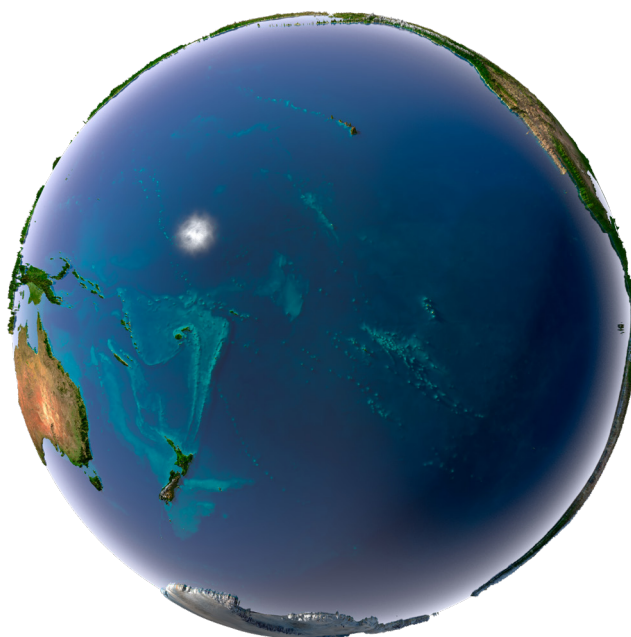


# Councils' climate change mitigation work

A stocktake of emissions reduction activities

September 2018



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# Foreword

## Foreword



Adapting to and mitigating the impacts of climate change is a priority focus for councils across New Zealand. This stocktake of mitigation work underway in councils across New Zealand highlights the contributions local government is already making to emissions reductions, and is underpinned by the sector's recognition that we can and must do more.

Kia ora koutou

Adapting to and mitigating the impacts of climate change is a priority focus for councils across New Zealand. That's why LGNZ is leading a flagship Climate Change project focused on both adaptation and mitigation. This Stocktake of councils' climate change mitigation work is one of our Climate Change project deliverables.

Local government acknowledges that it has a role to play in reducing emissions, along with central government and every other individual, community, sector and business in New Zealand.

The need for climate change mitigation is urgent. We need to reduce emissions now, in order to lessen the significant adaptation costs and challenges that councils and our communities are already dealing with.

Although New Zealand has for a long time lacked a coherent plan for transitioning to a net zero emissions economy, territorial and regional authorities have for a number of years now demonstrated commitment to reducing emissions in their organisations and communities. The introduction of the Zero Carbon Bill to Parliament later this year will mean it is even more critical that councils take steps to contribute to emissions reductions.

This stocktake of mitigation work underway in councils across New Zealand highlights the contributions local government is already making to emissions reductions, and is underpinned by the sector's recognition that we can and must do more. This stocktake is designed to support councils to do more. The range of actions and strategies outlined provide practical examples of things that councils could do to contribute to emissions reductions.

I implore all councils to take stock of their existing efforts on climate change mitigation, and to use this resource as the impetus to take even greater action. We all must do our bit to address climate change, and must demonstrate to our communities our commitment to ensuring that New Zealand achieves its climate change mitigation goals.

Ngā mihi nui

A handwritten signature in black ink, appearing to read 'Dave Cull'.

**Dave Cull**  
President  
LGNZ

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# Introduction

## Introduction

Local government acknowledges that as well as being at the frontline of adaptation, councils have a role to play in climate change mitigation. City, district and regional authorities are well-positioned to be leaders within their communities through taking steps to reduce their own emissions. Local authorities can also coordinate and support community efforts to reduce emissions.

In late 2018, the New Zealand Government will introduce its proposed Zero Carbon Bill to Parliament. This Bill will likely set an ambitious emissions reduction target for New Zealand. Notwithstanding that Bill, New Zealand has already committed to reducing greenhouse gas emissions by 11 percent below 1990 levels by 2030 under the Paris Agreement.

If New Zealand is to meet its emissions reduction targets, all levels of government, communities, industry and businesses need to do their bit.

Local government is already contributing to the reduction of emissions. That is demonstrated by the stocktake of actions and strategies underway in councils across the country to reduce emissions within their organisations and communities, which is set out in this document.

Despite councils' leadership on emissions reductions to date, the local government sector can and must do more. This stocktake is designed to provide councils with guidance on the additional things that they could do, in collaboration with their communities and other stakeholders, to contribute to the reduction of domestic emissions.

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## Emissions in New Zealand

In New Zealand, from 1990 – 2015, gross emissions have increased by 24 percent, with most of the emissions increase coming from transport and agricultural production. Net greenhouse gas emissions have risen 64 percent, because of increasing gross emissions and higher logging rates in production forests (ie deforestation).

While New Zealand's contribution to global greenhouse gas emissions is small (0.17 percent), it has the fifth-highest level of emissions per person of the 35 countries in the OECD.

New Zealand is already experiencing the impacts of past global emissions. The full extent of future climate change and the impacts of this on New Zealand's communities depends on the emissions trajectory that New Zealand gets locked into from this point forward.

## Councils' emission reduction activities – the current state of play

Councils across New Zealand have been demonstrating leadership on emissions reduction commitments and actions for some time. Councils are aware of the risks that climate change presents to infrastructure and community resilience, and so have been and are adopting strategies and actions to minimise those risks, in addition to adapting to them.

< Councils across New Zealand have been demonstrating leadership on emissions reduction commitments and actions for some time. >

In 2017, LGNZ undertook a survey to understand the range of actions and strategies that councils across the country have adopted to reduce emissions, both within their organisations and communities.

LGNZ received survey responses from 44 city, district and regional authorities. Those responses are summarised in Section 3 of this document.

The survey responses demonstrate the range of actions and strategies that have been adopted by councils. Some councils have focused on developing and implementing climate change action plans that require broad commitment to achieving an emissions reduction target through action across all facets of the organisation. Other councils have identified particular areas or functions where they can make changes to make targeted, but not insignificant, contributions to cutting down emissions. In many cases, emissions reductions are an indirect consequence of councils taking a more sustainable or environmentally friendly approach to the way that they do things.

Evidently councils recognise that there are a range of areas in which they can contribute to emissions reductions: via procurement decisions, by the way in which infrastructure is designed and operated, through land use planning, by engagement and collaboration with the community, through partnerships with external organisations, through internal decision-making processes, via policy decisions and frameworks or strategies designed to promote organisation-wide behavioural change, to name but a few.

## Why we've produced this stocktake

LGNZ has collated the information about what councils are doing to reduce emissions for a number of reasons:

- The information illustrates that councils are already doing their bit to contribute to emissions reductions. We want to highlight local government's leadership and show the progress that councils are making.
- We want to highlight local government's recognition, in response to community expectations, that it can and must do more to reduce emissions.
- A key issue for councils is how managed and affordable growth can occur without increasing risks to resilience from spiralling energy use and emissions. The case studies will provide useful insights into how councils are both thinking about and finding creative ways to address that challenge and reduce emissions.
- We want to provide councils with tangible examples of initiatives that they could adopt in their organisations and communities to reduce emissions. We want to provide councils with guidance on how they could partner with their communities and other stakeholders to deliver actions and strategies for reducing emissions.
- We want to make sure that the sector is prepared for the new requirements that the Zero Carbon Act will place on all New Zealanders to do their bit to contribute to emissions reductions.

## Key themes

Although the actions that councils are taking to reduce emissions differ by size of council and the resources that councils have available to them, the range of actions contained in the stocktake reveal a number of common themes:

### Realising co-benefits

Councils should maximise opportunities to reduce emissions and achieve other co-benefits. Emissions reduction actions and strategies can result in a range of additional benefits including reduced costs, reduced congestion, improved health outcomes, waste minimisation, improved amenity and creation of new jobs and skills.

### Long-term agenda

Achieving emissions reductions now will ensure long-term benefits for communities. Actions or strategies to reduce emissions should take a long-term view, and should result in long-lasting change. When making decisions, councils should adopt the option that will result in long-term benefits.

### Holistic and systems approaches

Councils should take a holistic approach to emissions reduction activities. This means thinking about how the goal of achieving emissions reductions can be embedded across councils' systems, functions and operations.

