Christchurch City Council
Long Term Plan 2021-2031
ATTACHMENTS UNDER SEPARATE COVER

Date: Friday 7 May 2021
Time: 1pm
Venue: Council Chambers, Civic Offices, 53 Hereford Street, Christchurch

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#	SubID	First name	Last name	Comments - Please be as specific as possible to help us understand your views	I'd like to speak
124	39720	Chris	Doudney	Christchurch City Council Draft Climate Change Strategy Strategy: a plan of actions designed to achieve a long-term or overall aim Overall aim: minimise negative effects of the acknowledged climate change emergency Goals: Within necessary timeframes, eliminate fossil fuel emissions, enable net zero all other emissions, manage sea level rise, enable economic transition. Actions: Identify timeframes for activities, establish programmes and targets. The draft offered for comment is an extraordinarily vague strategy document, with woolly aims and hopes and with most activities comprising further planning. The strategy's goals are generally business as usual; and the ten "programmes" lack targets and timeframes. In this time of climate emergency, the strategy offers little leadership. The first matter that is critical to the issue of climate change is the complete cessation of fossil fuels use as energy sources, very soon (much sooner than 2035, let alone 2050). Fossil fuel elimination is hardly addressed in the draft strategy. The second critical matter is that the City must have a strategy that obtains most of its desired results in the near term - not much point in getting there in 2060 after various dire tipping points have cast us all irrevocably down the path of certain disaster. Therefore the strategy has to have a timeframe with specific goals and verifiable targets to be met. The timeframe has to be cast in the period 2021 - 2030, starting immediately. The draft strategy is correct to acknowledge that change is inevitable; the status quo is not possible, or desirable. It is noted that the strategy's costs are to be funded from the LTP budgets - specific sums should be allocated as soon as possible to identified activities. Actions for the City to pursue, under revised headings and goals, include:	Yes

				Accelerate EV bus acquisition, to be complete (ie no diesel or petrol buses) by 2024 and implement bus-on-demand EV shuttle services starting in 2022. Enable provision of EV charging facilities at all required locations by 2023, ongoing. Ban or exorbitantly tax fossil fuelled vehicles from central city by 2025, whole city by 2028, and encourage EV adoption through incentives eg free parking, loan finance. Implement major tree planting programmes of both native and non-native species for most city streets starting in 2021, with all major roads completed by 2026. Implement a planning policy which encourages central city dwelling in conjunction with shops and other commercial activities. (Unlike current zone-based policies), and bans residential or commercial development on land with high quality soils; and treats central city airbnb as motels. Ensure that the City Council is net zero emissions by 2025, not 2030 as suggested. Publicise necessary actions to reach goals, and counter with factual statements any false advertising by fossil fuel organisations (eg current gas industry propaganda proposing “co2 free gas” - not a likely practical possibility and certainly not in Christchurch before 2050). Subsidise solar panel installations on residential and commercial properties on a ‘rent to own’ basis, in conjunction with rationalisation of city power networks and grid connections. Implement rail connections to external conurbations including Lyttelton by 2023, with a new station at Colombo Street, and electrify the service as part of a national plan to electrify all rail services. Actively promote green power generation industries, eg wind turbines. Promote the reinstatement of the Lyttelton/Wellington ferry service, with battery powered ships. Reduce air travel by encouraging sea and rail travel, including movement of goods.	

Christchurch City Council Draft Climate Change Strategy

Strategy: a plan of actions designed to achieve a long-term or overall aim
Overall aim: minimise negative effects of the acknowledged climate change emergency
Goals: Within necessary timeframes, eliminate fossil fuel emissions, enable net zero all other emissions, manage sea level rise, enable economic transition.
Actions: Identify timeframes for activities, establish programmes and targets.

The draft offered for comment is an extraordinarily vague strategy document, with woolly aims and hopes and with most activities comprising further planning. The strategy's goals are generally business as usual; and the ten "programmes" lack targets and timeframes. In this time of climate emergency, the strategy offers little leadership.
The first matter that is critical to the issue of climate change is the complete cessation of fossil fuels use as energy sources, very soon (much sooner than 2035, let alone 2050). Fossil fuel elimination is hardly addressed in the draft strategy.
The second critical matter is that the City must have a strategy that obtains most of its desired results in the near term - not much point in getting there in 2060 after various dire tipping points have cast us all irrevocably down the path of certain disaster. Therefore the strategy has to have a timeframe with specific goals and verifiable targets to be met.
The timeframe has to be cast in the period 2021 - 2030, starting immediately.
The draft strategy is correct to acknowledge that change is inevitable; the status quo is not possible, or desirable.
It is noted that the strategy's costs are to be funded from the LTP budgets - specific sums should be allocated as soon as possible to identified activities.
Actions for the City to pursue, under revised headings and goals, include:

- Accelerate EV bus acquisition, to be complete (ie no diesel or petrol buses) by 2024 and implement bus-on-demand EV shuttle services starting in 2022.
- Enable provision of EV charging facilities at all required locations by 2023, ongoing.
- Ban or exorbitantly tax fossil fuelled vehicles from central city by 2025, whole city by 2028, and encourage EV adoption through incentives eg free parking, loan finance.
- Implement major tree planting programmes of both native and non-native species for most city streets starting in 2021, with all major roads completed by 2026.
- Implement a planning policy which encourages central city dwelling in conjunction with shops and other commercial activities. (Unlike current zone-based policies), and bans residential or commercial development on land with high quality soils; and treats central city airbnb as motels.
- Ensure that the City Council is net zero emissions by 2025, not 2030 as suggested.
- Publicise necessary actions to reach goals, and counter with factual statements any false advertising by fossil fuel organisations (eg current gas industry propaganda proposing "co2 free gas" - not a likely practical possibility and certainly not in Christchurch before 2050).
- Subsidise solar panel installations on residential and commercial properties on a 'rent to own' basis, in conjunction with rationalisation of city power networks and grid connections.
- Implement rail connections to external conurbations including Lyttelton by 2023, with a new station at Colombo Street, and electrify the service as part of a national plan to electrify all rail services.
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- Promote the reinstatement of the Lyttelton/Wellington ferry service, with battery powered ships.
- Reduce air travel by encouraging sea and rail travel, including movement of goods.

#	SubID	First name	Last name	Comments - Please be as specific as possible to help us understand your views	I'd like to speak
83	39664	Fiona	Bennetts	Kia ora, Thank you for the opportunity to comment on the proposed Ōtautahi Christchurch Climate Change Strategy. I fully support the nine principles, the four climate goals, and the 10 climate action programmes proposed for Ōtautahi Christchurch. Here are some of my thoughts: • I recently learned about Hope Spots (Hope Spots - Mission Blue (mission-blue.org)). What is being done to protect our rivers, harbours and ocean? These are important ecological areas and their protection helps save animals, ecosystems, and ultimately humans. Can we move to electric ferries in our harbours and rivers? • Could the Council utilise existing education programmes such as Roots & Shoots (The Jane Goodall Institute New Zealand)? • Education funding – Dr Rod Carr said recently at a Climate Change Commission presentation that no-one was responsible for funding education on climate change yet. Can this come from the Ministry for the Environment or Ministry of Education? • Transport – we need both carrot and stick approaches. Charge for parking in all retail areas as carparking is a luxury not a right. Remove parking where there are other facilities such as bike racks and bus stops. Slow speed limits down – make driving inconvenient while making the roads safer for cyclists and pedestrians. Build more cycleways and install more cycle lanes. Make more bus priority lanes (all major arterial routes). Seriously investigate Light rail. Reinstate passenger trains between Christchurch and Dunedin. Make buses free in the CBD or all over Greater Christchurch (funds from Ministry of Transport diverted away from motorway spending). Build more alleyways/storm-water basins to connect suburbs with off-road shared-use paths – short cuts are a great incentive. • Urban planning – prevent sprawling; grow up not out. More Living 2 and 3 areas. More townhouses close to amenities. More amenities close to townhouses. More community gardens and awareness of these. More rooftop gardens. More	Yes

				nature connections for non-human animals (e.g. birds and insects) to live in our city with us. • Water – reuse grey water and waste water, everything is a resource. • He Puna Taimoana (New Brighton hot pools) – install a heat transfer system with the local supermarket like Graham Condon pool has. • Waste – encourage central government to ban more/all single use plastics and encourage product stewardship. Change wheelie bin sizes – smaller red bin, provided it doesn't encourage abuse of the yellow bin and green bin. Capture all gas emissions from waste (another resource). • Energy – more solar and wind energy harvesting. End coal and oil/diesel use. All Council vehicles (bikes, cars, trucks, etc.) to be electric by 2030 or sooner (as they reach end of life). • Food – we need to move away from grazing ruminants and instead invest in regenerative agriculture, indigenous plantings, and alternative crops. This is more urgent than planting fruit trees. Perhaps some of the fruit and nut trees in the residential red zones (RRZ) can be relocated to schools and community gardens as the RRZ are redeveloped. Ngā mihi, Fiona Bennetts	

#	SubID	First name	Last name	Comments - Please be as specific as possible to help us understand your views	I'd like to speak
144	39719	Diana	Shand	Congratulations to Christchurch City Council for the move to develop a draft strategy and commit thereby to action. My submission is the call for more detail in how the strategy will be implemented, and the operational plan and funding. Action needs to be sooner rather than later and impetus will be built from bold investment. My submission focusses on three main areas: 1. The need for community education and involvement to ensure the outcomes we seek, will require effort and feedback on how cumulative efforts contribute to success. Therefore, it is important to involve key education centres in both designing ways to contribute and developing ways to measure and publicise progress. School education is a key to wider understanding....and with the school-strikes-for-climate bringing a willing community aboard, each school, indeed each classroom, could be measuring and reporting on their success on reducing GHG emissions (from transport and waste primarily, but there may also be some use of fossil fuels to address) against targets....and getting incentives, acknowledgement and publicity for their efforts. Involve the Universities/polytechnics/institutes of technology likewise. And all major institutions including hospitals and community facilities, new buildings and developments etc. In the matter of measuring and promoting progress, I would note that Christchurch City was indeed a significant member of the Communities for Climate Change - New Zealand Programme which involved a staged approach for systematically identifying and addressing Greenhouse Gas (GHG) emissions in local government council operations and their communities. (See attached report) As National Project Manager of the CCP-NZ Programme from 2004 - 2010, I observed the great incentive for actions, not only within councils, but also among councils, and for their communities, that came from the feeling that there was actual progress being achieved. By 2021 there must be ever more refined methods of calculating the reductions from council and community efforts, and all efforts should be made to align these methods in local government across New Zealand. Promotion of these methods and of progress, is also very important, so that people in communities feel their efforts are worthwhile. Energy consumption of specified areas could be measured and results shared by the energy companies, and more needs to be done to ensure this is achieved over time. Energy Conservation will continue to be very important in reducing GHG for we still continue to use fossil fuels in times of hydro-energy (and other sustainable energy generation) shortfall - and as it is energy conservation increases our resilience and dependence.	Yes

				2. As the bulk of Christchurch's greenhouse gas emissions came from transport (54.0% including 36% from land transportation) it is the area to concentrate on...and it is of concern that rail is not mentioned in the text. We have heavy rail corridors which exist and should be used especially for commuter rail from Rangiora/Amberley and Ashburton/Timaru. The District Councils are supportive of this, seize the opportunities. Within the city commuter rail between Lyttelton and the city could be a starting point, and there are other short hauls that should be piloted. Considering the long term benefits and the greater number of people involved, investment in rail at the stage would have must greater benefit than the investment of long-haul cycle trails. We want commuters out of cars, and the number of cycle commuters that would use the Lincoln-Rolleston - Christchurch links, or the Rangiora - Christchurch links would be minimal compared to the potential to take commuters out of cars on these links by train. Commuter rail transport will also be important in addressing housing shortages and some of the anomalies to be imposed by the National Policy Statement - Urban Development (NPS-US) which requires an Auckland solution to be imposed on Christchurch, and indeed one that will have detrimental ramifications to our city. The NPS-UD is driven by the need for more housing in New Zealand, and Christchurch earthquakes assisted Christchurch building new homes ahead of other cities...often to the detriment of productive soils (as between Christchurch and Lincoln)...a terrible loss which has not been accounted for in GHG accounting. Rapid transport, especially longer distance rail transport, will bring housing options further afield and indeed, like for Rolleston, opportunity to build new townships on less-fertile soils and connect them to major cities. The data for commuter road transport, or other regular usage, from further afield which could be served by better rail connection, is imperative. And we must continue on the development of any rapid transport and public transport systems 3. Further to housing, the greenest house is that that already exists. The additional embedded energy in building new houses is significant, and money would be better invested in restoring and refurbishing existing houses especially heritage buildings which can be repurposed. In some cases this also brings more affordable housing within the reach of the most needy, e.g. the heart of Christchurch there are many old Edwardian houses which have been converted to contain flats or rooms housing many at a reasonable cost....and these are being replaced by new houses well beyond the reach of even first-time home owners. These new houses should be built elsewhere and there should be incentives and support for heritage buildings to be repurposed or renovated for living to meet new tenancy standards. Otherwise little is being done for the whole strata of society whom are next to living on our streets, who once lived or would live in so-called "old dungers" many of which are capable of restoration to a good standard and repurposing and indeed may already be contributing "hidden density". Investment in heritage and character building restoration and refurbishment is an investment in CHC emission savings.	

				So all in all, considering the Carbon sequestration, the shortage of building timber, the social needs for lower cost i.e affordable habitations, part of our climate change strategy should to maintain old houses that are already the emphasis should be on maintaining and improving existing housing stock as well as increasing with new housing (with emphasis on green building standards), and there is an added case for increasing investment in heritage, and grants and incentives for this purpose 4. And a further matter - considering the energy powering our homes, buildings and businesses (stationary energy, 19.0% of emissions), much greater effort should be put into converting waste to energy. And using wood from exotic plantations. In this area the current use of pinus radiata as carbon sinks should be recognised more as a short term gain obtained growing these plantations. On maturity and harvest much of this wood is used for woodpulp and converted to short term use e.g. tissue paper. Furthermore, sawn timber from pine plantations needs to be tantalised i.e. impregnated with toxic chemicals to have obtain the durability necessary for building...so the emphasis should be on maintaining and restoring native bush (and ecosystems including wetlands) and so more enduring carbon sequestration, or planting hardwoods. We are also recognising now, the loss of carbon from soil loss and disturbance which comes from exotic plantation harvesting, and the increasing risk of fire for these plantations with the climate we are to expect over the next decades. If we preserve and protect our native ecosystems, we will protect ourselves. As with so many things, solutions can be found in nature....	

