change Council and Climate Change Fund to support energy management initiatives in NSW.

Western Australia



The WA Government has expressed an interest to contribute to the national renewable energy target of 20% renewable generation by 2020 by continuing to support investment in renewable energy. The government has not developed an emissions reduction target.



Queensland

In 2017, the Queensland Government released their Climate Transition Strategy to support net zero emissions by 2050. An interim target of 50% reduction of emissions by 2030 has been set (compared to the 2005 baseline). Some QLD energy infrastructure is state owned which brings opportunities such as the **Clean Co generator** development, but also revenue issues around decarbonising the grid. Transport and efficiency strategies are under development.



South Australia

The state goal is for net zero emissions by 2050, 50% renewables by 2025 and for Adelaide to be the world's first carbon neutral city. The Wetherill government supported economic opportunity and innovation through the Low Carbon Investment Plan aiming for $10 billion in investment. The new government policy position is not yet known.



Tasmania

Tasmania already gets 90% of its electricity supply from clean renewable sources. Climate Action 21 sets the Tasmanian Government's agenda for action on climate change through to 2021. **Tasmania recently become the first jurisdiction in Australia to achieve zero net emissions**, meeting their 2050 target over 30 years ahead of schedule.



Northern Territory

The NT Government has committed to adopt a target of 50% renewable energy by 2030 and published a **Roadmap to Renewables** report outlining the detail of this commitment in late 2017. An implementation plan is currently under development.

Federal approach

In November 2016, Australia ratified the Paris Agreement and the Doha Amendment to the Kyoto Protocol, reinforcing the commitment to action on climate change.

The Federal Government's climate change plan includes:

- Reducing emissions by 5 per cent below 2000 levels by 2020.
- Reducing emissions by 26 to 28 per cent below 2005 levels by 2030.
- Doubling Australia's renewable energy capacity by 2020
- Improving energy productivity by 40 per cent by 2030.

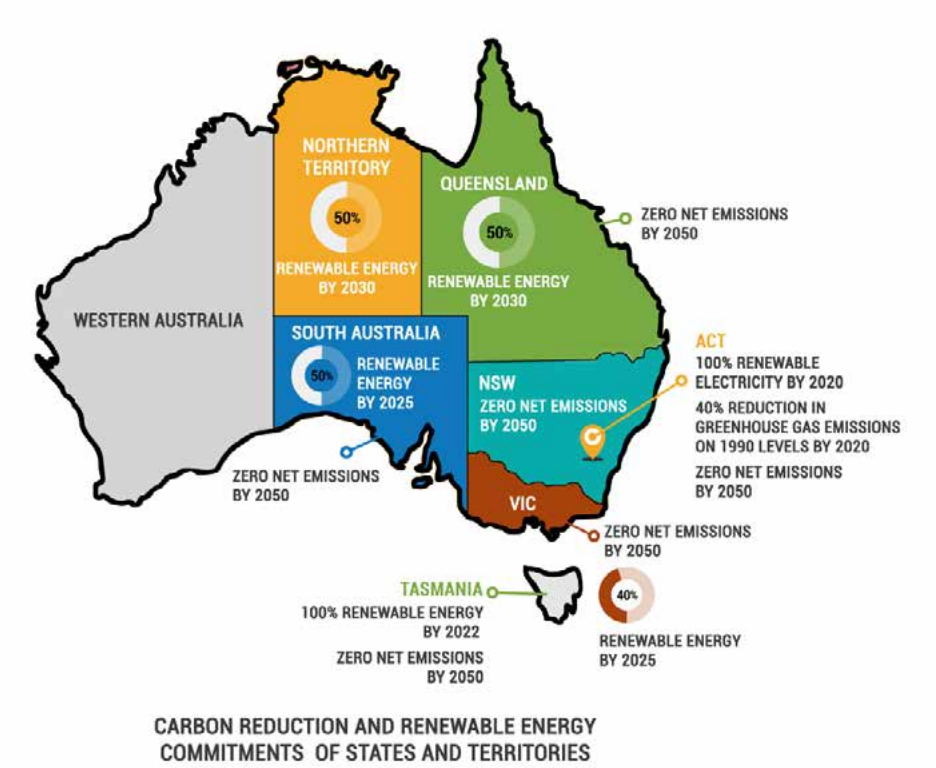


Figure 9: Carbon reduction and renewable energy commitments of states and territories. Reproduced with permission from 100% Renewables Pty Ltd

The UNFCCC Conference of the Parties (CoP) have identified local and regional government as legitimate players in meeting the Paris Agreement (CoP21) contributing to Nationally Determined Commitments. The CoP plans recognise that national, state and local government dialogue helps to demonstrate the value of local commitments and actions to meet or exceed national targets. Leadership from the Australian Government on this implementation course is yet to be articulated.