### Resilience is interwoven

When looking at options for emissions reductions, councils should also give thought to whether the action or strategy will enhance community resilience. Emissions reduction initiatives can have complementary benefits of enabling the community to withstand and be prepared for sudden or more long-term changes brought about by climate change.

### Community buy-in is critical

For emissions reduction actions and strategies to be effective, they need to be long-lasting and an ingrained part of the way a council does its business. To ensure that happens, it is critical that there is community support for a council's emissions reduction activity. That can be achieved by calling on the community to help with the emissions reduction action, or supporting the community in its own efforts to reduce emissions.

## Councils can lead behavioural change

Communities also have a part to play in reducing emissions. If a community sees its council demonstrating tangible commitment to reducing emissions, members of that community are likely to willingly make positive changes to their own carbon footprint.

### **What your council can do**

We encourage your council to review the stocktake of emissions reduction activities and give thought to which actions undertaken in other councils could be replicated in your own council and community.

< Every small change that your council makes to the way in which it operates will ultimately help to reduce emissions. >

Every small change that your council makes to the way in which it operates will ultimately help to reduce emissions. While the changes that your council can make might seem minor in the big scheme of things, if wholesale reductions in emissions are to result, all New Zealanders need to make changes to their behaviour. By changing the way that your council does things, your council can role model the changes in behaviour that are needed to your community, and can demonstrate its commitment to leading and coordinating communities to reduce emissions



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**Stocktake  
of emissions  
reduction survey  
responses**

## Stocktake of emissions reduction survey responses

In late 2017, councils were asked to outline the activities that they have underway, or intend to undertake, to reduce emissions within their organisations and/or communities. The table below sets out a stocktake of the responses which were received from participating councils. These responses were received in late 2017.

< The survey responses demonstrate that significant work is underway in councils across the country to contribute to emissions reductions. >

The survey responses demonstrate that significant work is underway in councils across the country to contribute to emissions reductions. The range of actions and strategies that councils have adopted to contribute to emissions reductions is broad and varied. Some of the actions and strategies have a strong sustainability focus as opposed to having climate change mitigation at their core, but will likely contribute directly or indirectly to emissions reductions.

Councils are encouraged to review the range of actions and strategies underway in councils across the country and think about which of the actions or strategies they could adopt or consider.

| Summary of emissions reduction activities/initiatives  | Regional mitigation initiatives                                  |
|--|--|
| <b>Ashburton District Council</b>  |  |
| Exploring and implementing more efficient alternatives as part of day to day activities (eg reducing waste to landfill, replacing sodium streetlights with LEDs etc) but not through an explicit emission reduction policy.  | Participant in Canterbury Regional Climate Change Working Group. |
| <b>Auckland Council</b>  |  |
| <ul style="list-style-type: none"> <li>• Adopted Low Carbon Auckland Plan in 2014, which sets a 30-year minimum pathway and 10-year plan for Auckland as a region. Set an emissions reduction target of 40 percent by 2040.</li> <li>• A review and refresh of the Plan is underway – updated plan is likely to combine both mitigation and adaptation measures.</li> <li>• Auckland has signed the C40 Paris Pledge for Action to raise ambition before the Paris Agreement takes effect in 2020.</li> <li>• Involved in a number of climate change mitigation initiatives through the Low Carbon Auckland, reported on each year through an Annual Update Report.</li> </ul> <p>Highlights from the 2017 report include:</p> <ul style="list-style-type: none"> <li>• Record number of passengers used Auckland’s public transport network last year – 20 million train trips and 90 million public transport trips in total.</li> <li>• Construction of 14.2km of cycle ways has improved the safety and appeal of cycling as a transport choice.</li> <li>• Auckland Transport has purchased 15 new electric trains to meet growing demand and to prepare for the electrification of the railway line between Papakura and Pukekohe.</li> <li>• Five community recycling centres have been established since 2014, each diverting around 70 percent of the waste they receive from landfill. These, and other initiatives, have helped to reduce per capita waste from 160kg (2010) to 144kg (2017).</li> <li>• The re-fit of the Council’s head office at 135 Albert Street achieved a world-leading six Green Star Rating for the office interior’s sustainability.</li> <li>• The Mayor’s Million Trees programme has already planted 170,000 primarily native trees.</li> <li>• In 2017 the council launched the ‘Live Lightly’ initiative, making it easier for Aucklanders to live low carbon lifestyles by highlighting the everyday lifestyle choices people can make to save money, have a healthier life and care for Papatuanuku.</li> <li>• Panuku Development Auckland announced that it will require new homes in its ‘Transform and Unlock’ locations to achieve at least a 6 Homestar rating.</li> <li>• Over 40 percent of Auckland’s 21 Local Boards are working with communities on low carbon projects to mitigate emissions. Three Local Boards have adopted their own Low Carbon Plans and others are in development.</li> </ul> |  |

| Summary of emissions reduction activities/initiatives  | Regional mitigation initiatives |
|--|---------------------------------|
| <b>Bay of Plenty Regional Council</b>  |                                 |
| <ul style="list-style-type: none"> <li>• BOP Waste and Resource Efficiency Strategy (2013 - 2023).</li> <li>• Council land management advisers provide forestry opportunity advice - upon enquiries, staff provide government contracts for ETS or PFSI packages and information that is publically available (2008 - 2012).</li> <li>• Providing feedback on energy policies (2005 - 2007) and support district councils with cleaner production focuses on reducing waste linked to reducing GHG from landfills.</li> <li>• SmartGrowth recognising the linkage between urban form and energy use.</li> <li>• Public transport is linked through a more efficient transport system with reduced use of fossil fuels.</li> <li>• Regional GHG inventory/community carbon footprint (2006 by Landcare Research, 2017 by Aecom).</li> <li>• Planting permanent trees in regional parks.</li> <li>• BOPRC and Grow Rotorua in association with Lake Rotorua Stakeholder Advisory Hroup, Lake Rotorua Primary Producers Collective, Dairy NZ, Beef + Lamb NZ and Scion hosted the Land Use Opportunities Symposium in 2015 - provided information and opportunities on/for afforestation.</li> <li>• Lake Rotorua Incentive Scheme encourages converting pastoral land to forest - outcomes will reduce emissions from agriculture activities and increase carbon sinks. Council's effort in reducing nitrogen inputs into Lake Rotorua likely to result in reduced stock numbers, which will result in reductions of GHG from animals and amount of fertiliser needed to support larger animal numbers.</li> <li>• Council building upgrade design incorporated features which will halve the energy consumption and save 50 tonnes of Co2 emissions. On-site EV charging stations provisioned in the upgrade project.</li> <li>• Actively seeks suppliers with environmental sustainability considerations and gives preference to goods and services that use renewable energy sources, recycled and/or non-toxic materials, reusable goods, efficient and equitable.</li> <li>• Council's sustainable fleet management principles - combination of cleaner vehicles, fuel-efficient operation and driving and reducing amount of road traffic generation. Has EVs in the fleet and planning to transition all light fleet vehicles to EVs. In house recycling and onsite waste audits.</li> <li>• Member and part of Sustainable Business Network initiatives.</li> <li>• Planted 345 trees to offset 51.75 tonnes of carbon 2009 and later planted 345 native trees to offset another 51.75 tonnes in 2013 (Carbon4Good). 215,000 plants planted by Council in 2017 winter.</li> </ul> |                                 |