NEW ZEALAND COMMUNITIES FOR CLIMATE PROTECTION

Communities for Climate Protection – New Zealand

Actions Profile 2009

ICLEI Local Governments for Sustainability

Ministry for the Environment
Manatū Mō Te Taiao

Contents

Communities for Climate Protection® – New Zealand (CCP®-NZ) is a New Zealand Government initiative delivered by ICLEI Oceania. ICLEI Oceania is the regional secretariat for ICLEI – Local Governments for Sustainability (ICLEI), which was founded in 1990 as the International Council for Local Environmental Initiatives. The CCP-NZ Programme is part of ICLEI's international Cities for Climate Protection Campaign.

Wellington City Council, New Zealand, hosted the CCP-NZ National Programme Office from 2007–2009. The CCP-NZ Programme has been assisted with funds from Genesis Energy for activities and forums, and funds from Civic Assurance for the CCP-NZ Intern Programme.

For further information contact: ICLEI Oceania, Level 5, 267 Collins Street, Melbourne VIC 3000 Australia, Phone: +61 (0) 3 9639 8688, Fax: +61 (0) 3 639 8677, Email: oceania@iclei.org, Web: www.iclei.org/oceania.

Communities for Climate Protection® – New Zealand: A New Zealand Government initiative delivered by ICLEI Oceania.

Executive Summary

Amid all the white noise surrounding climate change, local government councils have shown significant community leadership through activities that contribute to the abatement of greenhouse gas emissions. Thirty-four councils, covering 83 per cent of the New Zealand population, joined the Communities for Climate Protection® – New Zealand (CCP®-NZ) Programme between 30 June 2004 and 30 June 2009.

Measures that result in energy conservation, renewable energy, sustainable transport, waste reduction, and more sustainable living are measures that reduce greenhouse gas emissions.

The 34 councils in the CCP-NZ Programme are committed to reducing their (corporate) emissions and their communities' emissions. They are following a quantifiable approach with a systematic process marked by the achievement of milestones.

The effect of individual actions can be measured and the cumulative impact of these actions shows that local government can make, and indeed, is making, an important contribution to reducing the national greenhouse gas emission footprint.

The total of reported and quantifiable emission reductions from CCP-NZ council activities, since councils' inventory base-year to 30 June 2009, has been conservatively calculated to be more than 400,000 tonnes CO_2-e. This is at least 133,300 tonnes carbon dioxide-equivalent (CO_2-e) per year that is now being abated.

This is using average electricity emissions factors as agreed by the Ministry for the Environment (see Appendix 3 for a discussion on average and marginal emission factors).

Using marginal electricity emissions factors, councils have reported an accumulation of more than 487,000 tonnes CO_2-e of emissions reductions up to 30 June 2009. This is the total of reported and quantifiable emissions reductions from CCP-NZ councils' activities since their inventory base-year. On this marginal emission factor basis the annual total of emission reductions has reached at least 208,000 tonnes CO_2-e per year, and this rate is growing steadily.

Over the course of the Programme, ICLEI Oceania used its international reach to share experiences, best practice, and technical know-how.

ICLEI Oceania used its international standing to develop protocols for local government greenhouse gas emissions abatement.

Technical developments included the creation and publication of the new International Local Government Greenhouse Gas Emissions Analysis Protocol, and a New Zealand Supplement to the International Protocol.

ICLEI Oceania also worked with New Zealand councils to develop the Carbon Neutrality Framework for Local Government, based on the International Protocol, and this is being adopted across Australasia and beyond.

The sharing of council experiences across New Zealand has been highly valued. ICLEI Oceania staged several events to facilitate CCP-NZ networking and the exchange of information and to acknowledge councils' progress. These events included two national CCP-NZ Forums, 10 CCP-NZ Recognition Events, technical forums, public seminars, workshops, and international forums (see Box 1).

At ICLEI Oceania's Australasian conference *Accelerating Now!* CCP mayors from Australia and New Zealand launched the Australasian Mayors Council for Climate Protection.

There are many areas of existing local government operations and practice that can be modified or re-designed to make significant improvements to energy conservation or energy efficiency, and result in financial savings while achieving reduced usage of scarce resources. These changes should also improve the local environment and reduce emissions.

This report showcases councils' progress and actions. It reiterates the strong business case for greenhouse gas abatement activities where emissions are costs to councils, while reductions (from energy efficiency and waste reduction) produce savings.

Councils have reported significant reductions in greenhouse gas emissions from the utilisation of landfill gas and major savings in the use of building electricity energy after changing office or street lighting technology. There have also been savings from the installation of renewable energy technologies including photovoltaics and micro-hydro or wind turbines.

The challenge now for councils is to intensify their efforts to achieve even greater corporate and community emissions reductions.

The efforts of all councils in the CCP-NZ Programme are to be commended. This report demonstrates their work and its value, and offers ideas for other councils to consider.

1 The Communities for Climate Protection – New Zealand Programme

Councils and the CCP-NZ Programme

Councils play a crucial, grassroots role within their communities, so local government work on climate change is instrumental in providing community leadership, reflecting public concerns, and implementing government policy.

During 2004–2009, the Ministry for the Environment worked with local government on climate change by supporting the CCP-NZ Programme. ICLEI – Local Governments for Sustainability delivered the Programme through its Oceania Secretariat.

The CCP-NZ Programme provided a strategic framework[1] within which councils determined the actions to take that reduce greenhouse gas emissions in their (corporate) activities and their communities' activities.

CCP-NZ assisted councils to identify measures to reduce greenhouse gas emissions such as:

- saving energy, particularly from energy-management initiatives, and by promoting renewable energy
- increasing sustainable transport options
- enhancing urban design and facilitating local mobility
- reducing emissions from landfills
- supporting the adoption of low-carbon and low-energy technologies.

Once a council committed to becoming a CCP-NZ participant, it started to work towards completing five milestones.

- Milestone 1: Conduct a greenhouse gas emissions inventory, analysis, and forecast.
- Milestone 2: Set emissions reduction goals.
- Milestone 3: Develop a local action plan to achieve these goals.
- Milestone 4: Implement and quantify the benefits of policies and measures in the action plan.
- Milestone 5: Monitor progress towards the reduction goal.

Measuring abatement – emissions analysis protocols

ICLEI worked with an international advisory group to develop the International Local Government GHG Emissions Analysis Protocol.[2] The protocol provides guidelines to assist local governments to quantify the greenhouse gas emissions from their internal operations and from the communities within their municipal or geopolitical boundaries.

By developing common conventions and a standardised international approach, ICLEI seeks to facilitate comparisons between councils to ensure tangible reductions in greenhouse gas emissions are achieved.

The New Zealand Supplement to the International Protocol describes how the principles outlined in the protocol are to be implemented in New Zealand. It reflects the requirements of the New Zealand context and the Ministry for the Environment's Guidance for Voluntary, Corporate Greenhouse Gas Reporting, but is specifically focused on local government.

Carbon neutrality framework for local government

Many organisations are advocating carbon neutrality, and some councils are keen to lead their community by example. However, there is no single independent global standard for carbon neutrality that can be used to support a claim of neutrality.

ICLEI Oceania, through the Australasian Mayors Council for Climate Protection – New Zealand (AMCCP-NZ), developed a Carbon Neutrality Framework for Local Government following consultation with all councils in New Zealand. This established an independent standard to define the concept and support a claim of carbon neutrality. The framework's publication on the CCP-NZ website has been welcomed with feedback from around the world. In New Zealand, Wellington City Council has adopted this framework as an appropriate basis for documenting its transition to a carbon neutral city.

The framework describes the parameters of carbon neutrality frameworks established by local governments. It is important that any proposal for carbon neutrality be considered within the context of the policy environment created by other spheres of government. In particular, the move toward emissions trading in both Australia and New Zealand may affect approaches to carbon neutrality.

[1] The standardised and internationally recognised CCP methodology is described in Appendix 1.

[2] For publications and reports, including the Protocols see the CCP-NZ website: www.iclei.org/index.php?id=9203.

Box 1 **Forums, workshops and events**

Council staff and elected members repeatedly emphasise how highly they value meeting local government colleagues and stakeholders and having access to global networks. Focused forums and workshops build momentum and support and facilitate networking and the exchange of information. Sharing knowledge and skills is an essential feature of how ICLEI works.

CCP-NZ National Forums 2006 and 2008

Each of the national CCP-NZ forums held in Auckland (2006) and Hamilton (2008) drew over 100 participants from about 30 CCP-NZ councils and other stakeholders. Keynote speakers included the Minister Responsible for Climate Change Issues, Ministry for the Environment management, ICLEI Oceania executive officers, and the international ICLEI Secretariat. Participating stakeholders included representatives of *Local Government New Zealand*, the Ministry for the Environment, the Energy Efficiency and Conservation Authority (EECA), councils that had been part of EECA's EnergyWise Councils Partnership, the New Zealand Business Council for Sustainable Development, and others.

Workshops covered topics such as generating support for local climate change action, establishing action on climate change, and working with local business.

CCP-NZ Recognition Events

Ten CCP-NZ Recognition Events showcased councils' progress. Events were held in Auckland, Hamilton, Rotorua, Wellington, Christchurch, Dunedin, and Melbourne. An event was held during each *Local Government New Zealand* conference in 2004–2008.

Australian local government forums

ICLEI Oceania has made CCP-NZ councils welcome at all of its Australian Sustainability Forums. CCP-NZ council staff and elected members have availed themselves of these opportunities, attending forums in South Australia, Victoria, New South Wales, and Queensland.

Accelerating Now!

ICLEI Oceania's *Accelerating Now!* conference in May 2007 in Melbourne was a major event for Australasian local government.

The conference brought together over 450 representatives of local authorities working on ICLEI Oceania campaigns, especially CCP, from both sides of the Tasman Sea. The 55 conference attendees from New Zealand included seven mayors and three regional council chairs, as well as a significant number of senior managers, representing 21 councils. Representatives from the Ministry for the Environment, *Local Government New Zealand*, the New Zealand Business Council for Sustainable Development, Genesis Energy, and Beacon Pathway also attended the conference.

Public forums

ICLEI Oceania organised a public forum, *Climate Change and Us*, for local government and the community before the international *Climate Change and Governance* conference in March 2006 in Wellington.

Distinguished British geologist and former chair of Shell Lord Ron Oxenburgh chaired the forum. Dr Kevin Trenberth, head of the Climate Analysis Section, United States National Centre for Atmospheric Research, and Wayne Wescott, ICLEI Oceania's chief executive officer addressed the forum. More than 300 people attended.

The public workshop *Renewable Energy Uptake in New Zealand Cities: The Vision and Barriers* was organised by ICLEI Oceania in conjunction with the New Zealand Centre for Sustainable Cities and the School of Government, Victoria University of Wellington.

The workshop was held on 1 April 2009 and led by international renewable energy expert Dr Eric Martinot and CCP-NZ local government politicians and officers.

Workshops and seminars

The *Energy Management Forum for Local Government* was held in Huntly on 3 April 2008. ICLEI Oceania organised this forum in collaboration with Genesis Energy. The forum comprised a full day of technical presentations and workshops on energy management.

Forum attendees included customer energy managers from Genesis Energy and 35 council officers representing 24 councils (20 being CCP-NZ councils). These officers were policy analysts, energy managers, and property managers.

This forum was a major opportunity to encourage the take-up of opportunities for energy efficiency in local authorities.

International forums

ICLEI Oceania worked closely with the CCP-NZ mayor who the Ministry for the Environment funded to represent New Zealand local government at the *Fourth Municipal Leaders Summit on Climate Change* in Montreal, Canada in December 2005.

ICLEI Oceania also worked closely with two CCP-NZ councils that attended the *ICLEI World Congress* in Cape Town, South Africa in March 2006, and with representatives of another CCP-NZ council attending the local government gathering of the *United Nations Climate Change Conference* in Bali in November 2007.

Australasian Mayors Council for Climate Protection

www.climatemayors.com

Composition of AMCCP

The Australasian Mayors Council for Climate Protection (AMCCP) is a non-partisan body of mayors and chairs working together on climate change action.

The AMCCP is similar to local government leadership groups around the world, such as Mayors for Climate Protection (United States), the London Climate Change Partnership, signatories to the Covenant of Mayors, and the World Mayors Council on Climate Change.

Establishment of AMCCP

The AMCCP was established as an advocacy body for councils participating in CCP Australia and CCP-NZ. ICLEI Oceania provides Secretariat support.

Local government leaders from Australia and New Zealand launched the AMCCP at ICLEI Oceania's *Accelerating Now!* conference in Melbourne in May 2007.

The AMCCP Coordinating Committee includes six New Zealand mayors.

Aims of AMCCP

With the assistance of the ICLEI Oceania Secretariat, and with links to influential international bodies, the AMCCP will:

- advocate an agenda for accelerated action on climate change
- forge innovative partnerships
- identify opportunities for collective action
- broaden the base of technical expertise and on-the-ground experience available to participating CCP councils.

Structure of AMCCP

In New Zealand, all mayors and chairs interested in promoting action on climate protection may join the AMCCP. As of 30 June 2009, AMCCP comprised the mayors and chairs of the 34 councils in the CCP-NZ Programme and the 238 mayors of CCP councils across Australia.

AMCCP-NZ

The first meeting of AMCCP-NZ was held in Rotorua in July 2008 at the time of the *Local Government New Zealand* conference and was open to all New Zealand mayors. AMCCP-NZ's activities have included participating in AMCCP teleconferences and making a submission on the Emission Trading Scheme Review.

2 Corporate and Community Emissions and Reductions

This section provides statistical data from the base line inventories of councils. Data from all 34 CCP-NZ corporate and community base-year inventories was extracted from the ICLEI Greenhouse Gas Analysis software for this analysis. This database includes energy used by those councils that have operations in the agriculture sector, but it **does not** include agricultural emissions (e.g. methane and nitrous oxide emissions from animals), nor forestry offsets.