State analysis

This section presents a breakdown of survey results by state. The results may be relevant for state governments to consider, in particular, to enable policies and programs that support local governments to achieve emissions reductions at the corporate and community scale.

Desktop review

The desktop review of information provided by council websites is summarised in Figure 10. The national average is represented by the dark blue line.

Victorian councils are well above the national average in all responses. For example, 92% of Victorian council websites provide information addressing climate change issues compared to 25% and 12% of Tasmanian and Northern Territory councils respectively.

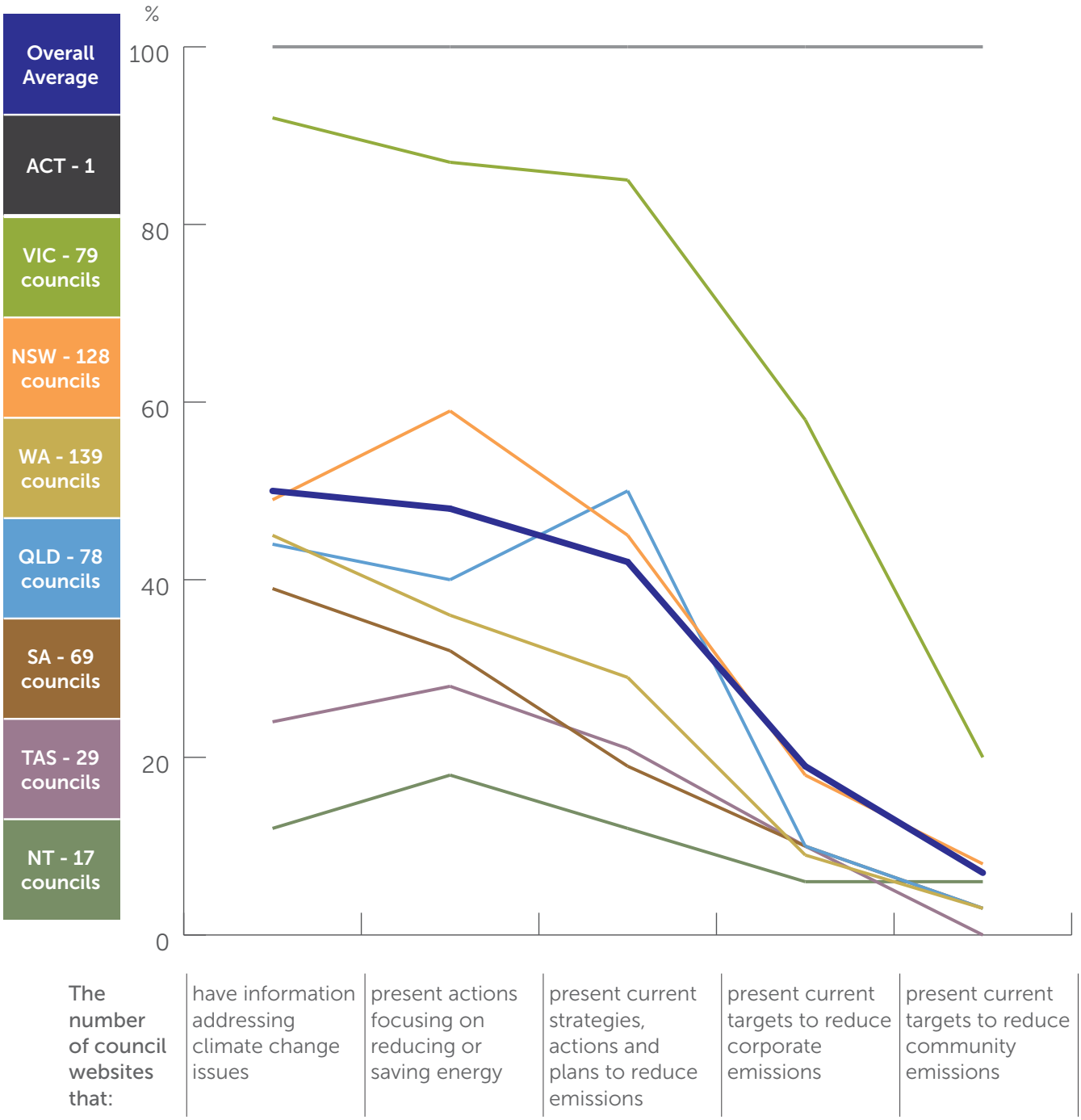


Figure 10: Council website climate change review

State response

The proportion of responses from each state are represented in Figure 11. The relatively low response rate from some states and territories should be noted in these findings.