| Summary of emissions reduction activities/initiatives  | Regional mitigation initiatives   |
|--|---|
| <b>Central Hawke's Bay District Council</b>  |   |
| Developing an Environmental and Sustainability Strategy. Always consider best environmental alternative whenever designing or redeveloping assets and facilities.  |   |
| <b>Central Otago District Council</b>  |   |
| Sustainability Strategy includes climate change initiatives.   | Council has engaged Bodeker Scientific to produce a climate change report for the Central Otago District. |
| <b>Christchurch City Council</b>   |   |
| <ul style="list-style-type: none"> <li>• Sustainable Energy Strategy for Christchurch 2008 - 2018 (due to be reviewed).</li> <li>• Christchurch Energy Action Plan 2015 (due to be reviewed). Climate Smart Strategy 2010 - 2025 (due to be reviewed).</li> <li>• Two of the Council's strategic priorities include climate change leadership and informed and proactive approaches to natural hazard risks.</li> <li>• Internal council programme of work - Resource Efficiency and GHG Emission Policy signed by CEO in May 2017 - guides management of energy use, GHG emission generation, solid waste generation and water use.</li> <li>• CCC was the first organisation in NZ to achieve Energy-Mark Gold certification for energy management and achieved CEMARS certification.</li> <li>• Council set itself a target of becoming net carbon neutral by 2030.</li> <li>• Council has established an Innovation and Sustainability fund to support projects that support Council's strategic priorities.</li> <li>• Christchurch Agency for Energy has provided funding towards a range of Christchurch renewable energy projects.</li> <li>• Christchurch Energy Action Plan includes six programme areas of work focusing on energy efficiency, renewable energy and encouraging uptake of battery electric vehicles and charging infrastructure.</li> <li>• Provides resource efficiency support to businesses through the Target Sustainability Service.</li> <li>• A range of sustainability focused community projects - sustainable homes, Build Back Smarter home advice service, food resilience and community gardens programme and delivery of Future Living Skills courses in collaboration with Sustainable Living Education Trust.</li> <li>• Developed and implemented fully battery-electric car sharing initiative with Yoogo.</li> </ul> | Participant in the Canterbury Climate Change Working Group  |

| Summary of emissions reduction activities/initiatives  | Regional mitigation initiatives |
|--|---------------------------------|
| <b>Clutha District Council</b>   |                                 |
| <ul style="list-style-type: none"> <li>• Funding support for home heating efficiency scheme.</li> <li>• Hybrid vehicles for vehicle fleet.</li> </ul>  |                                 |
| <b>Dunedin City Council</b>  |                                 |
| <ul style="list-style-type: none"> <li>• Te Ao Turoa (environment strategy for the city) has a carbon target.</li> <li>• Several national/international CC declarations including the Compact of Mayors that DCC is working through its commitments to. Key actions include organisational carbon footprinting through the Enviromark CEMARS scheme; shift to LED street lighting; EV fleet changes; gas recovery at the DCC landfill.</li> </ul>  |                                 |
| <b>Environment Canterbury</b>  |                                 |
| <ul style="list-style-type: none"> <li>• Within the organisation: printing efficiency group; Resource Efficiency Group assessing ECan's carbon footprint and feasibility of obtaining 'Zero Carbon' or similar certification and progressing various emissions reduction initiatives such as an EV shared fleet scheme.</li> <li>• Underway is developing a process to ensure that climate change is robustly and consistently factored into relevant Council decisions across portfolios.</li> <li>• In the future, will develop the case to transition our transport fleet to EV and/or mobility as a service model.</li> <li>• Within the community: public transport provision, biodiversity projects that involve tree planting and wetland rejuvenation, study underway on freight mode shift from road to rail and shipping, air plan and clean burning rules.</li> </ul> |                                 |
| <b>Environment Southland</b>   |                                 |
| <ul style="list-style-type: none"> <li>• Environment Southland replaced its coal fired boiler with a wood chip fired boiler. However, this was before Council notified rules restricting the use of domestic heating appliances in response to the NES – Air Quality rather than climate change mitigation.</li> <li>• The use of electric/hybrid vehicles for Council activities has been discussed.</li> </ul>   |                                 |
| <b>Gore District Council</b>   |                                 |
| <ul style="list-style-type: none"> <li>• Facilitating the roll out of EV chargers in Gore.</li> <li>• Clean air loan scheme introduced to meet regional air shed requirements, which will by default reduce Co2 emissions.</li> <li>• A tree planting programmes in the Council's parks and reserves.</li> </ul>   |                                 |

| Summary of emissions reduction activities/initiatives  | Regional mitigation initiatives  |
|--|--|
| <b>Greater Wellington Regional Council</b>   |  |
| <ul style="list-style-type: none"> <li>• GWRC Climate Change Strategy - along with an implementation plan, adopted October 2015. Strategy designed to align and coordinate CC actions across GWRC's responsibilities and operations.</li> <li>• Establishment of a Corporate Sustainability Programme - committing resource to measuring GWRC's own emissions and implementing measures to reduce them.</li> <li>• Amendments in 2016 to vehicle purchase policy to prioritise the purchase of EVs - internal combustion engine vehicles are now only purchased when no suitable EV option exists. Fleet now contains 8 EVs.</li> <li>• Network of EV chargers established across all GWRC offices and depots across the region; mostly for GWRC use but some for visitors, will expand overtime.</li> <li>• In addition, waste minimisation, energy efficiency, provision of facilities and services that encourage active and public transport use amongst staff, encouraging car pooling etc.</li> <li>• Significant involvement in enabling forests in the region to draw CO<sub>2</sub> down from the atmosphere. Has 440ha of regenerating native forest covenanted under the Permanent Forest Sink Initiative.</li> <li>• Involvement with active travel and ride sharing initiatives and promoting these.</li> <li>• Management of the Metlink public transport network.</li> <li>• Development of a Climate Change Consideration Process, which requires all new initiatives and all council and committee decisions to include a climate change assessment. Ensures GWRC has a consistent, organisation wide system in place that enables officers to assess the emissions associated with an activity.</li> </ul> | <p>Convenes the Regional Electric Vehicle Working Group which is comprised of officers from councils across the region. Group operates as a coordinating mechanism for the promotion of EVs and in relation to the development of charging infrastructure. Produces a coordination update every six months which summarises the current state of play and short term outlook. Officials from NZTA, Ministry of Transport and EECA as well as staff from local lines companies and relevant businesses participate.</p> <p>Has worked with all councils in the region to establish a Regional Climate Change Working Group, comprised of one main and one alternate elected member from each council. The purpose of the group is to provide a forum via which councils can network, discuss issues, share information and where appropriate, achieve a consistent approach across all jurisdictions on climate change mitigation and adaptation. Recommendations generated by the group are for consideration by each council. It is expected that an officer level Low Carbon Transition Steering Group will be established to support the mitigation objectives set out by the Working Group.</p> <p>Councils across the region collaborated to commission the 2014 Wellington Greenhouse Gas Inventory, which provides a breakdown of emissions by territorial authority boundary. Data for the region and Wellington was updated in 2016 but for other councils not practical to update on anything on more than a 4-5 year basis. It is expected all councils will participate in a full update in the 2018/19 financial year. Inventory is instrumental to climate change mitigation efforts in the region as it enables councils to understand emissions sources and opportunities for reduction.</p> |

| Summary of emissions reduction activities/initiatives   | Regional mitigation initiatives                                     |
|---|---|
| <b>Hamilton City Council</b>  |   |
| <p>In July 2016 HCC resolved to adopt a set of 11 Sustainability Principles that underpin how sustainability is considered in Council's decision making and operations. Principles focusing on emissions are:</p> <p><b>Principle 4:</b> Council works with central government to deliver on national GHG emission reduction targets and supports resilience to CC in our communities.</p> <p><b>Principle 5:</b> Council promotes walking, cycling, public transport and other low carbon transport options.</p> <p><b>Principle 6:</b> Council works to improve the resource efficiency and health of homes, businesses and infrastructure in our city.</p> <p><b>Principle 7:</b> Council supports the use of renewable energy and uptake of EVs.</p> <p>Council undertakes an annual stocktake of sustainability actions it is undertaking.</p>     |   |
| <b>Horizons Regional Council</b>  |   |
| <ul style="list-style-type: none"> <li>• Internal energy efficiency review conducted in 2016.</li> <li>• Initiatives to reduce emissions have begun, including changes to vehicle fleet and purchase of an EV.</li> <li>• Corporate Assets team is assessing a number of options to improve energy efficiency and reduce emissions identified in the review, which showed Horizons can save 18,740kg of carbon emissions in energy consumption p/annum.</li> <li>• Recycling is a key initiative and contractors are requested to utilise eco-friendly products.</li> <li>• Regional Public Transport Plan provides for public transport in the Horizons Region within constraints of central government funding and management model. It has a range of objectives, policies and actions to improve and increase services and their uptake.</li> </ul> | N/A.  |
| <b>Hurunui District Council</b>   |   |
| <p>Proposed DP has clear rural and settlement zones and has subdivision sizes in the settlement areas that allow for high density housing. This means that developments in settlements are located close to existing population centres and facilities, and reduce sprawl outside the settlements.</p>  | Participant in the Canterbury Regional Climate Change Working Group |
| <b>Hutt City Council</b>  |   |
| <ul style="list-style-type: none"> <li>• EV charging stations.</li> <li>• Changing council fleet to EVs.</li> <li>• Completing survey for Carbon Disclosure Project.</li> <li>• Reporting HCC energy consumption and carbon emissions monitoring.</li> <li>• Urban Forest Plan.</li> </ul>  | Participant in Wellington Region Climate Change Working Group       |