The word "community" in this report means the residents, commerce, and industry within the council's land boundaries.

The expression "corporate emissions" in this report means the council's operational emissions.

Council corporate emissions are a subset in the council's community emissions.

Analysis of corporate and community base-year data provides an interesting snapshot of emissions and energy that local government and its communities use in New Zealand.

Corporate emissions

From summated base-year figures for the 34 councils, of the 146,247 tonnes CO_2-e total corporate emissions, the building sector accounts for 42 per cent (see Graph 1 and Table 1).

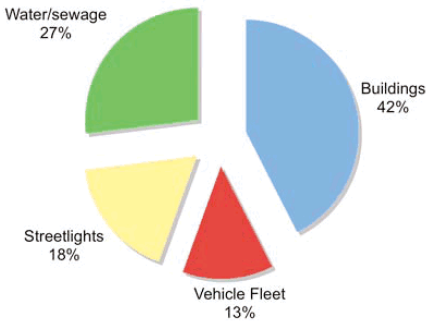
The building sector includes recreation centres, which are the largest 'building' energy users, particularly in the larger urban councils. The water and sewage sector accounts for 27 per cent, streetlights 18 per cent, and vehicle fleets 14 per cent of total corporate emissions.

Emissions from corporate waste are only a small proportion of total corporate emissions (less than 1 per cent). However, as less than half the CCP-NZ councils had undertaken a corporate waste audit, the data available was insufficient and hence has been excluded from this analysis.

Some councils have installed worm-farm facilities for staff food-scrap waste, reducing the emissions from their corporate waste and providing an inspirational educational facility for staff and school trips through the council offices. According to the limited corporate waste data available, scrap paper contributes up to 80 per cent of corporate waste emissions, especially in smaller councils where recycling is not a viable alternative.

The proportions of council corporate emissions produced from various energy sources are presented in Graph 2.

Graph 1 - Corporate Emissions by Sector



Graph 2 - Corporate Emissions by Energy Source

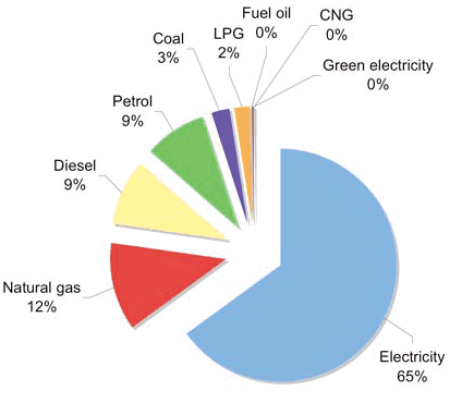


Table 1	Corporate base-year emissions & energy by sector (excluding waste & other)	
Sectors	**Greenhouse gas emissions (tonnes CO_2-e per year)**	**Energy (GJ per year)**
Buildings	62,862	1,035,376
Water/sewage	38,848	678,341
Streetlights	25,192	444,711
Vehicle fleet	19,345	308,029
Totals	146,247	**2,466,457**

Analysis by corporate sectors

The summation of the total "consumer" energy councils used for corporate purposes provides an interesting snapshot of local government.

The proportions of the 2,466,457 GJ of total consumer energy used in the buildings, water and sewage, streetlights, and vehicle fleet sectors are similar to the proportions for emissions from these sectors because waste and other emissions sources are small (see Graph 3). As is usual with statistics produced from totals, the proportions of energy and emissions for these sectors vary greatly for individual councils. For example, the water and sewage sector is responsible for up to 80 per cent of energy and emissions from one council, although the average for all CCP-NZ councils is only 25 per cent.

Data from Watercare Services on water and wastewater energy and emissions covering all councils in the Auckland region has not been included (except that Waitakere City included its share in its inventory data).

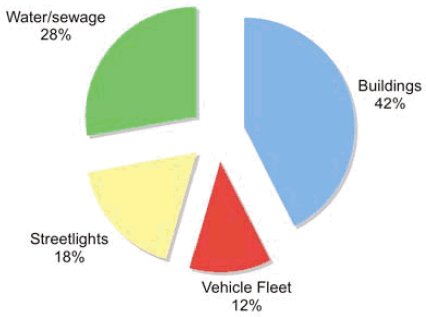
Analysis by energy source

The analysis by energy sources shows that electricity is the dominant energy form for council corporate purposes, accounting for around 66 per cent of all energy supplies councils use. Natural gas provides a further 14 per cent of total energy (see Graph 4).

The total amount of coal burnt by the 34 CCP-NZ councils has decreased significantly since the base-year inventories. Use of wood energy (pellets) has grown recently, although none was recorded in council corporate base-year inventory data.

The cost of the total annual corporate energy that CCP-NZ councils purchased exceeded $64 million. This cost would be much higher today, because electricity and petrol and diesel costs have risen dramatically over the last five years.

Graph 3 - Corporate Energy Usage by Sector



Graph 4 - Corporate Annual Energy Usage by Source

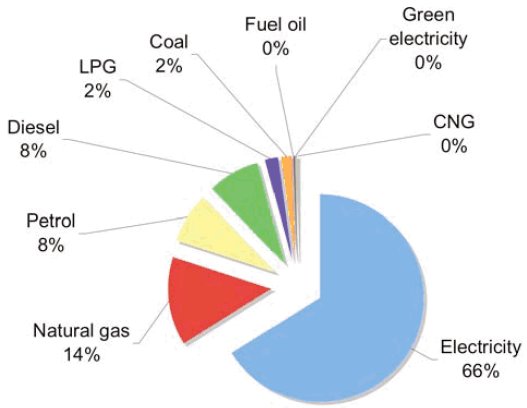


Table 2	Corporate base-year emissions & energy by source (excluding waste & other)	
Source	**Emissions (tonnes CO_2-e/year)**	**Energy (GJ/year)**
Electricity	94,919	1,614,655
Natural gas	17,407	350,852
Diesel	13,595	200,985
Petrol	12,806	192,309
Coal	3,798	42,012
LPG	3,191	53,020
Fuel oil	531	7,239
CNG	0	1
Green electricity	0	5,384
Total	**146,247**	**2,466,457**

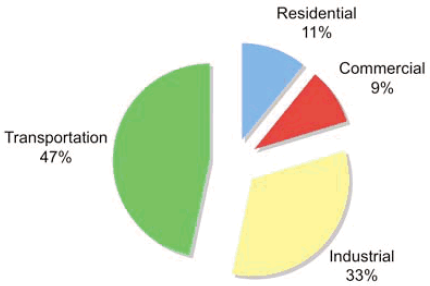
Community emissions

ICLEI Oceania supplied CCP-NZ councils with community inventory data based on the 2001 census population, occupations, and vehicle registrations in each council area. This data excluded agricultural and forestry emissions and offsets, in accordance with a Ministry for the Environment decision. The data was sourced from the Ministry for Economic Development, Energy Efficiency and Conservation Authority, and Ministry of Transport. ICLEI Oceania analysed the data and produced a set of community data (or "proxy data") for each council geographic area. This community data allowed each council to assess and review the size of its community's footprint and identify community sectors that the council could more easily influence.

The community (2001) energy and emissions data for the 34 councils is presented in Graphs 5–7 and Table 3. Emissions are analysed by sector and energy source. This is community data, so the proportions of emissions allocated to each sector reflect the breakdown of energy emissions by sector for the whole country. Waste data for New Zealand for the 2001 base-year broken down to a council level was not available from the Ministry for the Environment. Some councils entered data from their own records, but it was insufficient for accurate analysis.

Many CCP-NZ councils actively help their community with waste reduction, green waste diversion, and recycling programmes, and community waste emissions have been falling.

Graph 5 - Community Emissions by Sector (Excluding waste and agriculture) All CCP-NZ Councils



Graph 6 - Community Emissions by Energy Source All CCP-NZ Councils

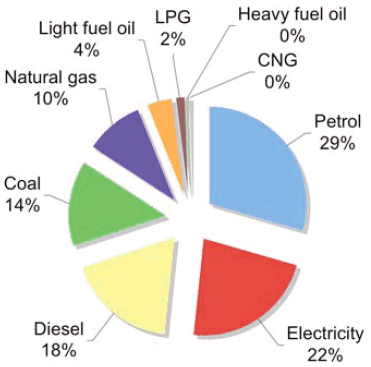
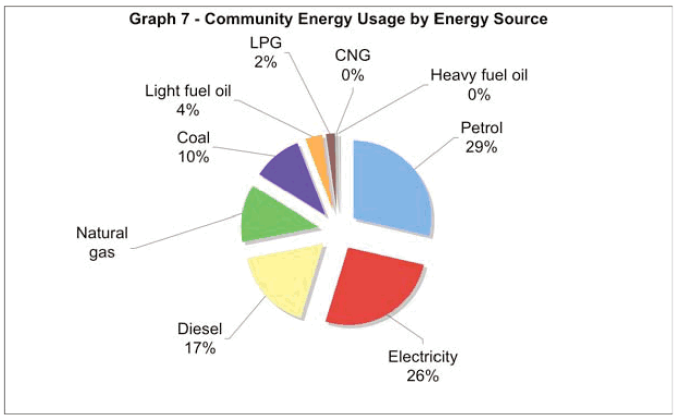


Table 3	Community emissions and energy data (all CCP-NZ councils)			
Source	**Emissions (tonnes CO_2-e)**	**Emissions (tonnes/head per year)**	**Energy Usage (GJ per year)**	**Energy (GJ/head per year)**
Petrol	6,427,811	1.99	96,513,654	29.94
Electricity	4,890,066	1.52	88,022,046	27.30
Diesel	3,980,320	1.23	57,937,688	17.97
Coal	3,082,857	0.96	35,088,626	10.88
Natural gas	2,144,802	0.67	40,588,322	12.59
Light fuel oil	882,938	0.27	12,178,452	3.78
LPG	347,798	0.11	5,758,223	1.79
Other	103,417	0.03	1,386,481	0.43
Total	**21,860,009**	**6.78**	**337,473,492**	**104.68**



Emissions reductions (corporate and community) achieved by CCP-NZ councils

ICLEI Oceania analysed corporate and community emission reductions achieved from CCP-NZ council activities initiated after the council inventory base-year. The results show that local government in New Zealand has achieved substantial emissions reductions from their corporate and community activities.

All quantifiable community emissions reduction activities reported by CCP-NZ councils relate to the reduction of emissions from council owned landfills. Following publication of the new International Greenhouse Gas Protocol it was decided to report all of these projects as "corporate" emissions reductions. (See the discussion on waste emission reductions below.)

There are two sets of reduction figures included in this report. This is because electricity emissions reductions have been calculated in two ways in New Zealand. See further information on electricity emissions factors below and in Appendix 3.

Based on the results reported so far, there remains significant potential for more emissions reductions from the local government sector.

Results using average electricity factors

Using the average electricity emissions factors, the annual emissions reductions reported and quantified following CCP-NZ council activity totals more than 133,300 tonnes CO_2-e per year.

On this emission factor basis, the total of reported and quantifiable emissions reductions resulting from CCP-NZ council activities since councils' inventory base-years through to 30 June 2009, is now more than 400,000 tonnes CO_2-e.

Results using marginal electricity factors

Using marginal electricity emissions factors to calculate electricity efficiency emissions reductions, the total annual emissions reductions from CCP-NZ council activity increases to at least 208,000 tonnes CO_2-e per year.

On this marginal emissions factor basis, the accumulated total of emissions reductions since council base-year up to 30 June 2009 is at least 487,000 tonnes CO_2-e.

Electricity emissions factors

ICLEI Oceania normally only reports emission baselines and emission reductions using annual average electricity emissions factors.

However, the emission reduction results for some projects reported by CCP-NZ councils and included in this report have already been reported in different fora by other authorities, such as EECA or the Ministry for the Environment.

Also some of these council projects have been awarded emission reduction credits by the Government. In these cases, reductions in emissions by electricity efficiency projects or by using renewable energy sources for the generation of electricity have been calculated using a marginal electricity emissions factor. More information on electricity emissions factors is included in Appendix 3.

Waste emissions reductions

Waste dumped into landfills was originally considered as a source of "community" emissions. Waste data entered into ICLEI's Greenhouse Gas Analysis software was entered as "community waste" data.

Publication of the new International Local Government Greenhouse Gas Emissions Analysis Protocol changed this for emissions from a landfill owned or controlled by a council.

These emissions are now considered as 'government' (i.e. corporate) scope 3 emissions.

Because many councils are using landfill gas reduction projects to replace corporate energy sources the continued assessment of these emissions as "community" was problematic. For instance some councils use the landfill gas for generation of electricity, which then replaces the purchase of electricity from the grid.

For this Actions Profile, emissions reductions from energy efficiency, green energy generation, or conversion of landfill gas (methane) into carbon dioxide in a generator, boiler, heater, or by burning in a flare have not been separated into Corporate and community, but been added together and recorded as "total emissions reductions".

Community emissions reductions

The impacts of the many community sector activities councils undertake or promote are small and often difficult to quantify. Therefore, the only community projects counted in this report relate to the conversion of landfill gas to a useful energy source or converted to CO_2.

Emissions reductions from other community projects, such as council support for the retrofitting of low income and pensioner housing, have not been included in this analysis because of lack of reliable data on numbers of conversions undertaken with council support.

Accordingly, the reported total impact from council activities is considered to be a conservative estimate.

Government agencies understand the difficulty of quantifying the impacts of community emissions reduction projects. For instance, EECA acknowledges that it is difficult to identify analysis and quantification mechanisms in the community sector, such as for measuring household retrofit energy efficiency and climate change impacts. The "savings" achieved by retrofitting a particular household vary with the specific house and the behaviour of the specific residents. Therefore, EECA accepts that it can assess retrofitting only by using average impacts.

3 CCP-NZ Councils – Corporate Sector Actions

Buildings

Buildings owned or managed by councils can account for a very large portion of councils' corporate emissions. Administrative buildings, swimming pools, recreation centres, and libraries are generally large buildings that expend large quantities of energy on heating and cooling, lighting, electronic equipment, and hot water systems.