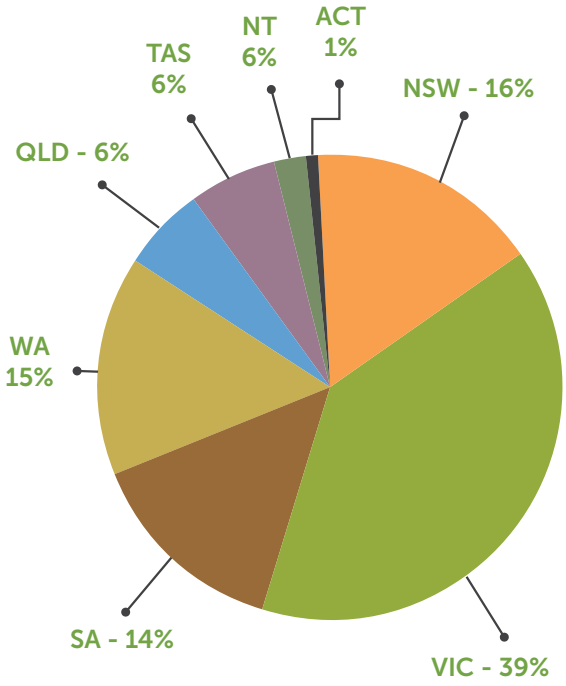


Figure 11: State participation in the online survey

Victorian councils are better represented in this survey than other states. This may be due to location of the organisations involved in the survey and also the Victorian Greenhouse Alliances, which have enabled significant engagement in the issue over the past decade. Further breakdown of state participation is in Figure 12, which shows the proportion of participants as well as state totals. For example 20% of Tasmanian councils participated in the survey, which represented 7% of total survey participants.

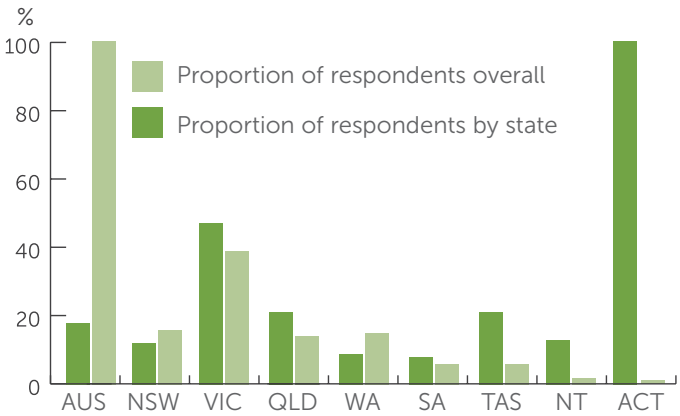


Figure 12: Representation from each state and territory in the survey

Corporate emissions

A significant proportion of councils within all states have corporate emissions targets. Note that Queensland data is skewed due to low response rates and also the large size or populations of QLD councils.