| Summary of emissions reduction activities/initiatives  | Regional mitigation initiatives                                     |
|--|---|
| <b>Kāpiti Coast District Council</b>   |   |
| <ul style="list-style-type: none"> <li>• Council participates in CEMARS.</li> <li>• Has an environmental sustainability programme of works which includes community-based initiatives.</li> <li>• Has an eco-design advisory service.</li> <li>• Has a range of energy management initiatives.</li> <li>• Recently partnered with Spark NZ to install electric vehicle charging infrastructure in the district.</li> <li>• Provides support to Enviroschools programme.</li> <li>• Has a Waste Minimisation Officer.</li> </ul>  | Participant in Wellington Region Climate Change Working Group       |
| <b>Mackenzie District Council</b>  |   |
| <ul style="list-style-type: none"> <li>• Carbon trading, however the decision to do so was less focused on emissions and more focused on a revenue stream.</li> </ul>  | Participant in the Canterbury Regional Climate Change Working Group |
| <b>Manawatu District Council</b>   |   |
| <ul style="list-style-type: none"> <li>• Solid waste minimisation strategy.</li> <li>• Upgrade of waste water treatment plan.</li> <li>• Switch to LED street lighting.</li> <li>• Proposed solar panels for new recycling centre.</li> </ul>  |   |
| <b>Masterton District Council</b>  |   |
| <ul style="list-style-type: none"> <li>• MYMasterton: Our People, Our Land strategy. Climate change actions in that strategy include reducing our impact on climate change (mitigation) by improving energy efficiency/conservation; minimising waste; enabling and promoting cleaner transport; working towards a more circular vs linear economy; working towards low carbon economy/achieving government target of 50 percent reduction in GHG emissions from 1990 levels by 2050. Preparing for future changes (adaptation) by planning ahead to build resilience; keeping informed and sharing information; being open to economic opportunities generated by a 'low carbon economy'. Strategy currently at the targeted engagement stage.</li> </ul> | Participant in Wellington Region Climate Change Working Group       |
| <b>Matamata-Piako District Council</b>   |   |
| <p>Council has given consideration to developing an environmentally friendly approach as part of LTP discussions.</p>  |   |
| <b>Napier City Council</b>   |   |
| <ul style="list-style-type: none"> <li>• Recently purchased some electric cars and facilitated the instalment of electric car recharge stations in the city.</li> <li>• Have developed strategies such as the City Vision and Coastal Edge Master Plan that aim to encourage new ways of getting around the city, ie cycling and walking.</li> </ul>   | Participants in the Hawke's Bay Biodiversity Strategy.              |

| Summary of emissions reduction activities/initiatives   | Regional mitigation initiatives |
|---|---------------------------------|
| <b>Nelson City Council</b>  |                                 |
| <p>We are very much in the early stages of work in this space. We have recently received approval for a waste minimisation role who will also be tasked with carbon reduction initiatives.</p>  |                                 |
| <b>New Plymouth District Council</b>  |                                 |
| <ul style="list-style-type: none"> <li>• NPDC has an Energy Management Officer with the purpose of driving down energy use within Council’s assets and this is being achieved.</li> <li>• NPDC’s Let’s Go (Transportation) team has made significant progress in terms of working with schools and businesses to increase active travel.</li> <li>• Currently constructing a new refuse station with functionality built in to divert as much waste from landfill as possible through working with local community groups to manage the recycling/upcycling process.</li> <li>• Currently working with landowners to protect areas of bush/forest with significant biodiversity value.</li> <li>• NPDC has no central overarching strategy or policy guiding a coordinated response to climate change. NPDC does have a GHG reduction target for its own asset base.</li> <li>• Currently evaluating options for the upgrade of our (sludge) thermal drier associated with our wastewater treatment plant. The fuel source for this asset will greatly influence or emissions profile.</li> </ul> |                                 |
| <b>Northland Regional Council</b>   |                                 |
| <ul style="list-style-type: none"> <li>• Current fleet of 10 electric vehicles - 7 fully electric and 3 plug in hybrid vehicles.</li> <li>• 80 solar panels atop main HQ which help to charge electric vehicles - 20kW rooftop ‘solar array’ currently generates enough power to drive about 500 EV kilometres per day.</li> <li>• Bike racks at work and encourage staff to bike to work; two bikes within work vehicle fleet.</li> </ul>  |                                 |

| Summary of emissions reduction activities/initiatives  | Regional mitigation initiatives |
|--|---------------------------------|
| <b>Palmerston North City Council</b>   |                                 |
| <ul style="list-style-type: none"> <li>• Rooftop solar PV and solar hot water facilities.</li> <li>• Micro-hydro facility at Turitea Dam.</li> <li>• Gas capture at Awapuni Landfill &amp; Co-gen plant at WWTP.</li> <li>• Eco-design advisor service providing energy efficiency advice to community.</li> <li>• Council in the process of replacing existing light fittings with LEDs, including street lights and buildings.</li> <li>• E-bikes for staff to use to move about town.</li> <li>• Recently procured 2 extended range electric vehicles for building officers. Currently procuring 2 fully electric rubbish trucks.</li> <li>• Implementing a sustainable practices/behaviour change approach to waste minimisation (including moving to zero-waste events) and active transport.</li> <li>• Encouraging energy efficiency and compact city provisions through the District Plan.</li> <li>• Investigating use of waste heat from wastewater pipes to heat community pools.</li> <li>• Tree plantings.</li> </ul> |                                 |
| <b>Queenstown Lakes District Council</b>   |                                 |
| <ul style="list-style-type: none"> <li>• Funding in the 2018 LTP to capture and flare gas from Victoria Flats landfill.</li> <li>• Electric vehicle charging stations being installed within the district.</li> <li>• Significant district-wide transport initiatives underway - \$2 bus fares, improved frequency of public transport, establishment of Frankton-CBD cycleway.</li> <li>• Energy efficiency audits of pools facilities underway (part-funded by EECA) to reduce natural gas usage.</li> <li>• Investigating waste heat capture from WW flows to heat pools.</li> </ul>  |                                 |

| Summary of emissions reduction activities/initiatives  | Regional mitigation initiatives |
|--|---------------------------------|
| <b>Rotorua Lakes Council</b>   |                                 |
| <ul style="list-style-type: none"> <li>• Sustainable Living Strategy developed 2016. Objective 6 relates specifically to carbon and energy. In relation to this Council has committed to the Global Covenant of Mayors for Climate and Energy; has participated in developing a Community Carbon Footprint, and is currently completing organisation footprint; planning vulnerability assessment and adaptation and mitigation plan to follow including targets set.</li> </ul> <p><b>Range of community sustainability projects</b></p> <ul style="list-style-type: none"> <li>• Independent home performance advisory service contracted to improve household affordability, energy efficiency and quality.</li> <li>• Community gardens, Food Network.</li> <li>• Leading City in UN Global Compact Cities Programme.</li> <li>• Exploring conversion of street lighting to LED.</li> <li>• Extension of recycling collection into the rural areas.</li> <li>• Energy- Council main buildings moved from gas to geothermal energy for heating in 2016/17; and closely manage internal electricity energy efficiency.</li> <li>• Vermicomposting of co-blended biosolids and pulp fibre in place of landfilling and then incorporated into soil. This reduces pulp and bio-solids waste, emissions, inorganic fertiliser use and cost to ratepayers, and at the same time improves soil carbon, productivity of fodder crops, and crop resilience to drought.</li> <li>• Significant funding in the LTP to reduce inflow and infiltration into the sewerage network to reduce pumping and defer capacity upgrades and co-benefit will reduce the load of nitrogen leaving the treatment plant.</li> <li>• Looking to close an old landfill that does not use the landfill gas and has environment issues and dispose of waste in a landfill with a lower carbon footprint.</li> <li>• In the early stages of considering food waste processing.</li> <li>• Spatial Plan supports walkable neighbourhoods.</li> <li>• Partner in the Rotorua Lakes Programme to reduce the load of nitrogen to Lake Rotorua which will have the co-benefit of reducing agricultural emissions.</li> <li>• 2015 – 2019 build of an Urban Cycle Network, 26km of shared off road path.</li> <li>• Cycle skills training programme delivered in schools and community to support improved user capability on bikes and wheeled devices.</li> <li>• Purchase of a fleet of bikes for RLC staff to use for transport in and around the City.</li> </ul> |                                 |