While retrofits of existing buildings can achieve substantial reductions in energy usage, the largest gains are achieved through the development of new facilities using advanced "green building" methods.

Local government has become a strong supporter for promotion of green buildings with the New Zealand Green Buildings Council. Partnerships between local government, architects and building owners include trials of green building techniques, such as greenroof applications, to demonstrate the benefits.

Many CCP-NZ councils have taken, or are exploring, steps to reduce energy use by retrofitting or redesigning building energy using systems. Such steps are saving at least 1,825 tonnes of CO_2-e from being emitted each year.

Lighting upgrades

Retrofitting light fixtures to energy-efficient models can have high up-front costs for large buildings, but the money saved on electricity bills can pay these costs off in just a few years. Numerous councils have made lighting alterations, which saved money and emissions.

Auckland Regional Council made significant savings by upgrading its central city office with 1,600 energy-efficient light fittings, including a sensor system to dim or turn off lights when unneeded. The system uses 14.5 per cent of energy compared with the old system, resulting in savings of about 561,000 kWh, $128,000, and 391 tonnes of CO_2-e per year (as published on council website). The monetary savings will pay back the initial EECA loan in less than five years.

Recreation and aquatic centres

The cost of running aquatic centres, one of the largest users of energy, has been justified by the perceived high value communities place on such facilities. However, more councils are exploring ways to keep the community value while drastically lowering their carbon footprint. Swimming pools are typically energy-hungry, and not just for water heating. The pool hall air is maintained at 2 degrees above the water temperature to minimise the pool's surface evaporation loss.

In Dunedin City Council's Moana Pool Complex, the relative humidity was being controlled through the introduction of external air and the extraction of the warm moist air to outside. That process was energy intensive with a loss of energy calculated at 330 kW, and a gas energy cost of $161,000 per year (as published on council website).

The council installed a 450 kW heat pump to recover energy from the extracted air that is currently going to waste, utilising this heat to reduce boiler gas use for pool heating, and installed an additional air handler.

The air handler extracts air from the pool hall, allowing the recovery of the "lost energy" (330 kW). Additional compressor energy (120 kW) provides 450 kW of pool heating through plate heat exchangers distributed to the showers and pool water of the main, lap/dive, learners, and leisure pools.

Hamilton City Council reduced unnecessary energy usage by installing new, smaller, variable-speed-drive pumps and smart controls at Waterworld. The highly efficient new pumps use less power while purifying the whole pool. Connected to a flowmeter, the pumps measure purified water going into the pool, improving water quality after high-use periods. Each year, this new system saves around 50 tonnes CO_2-e, and annual electricity costs have fallen from $7,000 to $2,700 (as published on council website).

Box 2 **Case study: Waitakere City Council's green building developments**

Council headquarters

Waitakere City Council moved its headquarters to Henderson's town centre, carefully choosing a location near the railway station and bus terminal to optimise staff travel options. Architects and engineers incorporated numerous elements of green building technology into a council facility designed to be environmentally sustainable.

The six-storey council building has an administration wing and a civic wing. The administration wing is designed with a passive solar energy construct, so daylight can reach deep into the interior, a low-energy ventilation system, and energy-efficient lighting. It also has solar water heating, a micro-wind turbine, a worm-composting farm, and intensive recycling facilities.

The "green roof" of the civic wing is alive with drought-tolerant plants. Rainwater collection and stormwater management, using swales and rain gardens, were included in the plans.

Rainwater collected from the roof supplies water features in the gardens and is used to flush toilets.

A Japanese garden sits near the civic building to quell noise pollution from the nearby trains and to offer staff a tranquil outdoor escape.

The council oversaw the development of cycle and walkways to encourage staff to leave their cars at home. For vehicle commuters, priority parking is given to those who car-pool.

Leisure centre and library

Green buildings not only reduce the council's carbon footprint, but also save it money every year. With sustainability at the forefront in its operations, the council incorporated green building elements into the new Massey Leisure Centre and Library.

Green elements in the library included an 8.16 kW photovoltaic system on the roof, which generates an average of 11,090 kWh of electricity per year.

Rainwater is collected from the roof and filtered for the showers, toilets, and taps (which are all low flow).

The carpark is made of permeable pavers, which allows water to soak into the ground, cleansing it before it gets into streams and slowing it to help prevent floods. The abundance of cycle racks encourages active transportation.

Cooling and ventilation are controlled by natural means with the assistance of mechanical fans. Underfloor ducts help to cool the air before circulating it, and concrete floors store heat from the sun, then release it slowly. The building is well insulated to contain heat in the winter and maintain coolness in the summer. Two walls in the meeting room were built using earth bricks, which have good thermal qualities.

Energy-efficient lighting is fitted throughout the building and, along with adjustments to the gas services to improve efficiency, the council has achieved a 26,120 kWh (8.62 per cent) reduction in usage (as published on council website).

Water and sewage

The water supply and sewage (waste-water) pumping and treatment sector is responsible for more than 25 per cent of corporate emissions from CCP-NZ councils. This highlights this sector as one where savings should be sought.

Studies and pilot programmes around the world have documented the potential for large savings of emissions through reduced water consumption and by not treating all water to drinking-water quality if not required. Significant challenges need to be addressed to implement such behavioural and infrastructure changes.

Councils report that public water-conservation promotional campaigns are usually only effective for short-period supply restrictions such as summer droughts. Such campaigns do not provide reliable longer-term efficiencies that reduce the need for new water supply infrastructure (e.g. dams and treatment systems). Behavioural change needs to be supplemented by technology-supported improvements.

ICLEI Oceania facilitated Milestone 3 workshops for council staff developing local action plans. Staff identified four solutions with significant potential for energy and emission reductions for this sector.

- Optimising pumping technology and controls, such as installing variable-speed drive pumps to work alongside fixed-speed drive pumps – often results in more efficient water supply and sewage systems.
- Installing water meters on customers' supply points – demonstrated to reduce domestic water use and wastage.
- Installing rainwater and greywater collection facilities for new buildings or subdivisions – attractive for councils with water supply problems, and rainwater tanks smooth the flow impacts from stormwater systems during high-rainfall events.
- Analysing electricity tariffs for water and sewage pumping – significant cost savings.

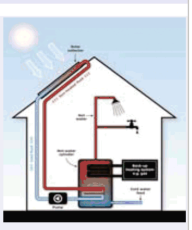
CCP-NZ councils' actions to reduce emissions from the water and sewage sector are resulting in more than 1,700 tonnes CO_2-e being saved annually.

Beacon Pathway studied water supply energy and emissions issues, using input from four CCP-NZ councils. Its findings will be published later in 2009.

Box 3 **Nelson City water under the spotlight**

Nelson City Council installed water metering on every property progressively from 1999. Since metering became operational, the highest summer peak water flow has dropped more than 16 per cent to under 35,000 cubic metres per day and the average summer peaks by over 37 per cent.

The average water usage in Nelson has fallen to under 160 litres per person per day, but pressure for further reductions is being maintained. The council is reviewing the efficiency of existing water supply equipment and the potential for demand-management initiatives approaches to avoid having to invest in new water-supply dams.



Street lighting

More than 330,000 streetlights are run for over 4,000 hours each per year across all councils. Street lighting consumes a significant amount of electricity and costs councils well in excess of $18 million per year.

With electricity being this sector's dominant energy source, emissions are strongly connected to the average annual emissions performance of the New Zealand electricity system. Emissions from this sector will drop significantly when New Zealand achieves a more sustainable and renewable electricity supply (i.e. the Government's renewable electricity target of 90 per cent by 2025).

For CCP-NZ councils, emissions from street lighting account for more than 16 per cent of council corporate emissions. This makes this sector an area of considerable interest for council infrastructure staff seeking savings.

New Zealand councils have been undertaking trials of various technologies and techniques, such as solar and LED streetlights for walkway lights and by upgrading traffic signals to LED lights or using lower wattage bulbs. These efforts have led to a minimum of 248 tonnes CO_2-e abated every year.

Emissions from street lighting in locations where diesel-powered off-grid electricity is used are even higher, so projects such as Southland District Council's move to install renewable electricity generation on Stewart Island will result in even more greenhouse gas savings.

There are many barriers to the implementation of savings in this sector that arise from the structure of the electricity system in New Zealand and the imposition of large fixed charges by network companies.

Councils in locations where the electricity network is still community-owned appear to achieve lower costs and this opens the door to the establishment of better public lighting partnerships with the electricity industry.

Australian councils have had the benefit of a programme that shared street-lighting expertise through the Sustainable Public Lighting Toolbox. Some of the material on the ICLEI Oceania website is applicable to New Zealand councils (www.iclei.org/index.php?id=spl_home). Specific information on options for improvements to street-lighting and collective technology trials for New Zealand councils are expected to be available shortly through a New Zealand Electricity Commission–funded contract.

Refer to the Commission's website for more information on these street lighting developments (www.electricitycommission.govt.nz).

Box 4 **Solar lights trial – Kaikoura District Council**

After a study showed that 38 per cent of Kaikoura District Council's corporate emissions came from energy used to operate streetlights, the council trialled solar-powered LED streetlights in two locations. Solar-powered streetlights are more eco-friendly and offer a smaller life-cycle cost than grid-electricity powered lights. They were also found to have a well-focused light stream with less light spill, making them desirable in areas where a reduction in light spill is required.

By promoting this new environmentally friendly technology, Kaikoura District Council has raised awareness of alternative energy options. The council has now ordered additional solar lighting for replacement fittings and for areas where establishing mains power would be expensive.

Vehicle fleet

The number of vehicles on the roads is increasing; almost all contributing toxic fumes to air pollution and using petrol, a non-renewable resource. Councils participating in the CCP-NZ Programme have taken a sharp look at their vehicle fleets. Many councils have audited their fleets, which has led to action to improve efficiency.

Franklin District Council purchased more efficient vehicles, as did Waitakere City Council, which replaced 42 of its fleet with hybrid and smaller vehicles such as the Toyota Prius and Yaris.

Rodney District Council improved its electronic booking system to encourage vehicle pooling when possible. Other councils are clustering site inspections for more efficient vehicle usage and to lessen the number of trips.

Many councils have implemented new purchasing policies to consider biofuels and emission figures in future purchasing decisions, are trialling hybrids, and are reducing the number of vehicles in their fleets.

Bicycle fleets

Council-owned vehicles are often used for short distance trips to city meetings, building inspections, monitoring permits, and so on. Vehicles emit more emissions when the engine has not fully warmed up, so by using a bicycle for short trips, those emissions are avoided. Active transportation is an efficient mode of travel and perfect for short-distance trips. Numerous councils have added bicycles to their corporate fleet for staff to use, encouraging active transportation rather than use of carbon-emitting vehicles.

Auckland City, Auckland Regional, Christchurch City, Papakura District, Nelson City, North Shore City, Rodney District, Waitakere City, and Wellington City Councils and Environment Canterbury, have introduced a bicycle fleet to promote sustainable and active transportation and abate air pollution and CO_2 emissions.

Employee commute

Most people commute between work and home and contribute indirectly to carbon emissions. Many councils have undertaken an employee commute survey and analysed staff travel methods to calculate the tonnes of carbon emissions and gigajoules of energy consumed. Data from the surveys has led to councils looking in depth at commuting options, particularly more sustainable transport forms. Actions have included travel plans, inter-office carpooling schemes, and priority parking for energy-efficient vehicles. Councils have upgraded facilities with showers and secure storage areas for people wishing to use active transport methods such as cycling, walking, and running.

Many councils have explored and/or implemented upgrades to their public transport systems, allowing for more accessible and/or more frequent transportation to urban centres. Councils such as Western Bay of Plenty District Council have turned their Workplace Travel Plan into a friendly competition to see which department has the largest group of sustainable commuters.

Box 5 Employee Commute Survey – Environment Waikato

Environment Waikato conducted the Employee Commute Survey for its Workplace Travel Plan, which will be tied in with its Milestones 2 and 3 corporate goal and local action plan. A workplace travel plan encourages staff to choose eco-friendly ways of commuting. Critical to its success is a "whole of organisation" approach, ensuring "smart travel" gradually becomes a natural part of the organisation's culture for staff and visitors. The survey showed many staff members drove their car alone, but 67 per cent of these commuters were prepared to carpool. Overall results showed that 31 per cent of all staff travelled to work sustainably (e.g. bussing, biking, or walking) and a further 22 per cent of all staff used carpools.

Box 6 Workplace Travel Plan – Waitakere City Council

Waitakere City Council began developing its Workplace Travel Plan in 2006 to change employee transport behaviour. A significant reason for moving the council's headquarters to Henderson was proximity to public transport, minimising reliance on personal vehicle commutes. Immediately, a 10 per cent reduction in single-occupancy travel to and from work occurred. The council also upgraded and created cycle and walkways for safe active transportation and improved the public transportation system. The Sustainable Urban Planning Council is implementing plans for neighbourhoods, improving access to local jobs and services and sustainable methods of transportation. The Hobsonville neighbourhood development alone has reduced car travel by half.

Waste

Landfill waste releases toxic methane gas as it breaks down. Councils, including Christchurch City, Palmerston North City, and Wellington City Councils, have established landfill gas electricity generators that capture methane and convert it into usable energy.

Several CCP-NZ councils have conducted corporate waste audits to determine what waste is being produced. Councils have used the information to set up recycling systems to divert waste from landfills.

In the past few years, many waste-minimisation programmes have been initiated, including intensive recycling measures, food waste separation in council buildings with worm farm or industrial-composting set-ups on council premises.

Much information is being disseminated on reducing, reusing, and recycling practices.

Waste minimisation and landfill gas conversion is saving over 71,000 tonnes CO_2-e per year.

Box 7 **Landfill gas converted to energy – Christchurch City Council**

Methane gas from the Burwood landfill has been piped to the Queen Elizabeth II (QEII) Park swimming complex in Christchurch. It is used for heating and electricity generation. This project has reduced greenhouse gas emissions by around 40,000 tonnes CO_2-e per year and produced energy savings in excess of $1 million per year as well as the $3.5 million revenue from the sale of the emission credits (2008–2012), that helped fund the development and implementation of the Christchurch City Council's 2008–2018 Sustainable Energy Strategy for Christchurch.