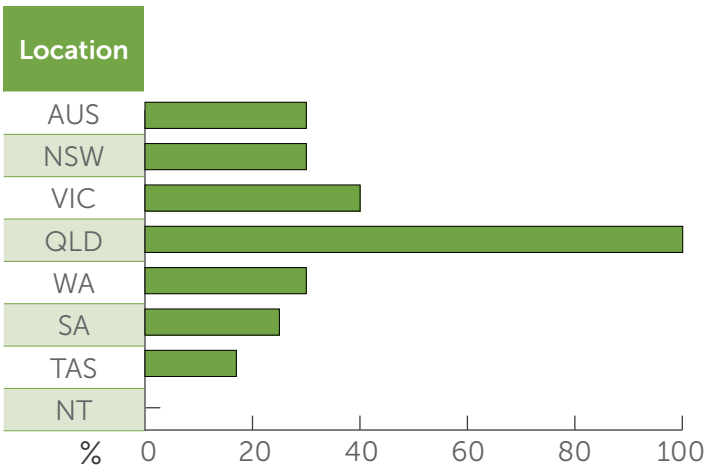


Figure 13: Proportion of respondents with corporate emissions targets

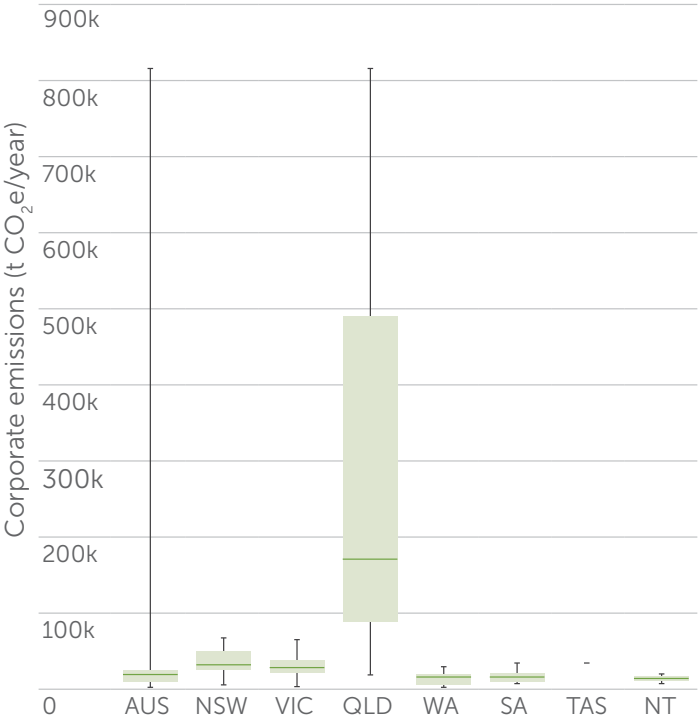


Figure 14: Distribution of corporate emissions

Community emissions

Most states have few councils with community emissions inventories. Councils that have prepared community emissions inventories are well positioned to be climate change leaders.

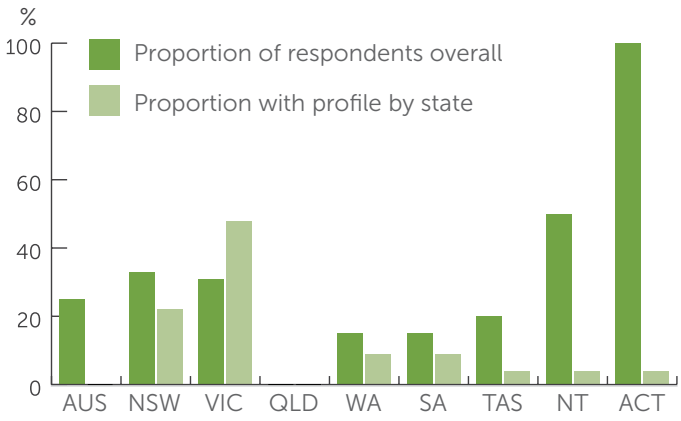


Figure 15: Proportion of respondents with community emissions inventories

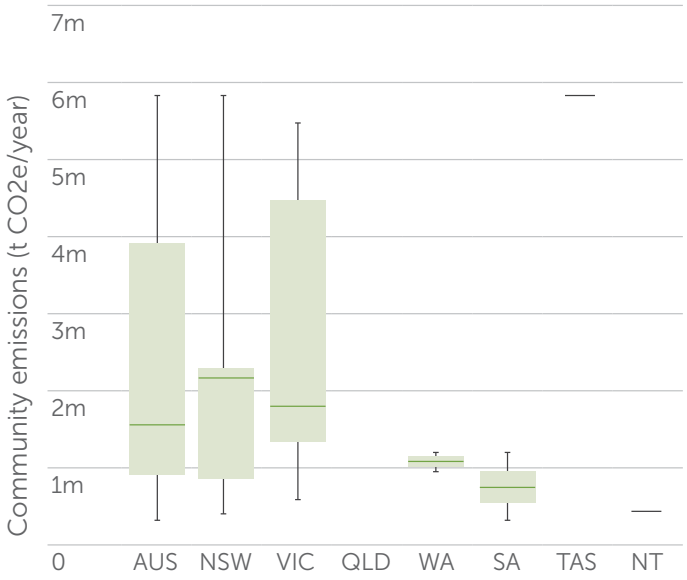


Figure 16. Distribution of community emissions

Table 6: Average reported corporate and community emissions inventories

Location	Corporate operations (tCO_2e)	Community emissions inventories (tCO_2e)
AUS	34,933	2,344,621
NSW	26,758	2,308,322
VIC	17,008	2,671,269
QLD	327,526	N/A
WA	11,769	1,073,848
SA	7,959	735,180
TAS	22,285	5,828,854
NT	9,536	357,008