| Summary of emissions reduction activities/initiatives   | Regional mitigation initiatives   |
|---|---|
| <b>Selwyn District Council</b>  |   |
| <p>Selwyn 2031 District Development Strategy - outcomes sought seek to reinforce consolidated towns and urban forms and create a hierarchy of centres which provide goods and services to their local communities. Adopting a centres-based framework and consolidated urban forms help contribute to reduce road transport and provides transport choice within towns such as walking and cycling. These outcomes will be implemented in the DP including by urban design requirements in town centres and a zoning pattern for employment areas/town centres which support the Selwyn 2031 township and activity centre networks, as well as provisions for medium density housing. In addition, the DP will need to give effect to the NPS on renewable energy and so provide for local, community and regional scale renewable energy activities. The DP is currently being reviewed and will be released for consultation in 2020.</p> | <p>Participant in Canterbury Region Climate Change Working Group</p>  |
| <b>South Waikato District Council</b>   |   |
| <p>Air quality and home heating initiatives within our community. Include offering subsidies and loan options for converting inefficient fire places with more efficient forms of heating such as heat pumps and modern log burners. Council's Burnwise Scheme endorses wood suppliers who commit to providing good wood in the community.</p>  |   |
| <b>Southland District Council</b>   |   |
| <ul style="list-style-type: none"> <li>• Lower emission vehicles.</li> <li>• Wind energy generation (Rakiura) - Stewart Island's power generation authority.</li> </ul>   | <p>Not at this stage but liaising on development of a climate change workstream at a regional level currently</p> |
| <b>Tasman District Council</b>  |   |
| <p>Council-owned production forests, has a policy on the ETS. Tasman District Council Forests - Forest Management Plan 2014 - 2019 in place.</p>  |   |
| <b>Taupo District Council</b>   |   |
| <ul style="list-style-type: none"> <li>• In the initial stages of starting the review of the Taupo District Plan and will consider how emissions could be reduced via the District Plan.</li> <li>• Have done some work around looking at the potential for electric vehicles in our fleet - will be investigated further once recruit a Fleet Manager in the short term future. Current challenge for uptake of EVs is that the council is in temporary accommodation spread between six different sites - however, it is very likely that our new building will have the infrastructure installed for EVs.</li> </ul>   |   |

| Summary of emissions reduction activities/initiatives   | Regional mitigation initiatives  |
|---|--|
| <b>Tauranga City Council</b>  |  |
| <ul style="list-style-type: none"> <li>• Citywide community carbon footprint prepared for 2015/2016 (in draft). Purpose to understand local emissions profile, enable informed decision making and policy development, develop opportunities to work with key emission sectors and stakeholders in the community.</li> <li>• As part of a collaboration agreement with EECA to reduce energy use, currently working on a number of opportunities for energy management and savings with several key teams.</li> <li>• Implemented EnergyPro software to help us gain insights and data which will help support energy management goals. Waste Management and Minimisation Plan 2016 - Action Plan.</li> <li>• Community Wellbeing Strategic Plan 2018 - 2021 adopted and going into LTP community consultation.</li> <li>• Commitment to increase community resilience and preparedness.</li> <li>• Tauranga Transport Strategy and Cycleways Action Plan.</li> <li>• Development of a citywide environment strategy underway.</li> </ul> | <p>The Tauranga Carbon Reduction Group (local advocacy group) coordinates an informal forum, including Bay of Plenty Regional Council, Tauranga City Council and Western Bay of Plenty District Council.</p> |
| <b>Thames-Coromandel District Council</b>   |  |
| <ul style="list-style-type: none"> <li>• Thames public transport trial.</li> <li>• Planting the memorial forests offsets emissions.</li> <li>• Using regional landfill and not having own separate new ones.</li> <li>• Supporting installation of electric vehicle charging units.</li> </ul>  |  |
| <b>Timaru District Council</b>  |  |
| <ul style="list-style-type: none"> <li>• Have adopted and implemented and a 3 bin kerbside Waste Minimisation collection level of service. This minimises waste to landfill which has reduced the Timaru community's carbon footprint significantly.</li> <li>• The new Aquatic Centre uses wood fuel and heat pumps for heating the four pools and thus has avoided using coal with its high emission regime.</li> </ul>   |  |

| Summary of emissions reduction activities/initiatives  | Regional mitigation initiatives                                      |
|--|--|
| <b>Upper Hutt City Council</b>   |  |
| <ul style="list-style-type: none"> <li>• Sustainability Strategy (2012 - 2022) to be reviewed next year.</li> <li>• Land Use Strategy 2016 - 2043.</li> <li>• Riparian planting along Mangaroa River.</li> <li>• Eco-design advice.</li> <li>• Energy monitoring (using E-bench).</li> <li>• Sponsor Evolocity (regional schools programme).</li> <li>• LED street light upgrades.</li> <li>• Trialling water sensitive urban design through use of roadside drainage swales.</li> <li>• Encourage park and ride.</li> <li>• Investigating sustainable energy options for council projects including solar and other options for possible upgrade of the pool.</li> <li>• Love Food Hate Waste/waste-free parenting.</li> <li>• Supported EV charging stations (some funding and providing car space/signage).</li> <li>• Urban cycleway project (commuter cycling).</li> <li>• Promote sustainable business (SBN networking).</li> <li>• Trial 'Be the Change' project at local intermediate school - learning about sustainability/climate change to promote community-led initiatives and leaders.</li> <li>• Internal council recycling and food waste collection (composting/worm bins).</li> <li>• Free home energy assessment (Fund Sustainability Trust to complete).</li> <li>• Funds for community gardens and zero waste.</li> <li>• Sustainable living courses.</li> <li>• Reusable bag campaign - reusable cloth bags distributed to community and retail.</li> </ul> | <p>Participant in Wellington Region Climate Change Working Group</p> |
| <b>Waikato District Council</b>  |  |
| <p>No initiatives adopted or proposed to be adopted that focus specifically on climate change. There will be provision for the identification of hazard areas, low impact design and energy efficiency through allotment building orientation and walkable neighbourhoods to be included in the proposed district plan when notified and some mitigation measure for climate change impacts on infrastructure in the current 30 year infrastructure strategy.</p>  |  |