After a drying process at the landfill site, the gas is piped 3.7 km underground to QEII Park. The gas fuels two boilers and a cogeneration plant, which produces electricity and heat.

Other benefits from the project include:

- sustainable reductions in electricity and LPG use – displacing 12.83 GWh of non-renewable energy every year
- energy savings in excess of $1 million a year – with the energy cost per visitor decreasing from $1 to 40 cents
- easier revegetation of the Burwood landfill site because the landfill gas that used to damage plant roots is now captured
- a gas-fired refrigeration plant installed as part of the gas treatment plant, as an alternative to an electrically driven plant, saves 0.3 GWh of electricity a year. (Details as published on the council website.)

Renewable energy

New Zealand is shifting towards renewable energy systems for direct energy usage and to produce electricity. Local government has a significant role to play, starting by supplying some of its own energy needs from bountiful, locally available, renewable sources.

Numerous councils in the CCP-NZ Programme have installed solar hot water systems at their facilities and support their communities to do the same by offering rebates and grants. Council-owned or contracted renewable electricity generation systems, such as landfill gas generators, solar photovoltaics, micro-hydro and wind turbines, are reducing carbon dioxide emissions by more than 30,000 tonnes per year.

South Waikato District Council has introduced solar hot water systems at the Tokoroa Pool Complex for shower water heating and expects to collect enough solar energy from the panels, to the equivalent of 18,400 kWh, that will cut the annual electricity bill by more than half.

Nelson City Council has launched its vision to become New Zealand's first "Solar City" by capitalising on its sunny climate. The council plans to assist 1,700 Nelson households install solar water heating systems over the next three years, and then plans to grow the scheme to cover 10,000 homes. Nelson is also planning to install a 90 kW mini-hydro system on the Maitai River near the water treatment plant, to save at least $15,000 of electricity per year.

Waitakere City Council generates electricity through solar photovoltaic panels and a wind turbine on the roof of its administrative building in Henderson. Southland District Council is partnering with local network company SIESA to trial solar and wind energy on Stewart Island to improve sustainability and reduce emissions from the Island's diesel-fuel generators.

Christchurch City Council has shown that as well as councils reducing energy use and saving money, they can also earn money from the same emission-reducing actions. The council has become the first New Zealand council to receive money, almost NZ$1 million for 2008, from the sale of carbon credits awarded under the Kyoto Protocol. These were mainly for the capture, burning, and use of methane gas from the Burwood landfill for heating the Queen Elizabeth II pool.

Many other CCP-NZ councils are investing in renewable energy systems. ICLEI Oceania believes local authorities have an important role to play in encouraging the development of renewable electricity generation projects at the local level to help councils reduce their corporate and community greenhouse gas emissions.

Box 8 **Landfill gas generator – Wellington City Council**

Wellington City Council and partner Todd Energy have installed a landfill gas electricity generator at the Southern Landfill. The generator, driven by a large combustion engine specifically designed to run on the landfill gas, converts the greenhouse gases (methane) being produced in the landfill into usable energy. This is expected to put 8 million kWh of electricity per year into the local network, enough to power 1,000 average Wellington households for a whole year. This generation converts methane to carbon dioxide, a much less atmospherically damaging greenhouse gas, but also avoids the release of between 1,600 (average) and 5,000 (marginal) tonnes of CO_2-e emissions per year from fossil-fuelled power stations connected to the electricity grid.

Photo courtesy of Wellington City Council.

Box 9 **Wind-generated electricity – Christchurch City Council**

In 2003, Christchurch City Council took another step to support its vision of a sustainable and renewable energy city. The council agreed to purchase all of the electricity generated by a prototype 500 kW wind turbine that local company Windflow Technology Ltd was about to install at Gebbies Pass. The projected generation of 1 million kWh a year would be sufficient electricity to power the council's civic offices.

This deal supported an innovative Christchurch-based company and fitted well with other council initiatives to support local business and job creation. Support for the project also achieved the purchase of zero-carbon renewable energy, support for a local business, creation of many new jobs in the Christchurch area, and the development of a new technology that was clean and eco-friendly.

The project has proven to be a success for the city and Windflow Technology. The company is now completing the installation of a 97-turbine wind farm near Palmerston North and is planning other wind farm opportunities.

See www.ccc.govt.nz/EnergyEfficiency/Projects/HarnessTheWind.asp or www.windflow.co.nz.

4 CCP-NZ Councils – Community Sector Actions

Introduction

Local government leaders are promoting corporate operations that reduce emissions within council and are working with their communities to help people shift to lower energy consumption choices. Councils are leading the action, preparing their communities through education programmes and workshops to be more sustainable and resilient.

Two of the many actions councils are taking are supporting and encouraging healthy home initiatives – adding insulation and modern clean-heat sources – and waiving the basic building consent fees for the installation of solar water heating panels.

Councils have a major role in investing safe routes for active transportation, walking and cycling throughout cities and upgrading public transport systems.

Mayoral Challenge – Bike Wise

February is Bike Wise month and in 2009 at least 12 CCP-NZ council mayors were reported to be out on two wheels, encouraging the community to follow suit and go for a bike ride.

The Mayoral Challenge is a fun competition for the title of Cycle Mad City and promotes cycling as a fun, healthy, and sustainable form of transport. Hundreds of people across the country cycled around their communities, with their local mayor leading the pack. New Plymouth District took the title away from Rodney District this year, but that could easily change next year as councils continue promoting active transportation as a sustainable and enjoyable mode of transport.

Earth Hour 2009

For one symbolic hour on Saturday 28 March 2009, 51 per cent of New Zealanders voted by switching off non-essential energy consumption. They joined over 4,000 cities and towns in 88 countries worldwide in WWF's third annual Earth Hour.

Logo courtesy WWF

Demonstrating commitment to climate change mitigation, 22 participant councils in the CCP-NZ Programme became "partner cities" in the WWF initiative. Councils turned off all non-essential council power, leading by example in mitigation action, and encouraging businesses and residents in their areas to "turn it off".

Councils planned actions such as community events and free outdoor concerts, distributed information about reducing consumption, hung lanterns in the main square, gave away native tree seedlings and tens of thousands of eco-bulbs, and more. Hamilton City residents saved 10.3 per cent of their electricity (26.45 megawatt hours) the largest tally in New Zealand. This council even hosted a "solar lounge" for the event, powered by solar photovoltaic panels, where people could come and find out about alternative energy generation.

Lights out at Hamilton council building

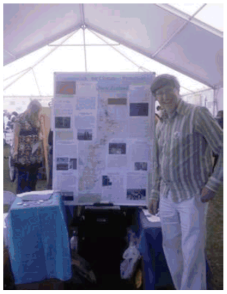
World Environment Day and Climate Days of Action

Wellington was the international host of World Environment Day on 5 June 2008. This global event is observed annually in over 100 countries. While CCP-NZ councils supported this with a variety of activities, Wellington City Council took a leading role in events promoting energy efficiency, alternative energy, forest conservation, and eco-friendly consumption. CCP-NZ councils supported this day again in 2009.

Photo courtesy Andy Morley-Hall

A Climate Day of Action has been held in December for the last three years to align with United Nations Framework Convention on Climate Change conferences. Many CCP-NZ councils worked with community groups on climate change education and symbolic actions on this day.

Wellington City Council supported a successful event on 6 December 2008 at Waitangi Park. Over 5,000 people joined in climate-related activities, visited a marquee with more than 30 displays from environmentally conscious organisations, shared information on reducing carbon footprints, and enjoyed live music. Greater Wellington Regional Council brought a city bus to the event, promoting public transportation as an alternative to personal vehicle use.



Sustainability and Climate Change – plans and actions

Many councils see the connection between climate change and unsustainable practices in business and lifestyles. They are working to reverse trends and developing sustainability plans for their communities.

Wellington City Council, which has an aspirational goal of carbon neutrality for the council and community, has developed a Climate Change Action Plan with sustainability as the overarching response to the issue of climate change. Actions involve working across corporate units and with business and community organisations, including piloting, with the Wellington Sustainability Trust, a network of the Sustainable Energy Advice Centre.

Christchurch City Council is using the sale of its carbon credits to fund the move to a more sustainable Christchurch. Its Sustainable Energy Strategy for the community emanated from consultations with the Europe-based Energie-Cités in early 2006. Christchurch is a unique member of Energie-Cités, the first city outside Europe to be asked to join this association of over 1,000 urban centres in 26 countries. Its projects earning carbon credits vary from awareness raising among residents and local business on energy issues to building partnerships with community organisations, energy industry players and local businesses.

Transport

Transportation emissions make up almost half of all community emissions. Actions to reduce emissions from vehicle use are being implemented across New Zealand. Having accessible and dependable public transportation can greatly reduce the reliance on private vehicle usage for daily commuting. The provision of good public transportation systems is a key action in reducing emissions.

Moves to increase public transport patronage have seen considerable success in many areas, such as in Christchurch where Christchurch City Council and Environment Canterbury have worked in tandem to achieve passenger number increases and satisfaction reflecting good planning in response to residents needs. This has resulted in better connections between desired destinations, better coverage, integrated ticketing, increased frequency, more direct routes, and an improved image.

Some cities and towns are rolling out measures to entice drivers away from the security and convenience of personal transport with better bus shelters, improved reliability, and "real time" notices at bus stops. The upgrade of train services and electrification of tracks, as Wellington and Auckland councils have contributed to, represent major investments that councils see as prudent in view of declining oil reserves and the need to reduce greenhouse gas emissions.

Councils are also widely encouraging the use of active transportation in their communities, although this is for health, as well as energy efficiency and climate change mitigation reasons. They are supporting initiatives such as Walking School Buses and constructing safe cycle routes through cities. Several councils have made large investments to develop or extend active-transport infrastructure. Hamilton City Council built over 90 km of cycling routes in 18 months and Palmerston North City residents enjoy extensive on- and off-road cycle paths. Dunedin City Council recently completed a bike path along the foreshore, and Environment Canterbury has begun trialling bicycle racks on public buses to make it easier for people wanting to commute by bicycle.

Box 10 New Plymouth District Council's award winning Coastal Walkway

In 1999, New Plymouth District Council began constructing a pedestrian and cycle path that hugs the coastline, making for a magnificent and attractive area for active transportation. The current seven-kilometre Coastal Walkway stretches almost the entire length of the city between Port Taranaki and the mouth of the Waiwhakaiho River, connecting recreational areas and residential areas to the central business district with plans to extend the walkway another 4 km to Bell Block. It will include a shared cycle–pedestrian bridge over the Waiwhakaiho river.

Photo from New Plymouth District Council website.

Waste

Residential waste decomposing in landfill produces large quantities of methane, a powerful greenhouse gas. Most councils are responsible for providing waste services to their communities, so they can directly influence the reduction in greenhouse gas emissions.

Kaikoura and Kapiti Coast District Councils have begun kerbside recycling programmes to reduce the amount of unnecessary items finding their way to the landfill. Porirua City Council developed Trash Palace as a recycling recovery initiative, and Wellington City Council began a trial of recycling receptacles alongside rubbish bins in the central business district. A new waste and recycling facility developed jointly by Manukau and Auckland City councils is achieving large reductions in waste to landfill.

A material recovery facility built for Christchurch City Council's new domestic waste kerbside collection has, within its first four months, diverted 15,000 tonnes of waste from the city's landfill. The council's new organic material processing plant is to open in July 2009 and will annually process 62,000 tonnes of the city's domestic garden and food waste into compost.

Many councils are offering free workshops to the community on composting and worm farms and helping schools develop waste-minimisation programmes.

Kaikoura District Council and Christchurch City Council are running cloth nappy schemes to reduce the significant flow of disposable nappies to landfill.

Box 11 Landfill gas heating system – Nelson Hospital

An innovative partnership by Nelson City Council, Nelson-Marlborough District Health Board, and an energy company has resulted in a significant reduction of emissions plus a financial benefit for the city and the district health board.

The council was looking for alternatives to flaring off the gas from its landfill and was presented with a proposal to burn the gas in a boiler at the Nelson Hospital. The boiler produces 1.5 megawatts of thermal energy, and provides about two-thirds of Nelson Hospital's steam and hot water requirements. The hospital will save the burning of 2,500 tonnes of coal a year, and the whole project will result in a reduction of greenhouse gas emissions of around 5,000 tonnes per year for the next 15 years.

The council has gained a revenue stream from a previously wasted resource, as well as reducing local air pollution and helping it to meet the new tighter clean-air standards.

Box 12 Wellington City Council – Kai to Compost project

From January to June 2006, Wellington City Council, with funding from the Ministry for the Environment, ran a trial collection of food waste from several restaurants and cafés and Westpac Stadium – the Kai to Compost project. Over the six months, the project collected 102 tonnes of food waste, saving 92 tonnes of greenhouse gas emissions.

The council gave unique brown wheelie bins to participants with simple information about what was allowed and not allowed to go into them. A collection truck was specially modified to give the bins a power wash when they were emptied, overcoming one of the main concerns about collecting putrescibles (i.e. food rotting and smelling).

Once collected, the food waste was mixed with green waste at the Living Earth plant at the Southern Landfill and turned into compost for sale to local gardeners.

Photo courtesy of Wellington City Council

Residential

Council participation in Healthy Homes projects

Investing in housing energy efficiency and conservation is more effective than building new power plants, and many CCP-NZ councils are assisting in community projects that will result in the retrofitting of housing for greater heat insulation.

Research undertaken by the Otago Medical School demonstrates that every dollar invested in the sustainable refurbishment of housing of lower socioeconomic families results in two dollars of direct health system savings plus many other savings, such as reductions in emissions from thermal generation and the need to build new power stations.

The Intergovernmental Panel on Climate Change noted that residential building retrofits provide the greatest potential for reducing a country's emissions by 2020. Retrofitting homes in an energy-efficient way and building new houses with energy-saving techniques and technologies also brings direct benefits in improved indoor and outdoor climatic conditions.

Kaikoura District, Masterton District, Waitakere, Christchurch, Dunedin, Porirua and Wellington City Councils are among many CCP-NZ participants that have upgraded their own pensioner housing or have supported local community energy trusts providing household insulation retrofits for low income families. Many of these projects are implemented with funding from the Government (EECA).