Actions

Generally we see that the majority of councils across all states have, or intend to have, strategies in place specifically targeting reductions in corporate emissions, with exceptions for Tasmania and NT (although low response rates for this state territory impact these figures). This indicates that councils in all states are aware and interested in reducing emissions.

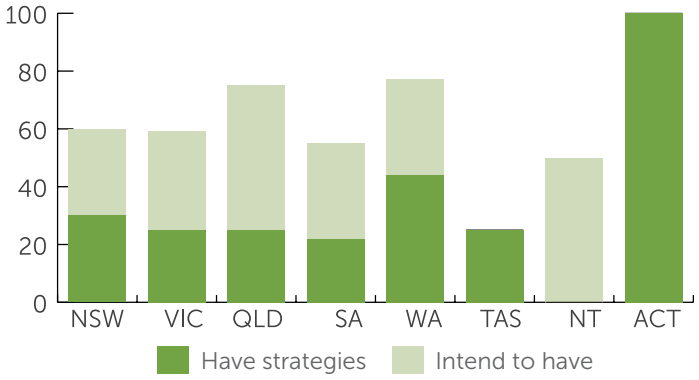


Figure 17: Councils with strategies and actions for reducing corporate emissions

Budgets

Other than NSW and VIC there were few respondents that provided information regarding council budget, resulting in the small range. As more councils develop inventories and targets we are hoping to see a more accurate distribution.

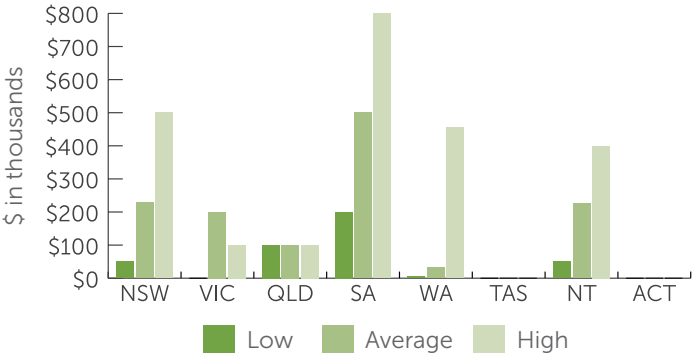


Figure 18: Council budgets on carbon reduction by state (non-capital cities)

The budget allocations by state indicates that most councils have limited (less than $200,000) budgets available to reduce emissions. South Australia has a larger average, but this is likely skewed due to the low response rate.

The broad spread that we see for most states is generally due to the large number of councils that have no budget officially allocated to carbon reduction. Most notably we see that investment in NSW is on par with Victoria for the median council, but we do not see large scale investment (>$1 million) outside of a capital city.

Table 7: 2016-17 Responses regarding council budget to reduce corporate emissions

State	Percentage of councils in state	Average	Total Amount
NSW	9%	$643,714	$4,506,000
VIC	30%	$334,696	$7,698,000
QLD	3%	$3,050,000	$6,100,000
WA	3%	$133,500	$534,000
SA	3%	$500,000	$1,000,000
TAS	14%	N/A	N/A
ACT	0%	N/A	N/A
NT	12%	$225,000	$450,000

Table 8: 2016-17 Responses regarding council budget to reduce community emissions

State	Percentage of councils in state	Average	Total Amount
NSW	10%	$421,001	$3,368,006
VIC	15%	$230,297	$4,375,650
QLD	1%	N/A	$50,000
WA	4%	$28,873	$193,556
SA	6%	$5,000	$30,000
TAS	14%	$11,833	N/A
ACT	0%	N/A	N/A
NT	0%	N/A	N/A

Recommendations

It is clear that local government has a role in reducing corporate emissions and there is a growing interest in reducing community emissions. State government with their own emissions reduction targets have already, or will need to, engage with local governments and the wider community to meet these goals. Internationally, the Australian Government has ratified the Paris Agreement and has established its nationally determined commitment although no national coherent approach is yet described to engage the community or local government in contributing to the urgency of meeting the Agreement.