| Summary of emissions reduction activities/initiatives   | Regional mitigation initiatives |
|---|---------------------------------|
| <b>Waikato Regional Council</b>   |                                 |
| <ul style="list-style-type: none"> <li>• Established emissions evidence base by: <ul style="list-style-type: none"> <li>• Updating the assessment of climate impacts for the Waikato region using CMIP5 data;</li> <li>• Completing region-wide greenhouse gas inventory with regional emissions for 2015-16 Financial Year of 13.8 million tonnes CO<sub>2e</sub> (gross) and 8.2million tonnes CO<sub>2e</sub> (net); and</li> </ul> </li> <li>• Five years continuous reporting of corporate emissions, with 2016-17 Financial Year as the first certified by CEMARs with emissions of 1,672 tonnes CO<sub>2e</sub></li> <li>• Developing Sustainable Business Network, Science Based emission reduction Targets (SBTs) for ongoing reductions and management</li> <li>• Completed a stocktake of all corporate and operational regional activities to determine description and current management inclusion of climate change matters, exposure of each activity to a changing climate, and opportunities for emissions reductions.</li> <li>• Regional Waste and Resource Efficiency Strategy targets greenhouse gas emissions from landfills through reductions by following the waste management hierarchy. Strategy currently being reviewed.</li> <li>• Regional Energy Strategy recommendations for use of low emissions renewable energy has been fully incorporated into RPS, including opportunities for bio-energy and biofuel substitutions.</li> <li>• Full implementation of NPS renewable electricity from geothermal and hydro energy in RPS and in regional plan and from wind in RPS (as related to landscape effects, there being no regional consenting role for air pressure – turbines are managed via district plans through effects of the use of land).</li> <li>• 2017-18 Corporate trialling of Electric Vehicles</li> <li>• RPS policy directs peat management to reduce rate of peat subsidence and carbon loss (Waikato farmed peat loss of greenhouse gases estimated at 6.9t CO<sub>2e</sub>/ha/yr)</li> <li>• RPS policy directs regional plans to reduce exposure of soils for soil conservation (50 percent increase in carbon loss with cultivation)</li> <li>• Completed a regional soils strategy identifying a programme of actions with co-benefits of reducing greenhouse gas emissions.</li> <li>• Planted 290 hectares (494,000 wetland, dune and riparian and forest plants) during the 2016 – 2017 Financial Year with the potential (depends upon survivability) to sequester 15,806 tonnes CO<sub>2</sub> after 10 years.</li> <li>• Developed, commissioned, and using a Waikato region carbon calculation tool capable of determining carbon sequestration from mixed native forest species (tree and shrub) plantings.</li> <li>• Biosecurity programmes targeting herbivores (primarily possums and goats) reduce soil conservation damage that affects release of soil carbon and promotes successful establishment of biodiversity / soil conservation and riparian protection plantings.</li> </ul> |                                 |



| Summary of emissions reduction activities/initiatives  | Regional mitigation initiatives   |
|--|---|
| <b>Waimakariri District Council</b>  |   |
| Considering options for transitioning vehicle fleet to EV fleet and evaluating costs/benefits of vehicle ownership versus transport as a service.  | Participant in the Canterbury Region Climate Change Working Group.  |
| <b>Waipa District Council</b>  |   |
| <ul style="list-style-type: none"> <li>• Biggest initiative is promoting a more walkable urban environment by ensuring that new greenfield developments are planned and developed to be integrated into the existing urban environment in a manner that promotes walking and cycling as a key form of accessibility. Moving away from car based urban form/design (curvilinear cul-de-sac types) and promoting more connected grid like road forms. Getting engineers to accept that roads are for people not just cars. Moving to more compact forms of residential development that support walking neighbourhoods and towns.</li> <li>• The district has a walking and cycling strategy and is developing a more linked up walking and cycling network across the district.</li> <li>• Recent structure plans for growth cells are pertinent in promoting a more sustainable resilient urban form.</li> </ul> |   |
| <b>Waitaki District Council</b>  |   |
| Assisted in the installation of four EV charging stations throughout the district.   |   |
| <b>Wellington City Council</b>   |   |
| WCC has adopted the Low Carbon Capital Plan, which enshrines a variety of actions to reduce emissions in the city under three central themes: Greening Wellington's growth, Changing the way we move, and Leading by example. Sets a target of reducing both Council and citywide emissions by 80 percent before 2050. This key document is complemented by other strategies like the Wellington Resilience Strategy and Wellington 2040.  | <ul style="list-style-type: none"> <li>• Participant in the Wellington Region Climate Change Working Group.</li> <li>• Participant in the Regional Electric Vehicle Working Group to promote and coordinate EVs in the region.</li> </ul> |
| <b>Whakatāne District Council</b>  |   |
| <ul style="list-style-type: none"> <li>• The Council has adopted a Sustainability Strategy (2010) and developed accompanying Action Plans to look at mitigating the Council's environmental impact.</li> <li>• The Council is also commencing a climate change project which will include a review of the Sustainability Strategy and wider consideration of mitigation and adaptation in response to climate change.</li> </ul>   |   |

| Summary of emissions reduction activities/initiatives   | Regional mitigation initiatives   |
|---|---|
| <b>Whangarei District Council</b>   |   |
| <ul style="list-style-type: none"> <li>• Under development is a 2 part CC Strategy. Part 1 is a Corporate Sustainability Strategy - internally facing, guides how the organisation can create a more sustainable workplace and deliver our services to the community in a more sustainable way. Intention is to get own house in order before looking outward, although there is alignment with Whangarei Waste Minimisation Plan 2017. P1 in first draft and going through staff review. P2 is a district CC adaptation strategy acknowledging that the organisation needs to adapt to CC - addressing the changes that we are already seeing and will continue to encounter even if there is a reduction in future emissions. Work on P2 has not yet begun.</li> <li>• Action Plan supporting P1 complements existing initiatives to promote sustainability within Council including, introduction of EVs to the fleet.</li> <li>• Councillors have informally given direction to review the fleet vehicle purchasing policy and look seriously at integrating more EVs.</li> <li>• One district water treatment plant for potable drinking water is going to be demolished and replaced with a new plant; design brief for the new building requires sustainability principles and methods (including reducing emissions) to be integrated into the design and operational aspects of the building. Part of the feasibility study includes investigating how renewable energy infrastructure can be incorporated within the design and used by the plant. WDC Water Services team have some records of the carbon footprint from the operation of plants across the District. This complements the approach to make the operating system as efficient as currently possible.</li> <li>• Carbon footprint has also been informally assessed against the off-setting credits provided by forestry on Council owned land in the water catchments.</li> <li>• Consultant is assisting Council with energy management consulting, energy auditing, contract procurement, power factor analysis, tariff reviews and carbon emission reporting.</li> <li>• Biogas generator was recently installed at main wastewater treatment plant, which is fuelled by methane produced by microbes that digest the organic waste. Gas is able to be captured from the Landfill and used for energy. Council and Northland Waste are assessing options to sell the gas for energy or to use it for Council operations.</li> <li>• Under consideration at the moment is the initiative to accept food waste at the main wastewater treatment plant. A digester solely for food waste could be established to generate more methane gas for energy and at the same time reduce the waste currently going to the landfill - initiative at the early stages of discussion.</li> </ul> | <p>The Northland Sustainability Network is comprised of representatives from organisations across the region such as the Northland DHB, Northland RC and industry. It supports the sharing of sustainability learnings with each other and helps build regional momentum.</p> |

4

# Case studies

## Case study: Auckland's new approach to reducing emissions: an integrated plan for climate action

In early 2018, the Auckland Council resolved to revisit and update its existing Low Carbon Auckland plan (adopted in 2014) and the associated target of reducing Auckland's greenhouse gas emissions by 40 per cent by 2040 (based on 1990 levels). This resolution was driven by the significant increase in global climate action ambition and urgency that has emerged since the adoption of Low Carbon Auckland, as well as the recognition that multiple co-benefits could result from addressing Auckland's emissions trajectory hand-in-hand with increasing its resilience to climate change. The update to Low Carbon Auckland also comes on the back of the release of the refreshed Auckland Plan 2050, which sets out key outcomes for the region, each of which has an impact on, and will be affected by the region's climate response.

An updated climate action plan is currently in development that will simultaneously set a path to rapidly reduce greenhouse gas emissions and help prepare Auckland for the impacts of climate change. In taking an integrated approach, the climate action plan will better consider and address the interrelated climate issues between areas like transport, energy, housing, waste and water so that one solution delivers greater efficiencies and multiple benefits across Auckland.

### Understanding the challenge ahead

Low Carbon Auckland acknowledged the key role that the region needed to play in the reducing New Zealand's greenhouse gas emissions and the actions detailed within the plan put Auckland on the right path. However, more urgent action is needed over and above this plan in order to respond to the Paris Agreement targets to keep temperature increases below dangerous levels (ie 1.5°C) and the Government's intention to achieve net zero emissions by 2050. Whilst some progress has been made to reduce Auckland's per capita emissions, Auckland's ongoing growth has meant that net emissions still rose by 2.1 per cent between 2009 and 2015.