Refer to www.eecn.org.nz for more information on the community trusts, and for EECA see www.eeca.govt.nz.

Auckland City Council offered free insulation retrofits to low income residents, and New Plymouth District Council has begun its own Better Homes programme, and is on target to insulate 10,000 Taranaki residences by 2014. Nelson City Council assisted in the installation of 25 solar hot water systems on houses this year, and plans to help more in future. A few councils have gone further and are employing eco-advisors to give free advice on home retrofitting and sustainable design.

Little differences that make big savings inside households are also being initiated. Kapiti Coast District Council approved a community energy-saving project involving the bulk purchase of energy-saving light bulbs for free distribution to households. The benefits of the project were clear: for a cost of $76,500, the benefit to ratepayers (in the form of electricity savings) will collectively be around $5.8 million over the life of the bulbs. Recycling options for the bulbs is also provided. This project is funded through savings achieved from other council energy-efficiency projects, and Contact Energy contributed $25,000 to the project.

Porirua City Council also supported a light bulb exchange programme for households, trading eco-bulbs for less-efficient incandescent bulbs.

The benefits of investing in more energy-efficient homes go beyond individual advantages. Housing retrofits are a tool to help address the financial crisis as well as climate change. Refurbishment creates new jobs and boosts regional and national economies.

A lack of knowledge of the benefits to the community from retrofits in the housing sector impedes decision-making by central and local government and private sector investment.

5 CCP-NZ Councils - Profiles

Each of the 34 CCP-NZ councils, listed alphabetically, is profiled below.

Auckland City Council

Population: 382,540

Joined CCP-NZ: 2005

Milestones completed: M1

Corporate goal: Not yet established.

Community goal: Not yet established.

Website: www.aucklandcity.govt.nz

Major actions taken

Completed an inventory of 2005 corporate and 2001 community emissions to establish baselines from which to measure emission reductions.

Corporate actions completed

Employed an energy manager, installed an energy management monitoring system, and audited energy usage in swimming pools and major buildings.

Developed a corporate travel plan, encouraging alternative travel modes to and from the council and for work purposes.

Applying green star building principles to the refurbishment of administration buildings.

Diverted seaweed (collected from beaches) from the landfill to compost.

Community actions completed

Provided residential sector support, including a free eco-design service, a free household energy advice service, and insulation retrofits for low-income households.

In the transport sector, improved public transport, increased cycling infrastructure, and supported walking and cycling at schools.

Reduced waste with composting and recycling education initiatives.

Focusing on high-quality urban design outcomes with a priority on developing pedestrian-friendly spaces.

Auckland Regional Council

Population: 1,237,239

Joined CCP-NZ: 2006

Milestones completed: M4

Corporate goal: Reduce energy use by 20 per cent on 2005/06 levels by end of 2009/10, and further reduce greenhouse gas emissions (including farming) by 20 per cent by 2019, in line with the commitment towards a low-carbon region.

Community goal: Commit to work with other councils to develop community goals.

Website: www.arc.govt.nz

Major actions taken

Completed an inventory of 2006 corporate and 2001 community emissions to establish baselines from which to measure emission reductions.

Corporate actions completed

Completed a full energy audit for the council's Pitt Street offices.

Upgraded to efficient lighting in the Pitt St headquarters. The total cost of the lighting upgrade was $758,545, which was funded through a $157,000 grant from the Electricity Commission and a loan from the Energy Efficiency Conservation Authority (EECA) that the council will repay over 4½ years using the savings from the new lighting system.

Reviewed the 10-year Regional Park Management Plan.

Outlined initiatives to improve the council's energy efficiency and sustainability programme.

Developed and implementing a sustainable procurement policy and support practices.

Implemented a travel plan, including a customised package of measures to promote alternative travel choices for staff.

Community actions completed

Working with other Auckland region territorial local authorities to develop community-wide initiatives.

Carterton District Council

Population: 6,870

Joined CCP-NZ: 2003

Milestones completed: M3

Corporate goal: 10 per cent below 2001 by 2010 and 70 per cent below by 2025

Community goal: 10 per cent below 2001 by 2010 and 70 per cent below by 2025

Website: www.carterton.co.nz

Major actions taken

Completed an inventory of 2001 corporate and community emissions to establish a baseline from which to measure emission reductions.

Corporate actions completed

Instituted energy audits on key facilities.

Installed energy efficient lighting in council chambers and pensioner flats.

Established a pump-efficiency replacement policy.

Implemented efficient fleet operational practices.

Installed motion sensors in depot toilets.

Trialled a solar streetlight at a rural intersection.

Implemented information technology system efficiencies and double-sided printing.

Improved efficiency of heating in the library.

Established an energy-invoice tracking system.

Community actions completed

Produced a community local climate actions plan in partnership with Masterton and South Wairarapa District Councils.

Supported the community warm and healthy homes retrofit programme.

Supported community energy efficiency education initiatives.

Implemented recycling and waste minimisation projects.

Established water meters to reduce water and energy consumption.

Christchurch City Council

Population: 369,000

Joined CCP-NZ: 2004

Milestones completed: M5

Corporate goal: 69 per cent below 1994 by 2011.

Community goal: 16 per cent per person below 2008 by 2018.

Website: www.ccc.govt.nz

Major actions taken

Completed an inventory of 1994 corporate emissions to establish a baseline from which to measure emission reductions, with re-inventories for 2001 and 2008.

Completed community inventories for 2001 and 2006.

Corporate actions completed

Achieved a 57 per cent reduction of carbon emissions from a 1994 baseline.

Reduced more than 160,000 tonnes of CO_2-e since 2001.

Collected landfill gas from the Burwood Landfill and used to heat and power QEII recreational centre. Emissions reduced by 40,000 tonnes of CO_2-e per year, energy cost savings of $1M per year, emissions reduction units (from savings) sold for more than $3M. Carbon credit revenue used for the implementation of the Sustainable Energy Strategy.

Purchased 1 GWh/year green-electricity from the Windflow 500 turbine on Port Hills, saving 625 tonnes CO_2-e per year and saving $27,000 per year in energy costs.

Replaced coal heating in Centennial Pool with ground-source heat pump, and heat recovery from a local manufacturer, saving $30,000 per year and approximately 60 tonnes of CO_2-e per year.

Collected used vegetable oil to heat Halswell Swimming Pool instead of diesel.

Installed ground source heat pumps to replace coal or LPG at five other pools.

Upgraded traffic lights technology, saving 715 tonnes of CO_2-e per year, and $50,000 per year in energy costs.

Upgraded lighting at the Christchurch Art Gallery, saving 87.5 tonnes CO_2-e per year, and $15,000 per year in energy costs.

Instituted green building principles for retrofits of council buildings.

Replaced LPG with landfill gas to heat the Christchurch Art Gallery – due for completion in 2009.

Proposed 6 green star building by powering, heating and cooling new Council Civic Offices with a tri-generator running on landfill gas – due for completion in 2010.

Community actions completed

Adopted Christchurch Sustainable Energy Strategy 2008–2018.

Seeking to intensity development and enhance quality of life using less resources through Greater Christchurch Urban Development Strategy.

Adopted Christchurch Sustainability Policy and Travel Demand Management Strategy.

Developing Climate Change Strategy due for public consultation in October 2009.

Established Target Sustainability Programme to provide resource efficiency advice to Christchurch businesses.

Introduced new city-wide wheelie bin service to separately collect organics, recycling and refuse in 2009.

Upgraded lighting at the Christchurch Art Gallery, saving 87.5 tonnes CO_2-e per year, and $15,000 per year in energy costs.

Supported community energy efficiency initiatives and housing retrofits.

Offered free inner-city bus service.

Established 130 kilometers of cycle lanes.

Dunedin City Council

Population: 114,891
Joined CCP-NZ: 2006
Milestones completed: M1
Corporate goal: Not yet established.
Community goal: Not yet established.
Website: www.cityofdunedin.com

Major actions taken

Completed an inventory of 2005 corporate and 2001 community emissions to establish baselines from which to measure emission reductions.

Corporate actions completed

Appointed energy manager in March 2006.

Established a comprehensive Energy Management Programme with long-term objectives to increase the energy efficiency of council activities, improve sustainability of the council's energy supply, reduce environmental impacts arising from energy use, and provide community leadership on energy issues.

Analysed biggest energy users and areas of largest energy savings potential.

Installed heat pumps to replace LPG in Moana Pool, producing substantial emission savings.

Identified major efficiencies available for the Dunedin Art Gallery.

Reviewed lighting changes for the Civic Centre.

Identified major potential emission reductions at Green Island and Musselburgh wastewater treatment plants.

Community actions completed

None reported.

Environment Canterbury Regional Council

Population: 508,102
Joined CCP-NZ: 2004
Milestones completed: M2 (Corporate)
Corporate goal: Vehicle carbon emissions shall be maintained or improved upon from base 2001 level (0.153 kg/km small; 0.194 kg/km medium) between 2009/10 and 2018/19; and electricity usage per m^2 of occupied floor area shall be maintained or improved upon from 2001 base level (149 kWh/m^2/year) between 2009/10 and 2018/19.
Community goal: Not yet established.
Website: www.ecan.govt.nz

Major actions taken

Completed an inventory of 2001 corporate and community emissions to establish a baseline from which to measure emission reductions.

Corporate actions completed

Reduced vehicle carbon emissions, measured by CO_2 emissions kilograms per kilometre travelled.

Reduced electricity consumption, measured by electricity consumption per square metre in the Christchurch office.

Reduced waste going to landfill, measured by the amount of waste per staff member going to landfill per year from the Christchurch office.

Towards becoming carbon neutral by ensuring that CO_2 emissions per staff member do not increase.

Community actions completed

Developed an action-driven Regional Energy Strategy to enhance the energy resilience of Canterbury by ensuring the region has a secure, reliable, affordable, and sustainable energy system.

Implemented Clean Heat Project – at least 50 per cent energy efficiency conversions since programme inception in 2003 (14,000 out of 26,000).

Environment Canterbury has become a provider of energy efficiency installations as part of the New Zealand Insulation Fund – *Warm Up New Zealand – Heat Smart* from 1 July 2009.

Introduced the Greater Christchurch Travel Demand Management Strategy in 2009 as part of the Greater Christchurch Urban Development Strategy.

Environment Waikato Regional Council

Population: 365,292
Joined CCP-NZ: 2007
Milestones completed: M1
Corporate goal: Not yet established.
Community goal: Not yet established.
Website: www.ew.govt.nz

Major actions taken

Completed an inventory of 2006 corporate and 2001 community emissions to establish baselines from which to measure emission reductions.

Developed the Regional Energy Strategy to assist with development of regional renewable energy supply options.

Working with territorial local authorities to develop a regional action programme based on Regional Ecological Footprint and the Regional Energy Strategy.

Corporate actions completed

Audited internal building energy in 2008: implementing recommendations – low-flow showerheads, changes to building temperature set-points, and de-lamping some areas.

Audited vehicle fleet and currently implementing recommendations, including developing new vehicle purchase criteria, and down-sizing.

Overhauled corporate recycling systems: implemented Govt 3 system, reduced waste to landfill 26 per cent in 2009, and purchased a worm farm in 2008.

Community actions completed

Introduced educational initiatives to encourage carbon-saving behaviour change: bulletin articles, intranet pages, and sustainable living programmes.

Developed a sustainable purchasing initiative.

Far North District Council

Population: 55,845
Joined CCP-NZ: 2007
Milestones completed: M1
Corporate goal: Not yet established.
Community goal: Not yet established.
Website: www.fndc.govt.nz

Major actions taken

Completed an inventory of 2006 corporate and community 2001 emissions to establish baselines from which to measure emission reductions.

Completed forecasts for 2011 for corporate and community emissions.

Corporate actions completed

Installed energy efficient lighting in John Butler Centre and council offices.

Adopting more energy-efficient computers.

Installed energy monitoring software (e-Bench).

Completed building energy and waste audits and developing action plan for implementation of suggested measures.

Community actions completed

Consulted on a climate change programme in the 2009 Long Term Council Community Plan.

Drafted a new chapter for the District Plan to include specific provisions for renewable energy and energy efficiency.

Franklin District Council

Population: 55,506

Joined CCP-NZ: 2007

Milestones completed: M3 (Corporate)

Corporate goal: 5 per cent reduction on 2006 levels by 2011.

Community goal: Not yet established.

Website: www.franklin.govt.nz

Major actions taken

Completed an inventory of 2006 corporate and 2001 community emissions to establish baselines from which to measure emission reductions.

Corporate actions completed

Installed an energy management system.

Initiated energy audits and implemented initial low-cost opportunities. Higher cost measures on hold until Auckland local government reorganisation outcomes are known.

Established sustainability criteria in procurement procedures.

Reviewed streetlight opportunities with Counties Power.

Reviewed water and sewage pumping efficiency gains and requested pump replacement capital via the Long Term Council Community Plan.

Purchased more-efficient vehicles.

Community actions completed

None reported.

Greater Wellington Regional Council

Population: 434,034

Joined CCP-NZ: 2007

Milestones completed: M1

Corporate goal: 41 per cent below 2006 levels by 2050.

Community goal: Not yet established.

Website: www.gw.govt.nz

Major actions taken

Completed an inventory of 2006 corporate emissions to establish a baseline from which to measure emission reductions.

Corporate actions completed

Established goals for reducing corporate emissions by 41 per cent overall by 2050.

Established a collaborative process with territorial authorities for the development of a regional plan to respond to climate change.

Investigated the potential of mini-hydrogenation projects for water supply purposes.

Investigated the potential of installing wind turbines on some council-owned land.

Reviewed energy usage in Greater Wellington buildings.

Reviewed the vehicle fleet and vehicle purchasing policy.

Reviewed the potential for support of wood energy from regional forests.

Community actions completed

Completed, with the assistance of Landcare Research, a full inventory of 2006/07 community emissions, including agriculture and forestry, for the region and individual territorial authorities, to establish baselines from which to measure reductions.

Agreed on a renewable energy work programme for the region, focusing on wind and tidal energy and home insulation.