All levels of government and the community need to be actively engaged in a well articulated, measurable and properly resourced response. Improvements that support community groups, councils and state governments who want to see rapid local progress to reduce emissions should become a priority.

Organisations like Beyond Zero Emissions, Ironbark and ICLEI are advancing local approaches to both engage the community and encourage local government to join initiatives that make a direct and measurable contribution to reducing global emissions and climate challenges.

Approaches that support the Paris Agreement will deliver local benefits and local emissions reductions.

Everyone can play their part. Based on the review findings the following recommendations are provided for community, councils, local government groups and associations and state, territory and federal government.

Community

- Gather groups interested in zero emissions to discuss goals for your community - initiate community conversations, attend workshops and join a committee
- Meet with council staff and councillors to share goals and identify common purpose
- Call for strong action to reduce emissions and set a community target
- Use the **Zero Carbon Community Guide** and register interest in support from **Beyond Zero Emissions**
- Request a **free community emissions profile summary**
- Ask your council to sign up to campaigns like the **Cities Power Partnership** and the **Global Covenant of Mayors for Climate and Energy**
- Ask your council to offer subsidised solar panels and batteries
- Start or join **local community energy projects**
- Show state and federal government representatives your vision for a zero carbon community and ask them to provide strong leadership to enable its development.

Council

- Start or continue to set ambitious targets to reduce corporate emissions
- Measure corporate and community emissions (using the **GPC standard**) to establish reliable inventories
- Set community targets in collaboration with local community groups
- Sign up to local, national and international action campaigns like **Zero Carbon Communities,** **Cities Power Partnership** and **The Global Covenant of Mayors for Climate and Energy**
- Work within ten year time-frames to increase accountability
- Include goals and actions in corporate and annual plans with respect to reducing corporate and community emissions, renewable energy, adaptation and monitoring and evaluation
- Map activities to demonstrate how they will limit warming to 2°C or lower
- Provide regular opportunities for community to participate in the development of climate actions, strategies and budgets
- Increase community engagement to ensure diverse representation of your region
- Improve monitoring and evaluation frameworks to assess effectiveness of actions and to better track progress
- Collaborate with regional alliances to leverage opportunities, efficiencies and economies of scale
- Replicate the **Victorian Regional Greenhouse Alliances** model
- Consider the range of procurement and investment options available
- Work with your state government on initiatives to contribute to ambitious emissions or renewable energy targets.

Local government groups and associations

- Provide appropriate data and methods for councils to set corporate and community emissions targets
- Support effective and consistent emissions monitoring and evaluation programs
- Support council and community based investment opportunities
- Influence private actors, business and industry to contribute to community targets
- Support and encourage councils to engage in state, national and international emissions reduction programs
- Use state based meetings and events to raise awareness and urgency around climate issues
- Support local government and community advocacy for state and federal policies that will enable targets to be met
- Encourage state and federal governments to support local councils and other organisations to contribute and to report on emission reduction and adaptation approaches
- Provide recognition and reward to leading councils and communities.

State and territory governments and agencies

- Legislate emissions reductions targets for maximum effect
- Support communities and councils to access annually updated corporate and community emissions inventories
- Improve building standard legislation and land use planning
- Increase certainty for investors to enable long-term emissions reduction investment
- Support programs to share technical expertise and resources between councils, community groups and industry
- Build 2°C or lower climate change actions into relevant *Local Government Acts*
- Support carbon budget reporting platforms for council and community
- Support and accelerate renewable energy targets.

Federal

- Provide leadership, policies and resources for councils to set and meet emissions reduction targets
- Report on the role of local government in contributing to the Paris Agreement through the UNFCCC facilitative dialogue and in annual national status reports to the UN CoP process
- Develop a bipartisan and nationally-coordinated energy policy to provide long-term strategy and investment certainty
- Set Renewable Energy Targets that limit warming to 2°C or lower
- Support community energy opportunities
- Support the development of a national Covenant for the Global Covenant of Mayors
- Develop nationally consistent energy and emissions reporting frameworks useful for local government and community
- Improve alignment between federal and state governments and coordination of funding for emissions reduction projects
- Grow investment in regions and local councils through the Clean Energy Finance Corporation, or establish a Community Emissions Reduction Finance Corporation
- Increase local investment for renewable energy infrastructure including large solar PV, battery storage and transmission linkages
- Take advantage of Australia's resources to become a renewable energy superpower
- Reduce emissions to ensure the high standard of living currently enjoyed by Australians is protected.