In addition to the growing emissions reduction imperative, the past few years has seen a range of climate-related weather events affecting the region. From increasingly frequent and severe storms, tidal surges and flooding events, through to disrupted water and power supplies, the region's preparedness and response to climate change has been the subject of growing public attention.

In order to escalate Auckland's ambition in a way that delivers real change and prepares the region for more frequent climate-related weather events, an evidence-informed approach is being taken to develop the updated climate action plan. This includes updated emissions modelling, localised Auckland-specific climate

NIWA projections, and research into Auckland's climate risks and vulnerabilities. This work provides Auckland with the best, most detailed information on future projected changes for the region, both for decision making and to increase the understanding of risks, vulnerabilities and opportunities.

Taking action now and raising the level of ambition in addressing climate change is critical to ensure that future generations have a place to live, survive, and thrive. It will also provide major additional opportunities and benefits to Auckland. Addressing emissions hand in hand with increasing resilience will include opportunities to improve air and water quality, deliver improved health and equity outcomes and to ensure that Auckland is in step with the global transition to a low carbon economy.

### A plan for all of Auckland means working together

From its inception, the Low Carbon Auckland plan was conceived as a 'plan for Auckland', not an 'Auckland Council plan'. The updated climate action plan will take the same approach.

A review of Low Carbon Auckland's implementation found that stronger accountability against actions would be needed for any updated plan. Collaboration and a long-term commitment to climate action across the region was identified as crucial to achieving a rapid and fair transition to a low-emissions climate-resilient future. With this in mind, the initial phases in the development of the updated climate action plan have focussed on enhancing collaboration with central government, mana whenua, Local Boards, businesses and communities across the region.

Early engagement and awareness-raising around Auckland's specific climate change issues has been a key focus for these activities. This approach involves the launch of an online platform to crowdsource ideas from interested Aucklanders at [www.climateakl.co.nz](http://www.climateakl.co.nz). This platform encourages people to share their ideas, but also raises awareness around the challenging questions and decisions that the region may have to make in relation to climate change.

Another priority for the updated climate action plan is to embed action within existing processes. Auckland Council intends to give greater focus to how that plan will link up with other existing plans, such as its Waste Minimisation Plan or Coastal Compartmental Management Plans. The plan will seek to add a climate change lens to existing plans that do not already have an explicit climate mitigation or adaptation focus.

## Case study: Christchurch's 100 percent Battery Electric Car Sharing Scheme

### The context

In 2015, Christchurch City Council (CCC) set a clear vision to promote the use of electric vehicles through the Christchurch Energy Action Plan. Key areas for action identified in that Plan include:

- The uptake of electric vehicle charging infrastructure by organisations in Christchurch;
- The uptake of electric vehicles by organisations and residents in Christchurch;
- Electrification of the Council's vehicle fleet; and
- Electrification of the Council's holding companies' vehicle fleets.

### Christchurch's battery electric car sharing scheme

The Energy Action Plan provided the direction for CCC to facilitate the provision of the first 100 percent battery electric car sharing service in New Zealand. The service was officially launched on 15 February 2018.

The 100 percent battery electric car sharing scheme for organisations and the public was initiated, researched and developed by CCC staff, and is run by a third party service provider, Yoogo Share.

### CCC's role in researching and developing the scheme

CCC initiated, researched and developed the 100 percent battery electric car sharing scheme which involved consideration of suitable battery electric zero exhaust emission vehicles, recruiting landlords of hubs throughout Christchurch to house the electric vehicles and charging infrastructure, adequate power supply for the charging infrastructure and the recruiting of foundation business members to use the scheme.

Following extensive research and development and recruitment of a sufficient number of foundation business members, CCC then went to market in 2016, through an Expression of Interest and Request for Proposal procurement process, to seek a service provider for a 100 percent battery electric car sharing service. CCC undertook the procurement process to seek a service provider on behalf of the recruited foundation business members. Yoogo Share was chosen to provide the service.

### How does the scheme work?

One hundred battery electric vehicles, which are owned and maintained by Yoogo Share, will be available in at least 9 hubs across the city for Christchurch businesses and for the public to use. Hubs include the Christchurch Art Gallery Te Puna o Waiwhetu car park, the West End car park, The Crossing car park, Christchurch International Airport, Ara Institute, University of Canterbury, Papanui and Fendalton libraries, and Lyttelton Community Centre. CCC staff worked with the owners of these premises to secure designated parking spaces for the scheme's battery electric vehicles and their related charging infrastructure. Additional hubs are under consideration for development.

The first stage of the scheme uses Hyundai Ioniq and BMWi3 battery electric vehicles.

Businesses and the public are able to book the Yoogo Share vehicles via an online booking system that is maintained and administered by Yoogo Share. At present the service operates an "A to A" model, meaning that users of vehicles pick up a battery electric vehicle from one hub and return it to that same hub once their trip is completed. Trips in the battery electric vehicles cost the public about \$15 per hour, and special rates have been negotiated for business users. The cost to use the vehicles is based on the length of time the vehicle is used for.

As at July 2018 there are already over 2,500 registered business and private members. This includes more than 800 private users and 25 organisations registered to use the service.

In the first month that Yoogo Share started officially operating in February 2018 there were about 1,000 bookings. Bookings have steadily grown to more than 1,700 per month in July 2018.



Kirsten Corson (Yoogo Share GM), Kevin Crutchley (Council's Resource Efficiency Manager), Mayor Lianne Dalziel

## Foundation business members

CCC staff recruited and brokered the involvement of foundation business members to use the scheme's vehicles. These foundation business members are local organisations that use the scheme's vehicles for business related travel. Foundation business members of the scheme include Christchurch City Council, Ara Institute, Aurecon, Beca, the Canterbury District Health Board, Chapman Tripp, Christchurch International Airport, Environment Canterbury, Jacobs, Meridian Energy, Tonkin and Taylor and Warren Mahoney.

During the CCC led recruitment process a number of businesses indicated their desire to be part of the battery electric car sharing service, but faced the issue of needing to wait until their leases on business vehicles ended. Once these leases end there is the opportunity for these businesses to consider using the service.

## CCC's use of the service

CCC staff are using the new battery electric car sharing service. That involves CCC selling 54 of its existing compact pool cars. The modelled costs for the Council to use the scheme's vehicles show that the costs are potentially similar costs to those associated with the CCC's previous use of compact pool cars. There are initial costs for transitioning from the old system to using the new service, including staff time assisting with the internal system transition.

The Council's shift away from the compact internal combustion pool cars to the battery electric service is expected to result in CCC reducing its greenhouse gas emissions by an estimated 45 tonnes of carbon dioxide equivalent per year.

## Benefits of the scheme

The scheme aligns with global ambitions to reduce greenhouse gas emissions, as set out in the December 2015 Paris Agreement (COP21).

The car sharing model that the CCC has developed breaks down the barrier of the cost of battery electric vehicles and charging infrastructure, making battery electric vehicles more affordable and accessible for businesses and communities. There is the potential for the scheme to contribute to a reduction in the number of vehicles required in Christchurch through having an extensive car sharing scheme in the city.

The scheme makes battery electric vehicles available for use by a range of Christchurch organisations and the public, which will expose more people to battery electric vehicle use, help overcome myths and negative perceptions and encourage greater uptake of battery electric vehicles in Christchurch.

The scheme will have significant benefits for the environment and will contribute to a reduction in transport generated emissions in Christchurch. To date the scheme has reduced greenhouse gas emissions by an estimated 50 tonnes of carbon dioxide equivalent per year.

CCC's Resource Efficiency Manager and the architect and project manager for the scheme, Kevin Crutchley, says, "This is an exciting new transport service powered by electricity that is largely generated from renewable energy. The result is a service with zero exhaust emissions that will both reduce our city's greenhouse gas emissions and improve air quality, which will have positive health benefits for the residents of Christchurch."