Hamilton City Council
Te kaunihera o Kirikiriroa

Hamilton City Council

Population: 138,500

Joined CCP-NZ: 2004

Milestones completed: M4

Corporate goal: 20 per cent below 2001 levels by 2020.

Community goal: Stabilise at 2001 level by 2020.

Website: www.hamilton.co.nz

Major actions taken

Completed an inventory of 2001 corporate and community emissions to establish a baseline from which to measure emission reductions.

Corporate actions completed

Completed an energy audit of Waterworld recreation centre, and implemented energy efficiency projects for water treatment, exhaust heat recovery, and boiler controls.

Cogenerating biogas from waste-water digesters to supply heat and electricity to the treatment plant.

Established a landfill gas-generation facility.

Audited libraries and municipal offices, retrofitted energy efficient lighting saved significant energy.

Instituted an energy management system to monitor energy usage and payments (significant administrative cost savings).

Reviewed street lighting, particularly under-veranda lights, improved lighting, and reduced costs. Trialled LED street-lighting technology. Improved lighting at Hamilton Gardens Pavilion.

Audited Hamilton Zoo's facilities and achieved savings. Improved thermal efficiency of the chimpanzee facility with insulation and condensing boilers.

Replaced diesel boilers with condensing boilers at the Hamilton Gardens plant nursery.

Corrected power factor and installed new sub-metering at Waikato Stadium to create accurate invoices for tenants.

Adjusted Building Management System settings at Municipal Offices, Waikato Museum, and Knox Street car park.

Installed solar hot water at the Verandah Café.

Community actions completed

Appointed an eco-design-advisor to work with residents and local building companies to improve performance ratings for homes.

Delivered community education programmes to promote energy efficiency and water conservation practices.

Promoted EECA interest-free loans for householders who purchase solar water heaters.

Showcased energy and water efficient business practices and technologies and promoted transport alternatives.

Worked with major events to promote carbon management, sustainable transport to events, and waste minimisation at events to organisers, attendees, and the community.

Promoted walking and cycling as integral to transport planning, addressing safety, facilities, and infrastructure.

Promoted bus use over car use, including increased direct commuter routes, priority bus routes, and bus-related infrastructure.

Established park-and-ride facilities on Hamilton's outskirts for events.

Expanded school travel planning to include the Walking School Bus Programme and Safe Routes Programme throughout the city.

Promoted Business Travel Plans and council's Corporate Travel Plan.

Used council education programmes and regulations to overcome barriers and promote waste avoidance, minimisation, and recycling programmes. Regularly researched these barriers.

Supported native plantings to increase carbon sequestration through the Gully Restoration Programme, community planting programme, and Waiwhakareke Natural Heritage Park.

Took part in Earth Hour and raised profile of local action to affect climate change.

Supporting Enviroschools to reduce waste and use energy and water efficiently, and supporting New Zealand's first student-designed eco-classroom.

Hawke's Bay Regional Council

Population: 142,710
Joined CCP-NZ: 2007
Milestones completed: M1
Corporate goal: Not yet established.
Community goal: Not yet established.
Website: www.hbrc.govt.nz

Major actions taken

Completed an inventory of 2006 corporate and 2001 community emissions to establish baselines from which to measure emission reductions.

Prepared draft Milestone 2 goals and Milestone 3 action plan ideas for consideration by council staff.

Corporate actions completed

Surveyed energy usage of corporate office heating and cooling system.

Separated batteries and light bulbs from waste stream for appropriate disposal.

Improved vehicle fleet safety and reduced emissions with a move to diesel vehicles.

Community actions completed

Completed, with the assistance of Landcare Research, a full inventory of 2006/07 regional community emissions, including agriculture and forestry, to assess the potential for carbon neutrality.

Undertook a pre-feasibility study of potential water harvesting options.

Purchased land for forestry-based sewage disposal in Central Hawke's Bay for sequestration functions.

Purchased an eroded hill country farm for sequestration.

Hutt City Council

Population: 95,421
Joined CCP-NZ: 2008
Milestones completed: Political Declaration
Corporate goal: Not yet established.
Community goal: Not yet established.
Website: www.huttcity.govt.nz

Major actions taken

Developing an inventory of 2006 corporate and 2001 community emissions to establish baselines from which to measure emission reductions.

Corporate actions completed

Installed a landfill gas collection system, flare system, and landfill gas electricity generator at Silverstream landfill.

Approved and adopted the Environmental Sustainability Strategy 2008.

Achieved Enviromark Gold for all council facilities.

Undertook energy audits of all council facilities: actions taken to date have resulted in a 40 per cent energy saving at Huia pool.

Community actions completed

None reported.

Kaikoura District Council

Population: 3,456

Joined CCP-NZ: 2004

Milestones completed: M3

Corporate goal: 100 per cent below 2001 levels by 2020.

Community goal: 60 per cent below 2001 levels by 2015.

Website: www.kaikoura.govt.nz

Major actions taken

Completed an inventory of 2001 corporate and community emissions to establish a baseline from which to measure emission reductions.

Achieved Green Globe 21 community environmental benchmarking indicators certification every year since 2004.

Corporate actions completed

Audited buildings and other facilities.

Introduced switch-off practices and activated Energy Star features for computing systems.

Trialled solar streetlights, then ordered additional systems for other locations.

Working with Main Power to develop and undertake an LED streetlight trial.

Introduced composting and worm-farm facilities for corporate food waste, including hands-on support to local schools.

Investigated water and sewage pumping efficiency initiatives.

Investigated hydro-power generation from gravity water supply systems.

Purchased bicycles for staff use around town.

Community actions completed

Supported the Trees for Travellers scheme.

Implemented zero waste initiatives including curbside recycling, coastal clean ups, "fantastic no plastic bags", cloth nappies support, and education campaigns.

Supported rainwater collection tanks.

Supported household retrofit programme.

Provided sustainability awards for local businesses.

Developed "A to B Carbon Free" Kaikoura's Walking and Cycling Strategy, February 2009.

Enhanced cycling and walking routes, providing alternatives to cars.

Hired out a Centameter electricity measuring device to help residents to check energy use.

Kaipara District Council

Population: 17,127

Joined CCP-NZ: 2007

Milestones completed: M1

Corporate goal: Not yet established.

Community goal: Not yet established.

Website: www.kaipara.govt.nz

Major actions taken

Completed an inventory of 2006 corporate and 2001 community emissions to establish baselines from which to measure emission reductions.

Corporate actions completed

None reported.

Community actions completed

None reported.

Kapiti Coast District Council

Population: 44,640

Joined CCP-NZ: 2004

Milestones completed: M3

Corporate goal: 15 per cent below 2001 levels by 2010.

Community goal: Stabilise at 2001 levels by 2010.

Website: www.kapiticoast.govt.nz

Major actions taken

Completed an inventory of 2001 corporate and community emissions to establish a baseline from which to measure emission reductions.

Corporate actions completed

Established climate change and energy manager policies, including cost-effectiveness criteria for investing in energy-related emissions reduction projects.

Appointed an energy manager.

Replacing largest single point source of emissions (diesel-fired boiler) with a carbon neutral wood-fired boiler, cutting council emissions by 22 per cent.

Auditing council's largest electricity using systems (water and waste water) to identify cost-effective savings opportunities.

Investigating switching away from natural gas for swimming pools towards more cost-effective, lower carbon alternatives.

Reviewed vehicle fleet and established new procurement criteria.

Established a sustainable procurement policy.

Established green-building criteria for all new council buildings.

Community actions completed

Consulted community through the Long Term Council Community Plan.

Reduced community emissions with a door-to-door project giving away energy efficient bulbs. Two bulbs can save the equivalent of 2 per cent of a $1,500 rates bill every year for nine years. The project had a cost–benefit ratio greater than $1:$70.

Upgraded 118 council pensioner units with insulation and solar hot water to save money and emissions.

Continuing long-term commitment to investing cash savings from council energy use in community projects to cut ratepayer's costs and emissions, such as EnergyWise Home Grants.

Manukau City Council

Population: 310,335

Joined CCP-NZ: 2006

Milestones completed: M1

Corporate goal: Not yet established.

Community goal: Not yet established.

Website: www.manukau.govt.nz

Major actions taken

Completed an inventory of 2005 corporate and 2001 community emissions to establish baselines from which to measure emission reductions.

Appointed a sustainability manager and an energy manager to help drive the sustainability agenda.

Corporate actions completed

Reviewed vehicle fleet and upgraded.

Installed ultraviolet sterilisation and better pumps at the swimming pools.

Refurbished head office with energy efficient design, air-conditioning and lighting.

Recruited corporate energy champions.

Community actions completed

Negotiated a new community waste and recycling contract, which is expected to result in large community energy and emissions savings.

Continued development of public transport networks.

Masterton District Council

Population: 22,623

Joined CCP-NZ: 2004

Milestones completed: M3 (Community)

Corporate goal: Reduce emissions to 25 per cent above 2001 level by 2010.

Community goal: Reduce to 10 per cent below 2001 level by 2010.

Website: www.mstn.govt.nz

Major actions taken

Completed an inventory of 2001 corporate and community emissions to establish a baseline from which reductions can be measured.

Corporate actions completed

Introduced further waste minimisation practices and reviewed vehicle fleet operations and purchasing to improve fuel efficiency and reduce emissions.

Community actions completed

Produced the Community Local Climate Actions Plan in partnership with Carterton and South Wairarapa District Councils.

Supported the community warm and healthy homes retrofit programme.

Supported community energy efficiency education initiatives.

Nelson City Council

Population: 41,679

Joined CCP-NZ: 2007

Milestones completed: M3

Corporate goal: Stabilise at 2004 level by 2012: reduce 40 per cent below 2004 level by 2020.

Community goal: Stabilise at 2001 level by 2012: reduce 40 per cent below 2001 level by 2020.

Website: www.ncc.govt.nz

Major actions taken

Completed an inventory of 2004 corporate and 2001 community emissions to establish baselines from which to measure emission reductions.

Established a strong clear "solar city" vision and gained strong support from residents.

Mayor expressed the city's vision and advocated for central government policies that would establish some compulsion (standards and codes) to install renewable energy technology on new buildings.

Corporate actions completed

Installed 90 kW micro-hydrogenerator in Maitai River near water treatment plant, saving $15,000 worth of electricity per year.

Completed a feasibility study for solar water heating at council facilities, with the first installations to occur in 2009/10.

Community actions completed

Completed a feasibility study for the city to implement a 25,000 solar water heaters loan scheme in the Nelson community.

Assisted with the pilot project installation of the first 25 solar water heating systems plus performance and economic monitoring facilities.

Employed an eco-advisor to advise on new and retrofit housing.

Established a sustainable business advisor to provide practical advice to businesses on energy and water efficiency and waste reduction.

Supported Nelson Environment Centre's "Code Red" (Peak Everything Awareness) programme.

New Plymouth District Council

Population: 72,000

Joined CCP-NZ: 2007

Milestones completed: M2

Corporate goal: Stabilise at 2006 level by 2010; reduce 20 per cent by 2015.

Community goal: Stabilise at 2001 level by 2011: reduce 20 per cent by 2021.

Website: www.npdc.govt.nz

Major actions taken

Completed an inventory of 2006 corporate and 2001 community emissions to establish baselines from which to measure emission reductions.

Corporate actions completed

Completed energy audits of facilities, and starting to implement recommendations.

Contracted energy management services.

Established an energy management team, including two external consultants, that meets monthly.

Energy management team identified more than 60 initiatives for energy reduction and is proactively pursuing these through an initiatives schedule that is reviewed monthly.

Adopted an energy management policy.

Reviewed corporate budgets and found over-estimation of energy expenditure.

Introduced monthly reporting of energy consumption by activity.

Introduced quarterly reporting of energy consumption and greenhouse gas emissions to Executive Management Team.

Completed a staff travel survey over the Intranet.

Community actions completed

On-target progress in Better Homes project, aiming to retro-insulate 10,000 homes in Taranaki by 2014.

Investigating landfill gas capture project.

Facilitated community consultation workshop to set community greenhouse gas reduction targets

Recognised in the International Liveable Communities Awards (in China 2008) in three categories:

- Whole City Award – Best City under 75,000
- Sustainable Projects (Gold) Award, Coastal Walkway
- Community Sustainability (Gold) Award.

North Shore City Council

Population: 200,091
Joined CCP-NZ: 2005
Milestones completed: M1
Corporate goal: Not yet established.
Community goal: Not yet established.
Website: www.northshorecity.govt.nz

Major actions taken

Completed an inventory of 2003 corporate and 2001 community emissions to establish baselines from which to measure emission reductions.

Established an ISO14064-compliant energy management system to monitor and report on energy usage across all council facilities.

Established a sustainable procurement policy and accompanying guidelines.

Corporate actions completed

Installed landfill gas–powered generator at the waste-water treatment plant.

Commissioning a carbon-footprinting exercise for the waste-water treatment plant.

Installed a burner management unit at Takapuna Aquatic Centre, achieving about 10 per cent gas boiler energy savings.

Promoted driver-efficiency training to relevant managers across council (those who have a high number of staff with allocated vehicles). Estimated fuel savings of around 10 per cent.

Conducted LED office and street-lighting trials.

Ongoing energy conservation campaigns with staff.

Regular waste and energy auditing of the council's administration buildings, including follow-up communications leading to an increase in energy efficiency policy compliance to 80 per cent.

Installed an industrial-sized worm digester and diverting organic waste, from the council's three largest administration buildings, from landfill.

Community actions completed

Established a sustainable procurement policy and accompanying guidelines.

Diverting about 800 tonnes of seaweed from landfill annually.

Undertook energy auditing and providing recommendations to Harbour Hockey Stadium and Bayview Community Centre.

Participated in Earth Hour 2009 with great results from North Shore businesses and community.

Launched the Naturally Smarter programme for North Shore residents, which covers environmental awareness, including climate change.

Palmerston North City Council

Population: 80,000
Joined CCP-NZ: 2008
Milestones completed: M1
Corporate goal: Not yet established.
Community goal: Not yet established.
Website: www.pncc.govt.nz

Major actions taken

Completed an inventory of 2006 corporate and 2001 community emissions to establish baseline from which to measure emission reductions.

Corporate actions completed

Installed landfill gas–powered generator.

Improved public transport, resulting in emission reductions.