Conclusion

Many local councils are leaders in the necessity to reduce emissions and can help Australia meet our requirement under the Paris Agreement.

While many are leaders, others need support to tackle this challenge, particularly councils with limited resources and low socioeconomic indicators.

While councils are taking positive steps to set and meet corporate targets, few have community targets and few of these have resources to meet their targets.

Local councils, local government groups and associations and state and federal governments can all support the strong community desire to enable effective emissions reductions at the community level.

While state governments' climate policies are generally supported, the current federal government approach is very unpopular.

Greater resourcing is required at both the corporate and community level to achieve comprehensive emissions reductions.

Structure and support is available to set and meet corporate and community targets. Beyond Zero Emissions, ICLEI and Ironbark all offer expertise including the **Zero Carbon Communities Guide**, the **Global Covenant of Mayors for Climate and Energy** and council specific consultancy, including science-based targets and emissions inventories.

We look forward to seeing councils and communities progress in reducing emissions to maintain a safe climate for all.

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15	Serge Golikov

Survey questions

- Within which state or territory is your council located?
- Which of the following best describes your role at council?
- How long have you been at Council?
- Does your council have a baseline emissions inventory for corporate operations?
- What is the baseline inventory for corporate operations?
- Are you satisfied with council's emissions inventory for corporate operations?
- What accounting methods, tools or registries did council use in the development of this inventory?
- Does council regularly review the emissions inventory for corporate operations?
- Does council have a baseline profile of community emissions?
- What is the baseline value for community emissions?
- Are you satisfied with council's community emissions profile?
- What accounting methods, tools or registries did council use in the development of the community profile?
- Does council regularly review its profile for community emissions?
- Does council have (or intend to have) a target for emissions reduction for corporate operations?
- What is your target base year and target year for corporate operations?
- When was the emissions reduction target for corporate operations introduced?
- How do you define your target to reduce emissions for corporate operations?
- Is the emissions target for corporate operations sector specific?
- Which sectors have specific targets to reduce emissions for corporate operations?
- What are some of the key barriers you've found in setting targets for emissions for corporate operations?
- How confident are you that council will meet its emission reduction targets for corporate operations?
- Does council have (or intend to have) a target for community emissions reduction?
- What is the community emissions reduction target base year and target year?
- When was the community emissions reduction target introduced?
- How do you define your target to reduce community emissions?
- Is the emissions target to reduce community emissions sector specific?
- Which sectors have specific targets?
- How confident are you that council will meet its community-wide emission reduction target?
- In general, what are some of the key barriers you've found in setting communityvemissions targets?
- Does council have (or intend to have) strategies, plans and/or policies in place to reduce emissions from its own operations?
- How much budget did council have towards reduction emissions from corporate operations in 2016-2017?
- Does council have (or intend to have) strategies, plans and/or policies in place to reduce community emissions?
- How much budget did council have towards reduction emissions from corporate operations in 2016-2017?
- How much budget did council have towards community emissions reduction in 2016-2017?
- Have you implemented any of the following actions that councils can undertake to reduce emissions from corporate operations?
- What are some of the key barriers to reducing greenhouse gas emissions from corporate operations?
- Have you implemented any of the following actions that councils can undertake in the broader community to reduce emissions?
- What are some of the key barriers to reducing community emissions?
- Does council have strategies in place to monitor and evaluate actions to reduce emissions for corporate operations?
- Do you use these results to modify or improve project delivery during a project?
- Does council have strategies in place to monitor and evaluate community actions to reduce emissions?
- Do you think that council's M&E is adequate for delivery of your emissions reduction projects?
- Does your council have (or intend to have) a plan or strategy to guide climate change adaptation?
- Is there an approved budget for the development of an adaptation plan?
- Is the adaptation plan linked to any state, regional or international process?
- Is the adaptation plan linked to a climate mitigation plan or strategy?
- Has your council implemented any climate change adaptation initiatives?
- Does council have a divestment commitment?
- How satisfied are you with you State and Federal Government's approach to meet state or global targets?
- How engaged do you feel your community is in developing and implementing a climate plan?
- How engaged should the community be in developing and implementing a climate plan?