Christchurch Mayor Lianne Dalziel says, "This service will deliver improved environmental and health outcomes and help the Council achieve its goal of becoming net carbon neutral by 2030. It's a smart and sustainable way for businesses and for local residents to get around town and I'm excited to see the service grow. This is the way of the future."



## Challenges associated with implementing the scheme

The battery electric car sharing model that CCC has developed is the first of its kind in New Zealand, and is one of only a handful of such schemes worldwide. Car sharing schemes in New Zealand and internationally have tended to involve predominantly petrol vehicles, and not 100 percent battery electric vehicles. The lack of similar 100 percent battery electric car sharing schemes meant that the Council had limited models or best practice examples to draw on when developing its scheme.

CCC faced and managed a number of challenges when developing its battery electric car sharing scheme. CCC's Resource Efficiency Manager undertook extensive research into identifying suitable vehicles that would meet the requirements of a 100 percent battery

electric car sharing fleet. CCC opted for battery electric vehicles, as opposed to plug-in hybrid vehicles or a mixed fleet, for a number of reasons including given that plug-in hybrid vehicles come with higher maintenance costs and present logistical difficulties around refuelling. CCC concluded that there were better environmental and air quality benefits from using a zero exhaust emission 100 percent battery electric fleet.

CCC's Resource Efficiency Manager also had to undertake a significant amount of strategic work into selecting where the scheme's hubs would be located throughout the city, which included securing landlords for hub sites and working with Orion to ensure that there was sufficient availability of power supply to the hubs, and to understand the costs of accessing and installing that power supply, before CCC could go to market for the service.

Another challenge that CCC faced was ensuring that it got enough foundation business members on board with enough combined vehicle utilisation requirements and scale for the Christchurch car sharing service. This was successfully overcome in order to be able to go to market and have a genuine prospect of attracting a third party service provider to invest in and implement an affordable service for Christchurch organisations and for the public.

Recruitment of the foundation business members by CCC's Resource Efficiency Manager involved one-on-one meetings with senior management of organisations to discuss the opportunity and benefits of a 100 percent battery electric car sharing scheme for their organisation. If an organisation was interested then the Resource Efficiency Manager worked with staff from each of the foundation business members on their business vehicle utilisation requirements.

## Costs associated with implementing and running the scheme

Notwithstanding the significant amount of staff time invested into research, development and recruitment for the scheme, CCC has not made any financial investment into the scheme. Funding towards the scheme was sought externally, with the Christchurch Agency for Energy providing a grant of \$365,000 towards the electric vehicle charging infrastructure and related electrical installation for the hub rollout. The Christchurch Agency for Energy was the foundation funding supporter for the service. The Energy Efficiency and Conservation Authority (EECA) provided \$500,000 of funding towards stage two of the service through its Low Emission Vehicles Contestable Fund.

Yoogo Share is responsible for all the costs associated with providing the service to businesses and to the public including providing and maintaining the vehicles, charging infrastructure, booking system and leasing hub car parking. Those costs are covered by the revenue gathered from the car hire fees.

## Scheme delivery time

Initial research and development of the 100 percent battery electric car sharing scheme concept by CCC started in 2016. The procurement process was completed in 2017 and the official launch of the Yoogo Share service for organisations and for the public was on 15 February 2018.

## Next steps

The scheme that was developed initially starts with an "A to A" model (users picking up and dropping off a vehicle at the same hub) but the intention has always been to move to an "A to B" model which will allow users of the service to return a vehicle to a different hub from the one it was picked up from. This will give users greater flexibility and choice about their travel arrangements. Yoogo Share have this planned for the future.

There are other potential premises in the city that are being investigated as future additional hubs.

## Case Study: Kāpiti Coast District Council

Kāpiti Coast District Council (KCDC) has led a number of initiatives with its communities to change hearts and minds, and contribute to emissions reductions.

### EV charging initiatives

Electra, ChargeNet, Horowhenua District Council and Kāpiti Coast District Council formed a partnership and submitted the '*Horowhenua and Kāpiti Electric Roads*' joint proposal to the Energy Efficiency and Conservation Authority's (EECA) Low Emission Vehicle Contestable Fund. The proposal was successful and match funding is now available to install nine Fast Chargers (50 kW DC) in five towns in Kāpiti and Horowhenua with cost shared across organisations.

The project aims to support a transition to Low Emission transport options by establishing a nationwide recharging network and encourage the uptake of Electric Vehicles within Horowhenua and Kāpiti districts and supporting business, private drivers and passengers of Electric Vehicles to easily reach destinations in Horowhenua and Kāpiti.

The project also supports the government to reach its target of 64,000 electric vehicles in 2021, by:

- Strengthening State Highway 1 and 57, enabling higher vehicle capacity, reduced queues and wait times.
- Enhancing visibility of charging facilities within the Kāpiti and Horowhenua districts themselves, leading to increased local electric vehicle purchases by businesses and residents.

The total value of this project is \$545,000; this includes a \$40,000 contribution by the Kāpiti Coast District Council, contributions from organisations and co-funding from EECA.

### Waste minimisation grants

Waste levy fees, paid by waste disposal operators, are redistributed by KCDC to community groups, businesses, iwi and Māori organisations, education providers, neighbourhood groups and other community-based organisations in the form of Waste Minimisation Grants. The Waste Minimisation Fund offers a total of \$20,000 for practical projects which lead to long-term waste minimisation action and offer additional benefits such as community participation and education.

### Eco Design Service

KCDC's Eco-Design Advisor is responsible for building awareness and knowledge across the District of sustainable building practices and available grants. Although KCDC covers the costs of employing the Eco-Design Advisor, the programme is a BRANZ initiative, with BRANZ providing the Advisor with technical and peer support. The service is offered to homeowners, renters, community groups, designers, architects and tradespeople, and seeks to encourage sustainable design ideas, and upgrading of existing homes to improve heat, health outcomes and reduce energy costs. While the focus of this initiative is on sustainability more generally, it is designed to encourage residents to think about ways in which energy consumption, and therefore emissions, can be reduced at home.



## Case study: Palmerston North City Council emissions reduction initiatives

Palmerston North City Council (PNCC) has strived to find large and small opportunities at the city-scale to reduce energy and emissions. Through various activities, PNCC has modelled opportunities for emissions reductions to its communities.

### Micro Hydro at Turitea Dam

In 2001 PNCC installed four mini hydro generators at the Turitea Upper Dam as a way of utilising renewable energy. In 2009 a turbine was added to increase energy recovery opportunities from the four micro water turbines. The scheme provides PNCC with opportunities to generate energy from waste. In winter, when there are considerable amounts of water stored in the Dam, all four hydro generators are operated and PNCC sells the surplus energy generated to the national grid.

### Procuring two fully electric rubbish trucks

In 2017, PNCC made a successful application to the Energy Efficiency and Conservation Authority's (EECA) Low Emission Vehicle Contestable Fund for \$350,000 for two new electric rubbish trucks, to replace diesel trucks. Half of the funding was used towards the cost of buying two electric trucks, and additional funding was used to halve the installation costs for a charging station. These trucks began operation on 20 August 2018.

### Solar heating initiatives

PNCC has installed solar hot water heaters on Council buildings, including the Library, Albert Street Depot and public toilet facilities in The Square. PNCC has also installed solar panels at its Lido Aquatic Centre and Freyburg Swimming Pool to make significant cuts to energy consumption.

In 2008, the Lido Aquatic Centre was identified as being one of the largest contributors to PNCC's carbon footprint. It was using more than \$300,000 a year in electricity, and \$65,000 in natural gas. An audit demonstrated that there were significant opportunities to reduce those costs, and associated greenhouse gas emissions.

The first phase, supported by EECA, involved installing variable speed drives on 15 of the Lido's pool and water feature pumps. Within one year of installation, electricity used by the whole complex had dropped by 19 per cent. The second phase involved installation of solar water heating panels to heat water for the complex's showers. Extra heat from the solar panels can also be used to boost the temperature of the swimming pool water. Although gas heating has been retained for days when there is not enough sun, the installation has resulted in gas consumption dropping by an average of 30 per cent a month, with potential savings of up to \$20,000 a year.







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