Improved cycling infrastructure such as cyclist lanes and edgeline treatments (i.e. narrowing traffic lanes and creating space for cyclists) and off-road paths for cyclists and pedestrians.

Energy management actions include power factor correction and installation of heat pump heat transfer units at Lido and Freyberg Pools.

Installed pool covers at Lido indoor and outdoor pools.

Administration building power factor correction and lighting retrofit, plus lighting motion detectors.

Trialled streetlight timers.

Installed duck-pond pump timer.

Community actions completed

None reported.

Papakura District Council

Population: 48,783
Joined CCP-NZ: 2006
Milestones completed: M1
Corporate goal: Not yet established.
Community goal: Not yet established.
Website: www.pdc.govt.nz

Major actions taken

Completed an inventory of 2001 corporate and 2001 community emissions to establish baselines from which to measure emission reductions.

Corporate actions completed

Conducted energy audits on Civic Centre and Aquatic Centre.

Made operational changes to improve efficiency.

Implemented water-monitoring programme.

New construction projects to include energy efficiency options, including Massey Park Aquatic Centre and Art Gallery upgrade.

Set Long Term Council Community Plan goal of insulating more than 70 houses in the district every year.

Audited air handling and water loss issues.

Insulated and provided other energy efficiency options such as eco-bulbs and draft stops to 40 council-owned rental properties.

Contracted consultants to develop the Work Place Travel Plan.

Set up the council's Walking and Cycling Plan.

Considering energy efficiency in council procurement.

Purchased bicycles for staff.

Installed lockers for staff who cycle.

Purchased efficient vehicle fleet including petrol–electric hybrids.

Community actions completed

Participated in Earth Hour, including climate change children's art competition, energy efficiency expo, give away of more than 6,000 eco-bulbs to residents, and Auckland Astronomical Society Star Gazing at Bruce Pulman Park during Earth Hour.

Porirua City Council

Population: 48,546
Joined CCP-NZ: 2007
Milestones completed: M1
Corporate goal: Not yet established.
Community goal: Not yet established.
Website: www.pdc.govt.nz

Major actions taken

Completed an inventory of 2006 corporate and 2001 community emissions to establish baselines from which to measure emission reductions.

Corporate actions completed

Working on Corporate Emission Reduction Target and Action Plan.

Implemented a Zero Waste programme.

Established diversion of greenwaste at Spicer Landfill.

Installed a landfill gas capture system at Spicer Landfill.

Established a corporate energy management programme.

Carried out a Level 2 Energy Audit of high-energy use facilities, with resulting action plan.

Reviewed efficiencies in council's water-pumping assets.

Community actions completed

Working on a regional Community Emission Reduction Target and Action Plan with other councils in the Wellington Region.

Supported Porirua community energy initiatives implemented by the Sustainability Trust.

Supported a low-energy light bulb exchange programme for householders.

Supported the development of PolyPalace for the recycling of used polystyrene into household insulation products and a retrofit programme.

Developed Trash Palace as a community resource recovery initiative and working on its redevelopment in partnership with Mana Community Enterprise.

A partner in eMission, a regional business sustainability and carbon-reduction programme the Ministry of Economic Development and EECA support.

Rodney District Council

Population: 89,601
Joined CCP-NZ: 2004
Milestones completed: M1
Corporate goal: Not yet established.
Community goal: Not yet established.
Website: www.rodney.govt.nz

Major actions taken

Completed an inventory of 2006 corporate and 2001 community emissions to establish baselines from which to measure emission reductions.

Corporate actions completed

Commenced investigations and energy audits of facilities.

Changed vehicle procurement.

Commenced street-lighting review.

Community actions completed

Implemented climate change awareness campaign "Climate Change: Global Problem, Local Solution".

Provided workshops and advice on recycling, smart shopping, saving energy and water, composting and worm-farms, and travelling smarter.

Helped Wellsford School through an eco-audit to determine where improvements could be made in energy and water efficiency and waste reduction.

Rotorua District Council

Population: 62,526

Joined CCP-NZ: 2005

Milestones completed: M3 (Corporate)

Corporate goal: Stabilise at or below 2006 levels by 2010; set longer-term targets during 2011/12 potentially with a view to becoming a carbon-neutral local authority.

Community goal: Not yet established.

Website: www.rdc.govt.nz

Major actions taken

Completed an inventory of 2006 corporate and 2001 community emissions to establish baselines from which to measure emission reductions.

Developed a Corporate Sustainability Policy and Corporate Climate Action Plan to establish future directions, and procurement actions.

Established a corporate sustainability champions group.

Corporate actions completed

Reviewed vehicle fleet.

Reviewed council buildings.

Engaged energy management services and installed energy monitoring software.

Investigated and undertook energy audits of various facilities.

Developed vehicle procurement policy.

Reviewed street lighting.

Approved landfill gas extraction and flaring.

Community actions completed

None reported.

South Waikato District Council

Population: 21,291

Joined CCP-NZ: 2004

Milestones completed: M3

Corporate goal: Stabilise by 2010, reduce by 30 per cent by 2021.

Community goal: Stabilise by 2010, reduce by 20 per cent by 2020.

Website: www.southwaikato.govt.nz

Major actions taken

Completed an inventory of 2006 corporate and 2001 community emissions to establish baselines from which to measure emission reductions.

Corporate actions completed

Installed solar water heating for showers at Tokoroa swimming pool.

Conducted a level 2 energy audit of Tokoroa waste-water treatment plant.

Conducted a level 2 energy audit of the Tokoroa office, pools, and library.

Community actions completed

Warm Homes project in response to degraded air quality in Tokoroa (includes clean heat options).

Promoted solar water heating grants.

Promoted energy efficiency community and "smart developer" initiatives.

Trialled new efficient streetlights with developers.

Industry energy efficiency and waste reduction initiatives.

South Wairarapa District Council

Population: 8,532

Joined CCP-NZ: 2005

Milestones completed: M3 (Community)

Corporate goal: 5 per cent below 2001 level by 2010; 70 per cent below by 2025.

Community goal: 10 per cent below 2001 level by 2010; 70 per cent below by 2025.

Website: www.swdc.govt.nz

Major actions taken

Completed an inventory of 2001 corporate and community emissions to establish a baseline from which to measure emission reductions.

Corporate actions completed

Reviewed vehicle fleet.

Reviewed council buildings.

Community actions completed

Produced a community local climate actions plan in partnership with Carterton and Masterton District Councils.

Supported the community warm and healthy homes retrofit programme.

Supported community energy efficiency education initiatives.

Southland District Council

Population: 27,440

Joined CCP-NZ: 2005

Milestones completed: M3 (Corporate)

Corporate goal: Stabilise at 2005 level by 2015 and reduce by 20 per cent by 2025.

Community goal: Not yet established.

Website: www.southlanddc.govt.nz

Major actions taken

Completed an inventory of 2006 corporate and 2001 community emissions to establish baselines from which to measure emission reductions.

Corporate actions completed

Installed heat pumps to replace electric heating in main office building.

Installed trials of small renewable electricity generators (wind and solar power) on Stewart Island.

Reviewed corporate commuting energy to consider alternatives.

Introduced in-house recycling and food scrap collection.

Installed variable-speed drives in new water and sewerage scheme pumps (so they are not pumping all the time).

Reviewed the vehicle policy, which now encourages the purchase of more fuel-efficient vehicles.

Installed video-conferencing for use between council offices.

Set all council computers so they go onto standby by default if left on for long periods without use.

Community actions completed

Investigated the introduction of a three-bin kerbside collection system (for rubbish, recyclables, and greenwaste) to begin in 2010.

Taranaki Regional Council

Population: 100,263

Joined CCP-NZ: 2004

Milestones completed: M2

Corporate goal: Stabilise at 2001 level by 2010.

Community goal: Stabilise at 2001 level by 2010.

Website: www.trc.govt.nz

Major actions taken

Completed an inventory of 2001 corporate and community emissions to establish a baseline from which to measure emission reductions.

Established corporate and community goals.

Corporate actions completed

None reported.

Community actions completed

Supported development of community bus services to reduce isolation and reduce community emissions.

Developed and published the Regional Walkways and Cycleways Strategy for Taranaki to promote walking and cycling as alternative modes of transport.

Waipa District Council

Population: 41,148

Joined CCP-NZ: 2007

Milestones completed: M1

Corporate goal: Not yet established.

Community goal: Not yet established.

Website: www.waipadc.govt.nz

Major actions taken

Completed an inventory of 2006 corporate and 2001 community emissions to establish baselines from which to measure emission reductions.

Completed a further inventory of 2007 corporate emissions to enable a comparison with the 2006 base year.

Corporate actions completed

Encouraged staff to look at how the council's global footprint could be reduced.

Formulated Waste Champions, a group that (among other things) is working to reduce the volume of waste council staff produce and the energy that is used (lighting, air conditioning, computers, etc), and to implement recycling initiatives with council support.

Community actions completed

Encouraged residents to undertake environmentally friendly initiatives through council's support of Earth Hour and the introduction of Sustainable Living Programme classes.

Waitakere City Council

Population: 175,299

Joined CCP-NZ: 2004

Milestones completed: M4

Corporate goal: 50 per cent below 2001 level by 2021.

Community goal: 80 per cent per capita below 2001 level by 2051.

Website: www.waitakere.govt.nz

Major actions taken

Completed an inventory of 2002 corporate and 2001 community emissions to establish baselines from which to measure emission reductions.

Established a clear, long-term vision to guide city-wide sustainable energy initiatives.

Established a new council civic centre built to high sustainable building standards, located at a major public transport hub to reduce corporate commuting energy use and improve access for residents.

Corporate actions completed

Trialled more-efficient LED and solar streetlights.

Made swimming pool pumping efficiencies.

Rationalised the operation of the swimming pool co-generation system.

Upgraded Waipariera Civic Centre heating and lighting facilities.

Installed grid connected solar electric (PV) systems on buildings and libraries.

Upgraded traffic lights to LED bulbs.

Upgraded crematorium facilities.

Reviewed the vehicle fleet and developed tools to assist with future procurement decisions.

Installed solar water heating and a small wind turbine on the Civic Centre.

Community actions completed

Established school travel plans.

Assisted with the development of rail passenger facilities and stations and double tracking.

Developed park-and-ride facilities at rail connections, where needed.

Providing free shuttle bus services to and from major events in the city to improve the efficiency of public transport connections.

Developed extensive cycling and walking path system.

Working closely with new developments to improve sustainability.

Sponsored an eco-design advisor service for residential housing developments.

Waived basic building consent fees for solar water heating installations.

Strong support for the EcoMatters community trust and the work it is doing in retrofitting houses and providing education services.

Developed Sustainable Home Guidelines.

Introduced many community waste-reduction and recycling initiatives.

Working with EcoMatters Trust and other groups on communication initiatives promoting general awareness and specific project information for residents.

Celebrated the joint milestones of $1 million and 5 million kwH of energy savings since 2001. The emissions reduction totals more than 2,000 tonnes.

Wellington City Council

Population: 172,971

Joined CCP-NZ: 2004

Milestones completed: M5

Corporate goal: Stabilise at 2003 level by 2010, and reduce by 40 per cent by 2020 and 80 per cent by 2050 (plus aspirational goal to strive for corporate carbon neutrality).

Community goal: Stabilise at 2001 levels by 2010 and reduce by 30 per cent by 2020 and 80 per cent by 2050 (plus aspirational goal to strive for community carbon neutrality).

Website: www.wellington.govt.nz

Major actions taken

Completed corporate inventories for 2003, 2007, and 2008

Completed community inventories for 2001 and 2006.

Investigated the implications of carbon neutrality and set aspirational goals.

Corporate actions completed

Completed energy audits of several major facilities, and implemented initial measures.

Reviewed potential for co-generation at swimming pools. Installed co-generation in Johnsonville Pool.

Installed flaring facilities to destroy landfill gas at Southern Landfill.

Installed landfill gas-fueled electricity generator at Southern Landfill. (This is removing 85 per cent of landfill gas from the environment while supplying 8 GWh of electricity per year to the national grid.)

Improved energy efficiency specifications included in council housing upgrades.

Installed solar power and solar hot water heating at Makara Cemetery and Evans Bay Marina respectively.

Completed a study into the feasibility of installing a micro-hydro-turbine generator in the Moa Point outfall – agreement on implementation is yet to be reached with the operator.

Received Emissions Trading Scheme credits for an area of council forest.

Improved fuel efficiency standards for some categories of council vehicles.

Trialled energy efficient streetlights and monitored lighting quality and energy consumption.

Trialled new office waste disposal processes for the civic buildings, indicating potential for significant waste reductions.

Community actions completed

Implemented waste reduction projects such as Kai to Compost.

Trialled recycling bins in Wellington central business district in partnership with the Ministry for the Environment.

Supported warm and healthy homes projects for Wellington residents in partnership with Sustainability Trust, EECA, and Greater Wellington.

Proposed improvements to the public transport network by converting Manners Mall into a bus-only route – out for public consultation.

Western Bay of Plenty District Council

Population: 42,075

Joined CCP-NZ: 2008

Milestones completed: M1

Corporate goal: Not yet established.

Community goal: Not yet established.

Website: www.westernbay.govt.nz

Major actions taken

Completed an inventory of 2006 corporate and 2001 community emissions to establish baselines from which to measure emission reductions.

Corporate actions completed

Established the in-house Sustainable Progress Group in 2007.

Completed Milestone 2+3 workshop with councillors and staff to begin development of appropriate goals and emission-reduction action plans.

Implemented waste-reduction measures within council offices, including worm farm and recycling.

Purchased staff bicycle for local trips.

Raised staff awareness of employee commuting options through competitions and a bike-to-work week.

Community actions completed

Planned new measures to reduce water use, including residential metering (from 2009/10), more water-supply line metering, and increased water charges for large connections.

Completed planning for a new recycling centre that will begin operations next year.

Appendices

Appendix 1: ICLEI – Local Governments for Sustainability and CCP

The Communities for Climate Protection® – New Zealand (CCP®-NZ) Programme is part of the Cities for Climate Protection (CCP) Campaign established and run by ICLEI – Local Governments for Sustainability (ICLEI). The CCP Campaign builds global networks with a common purpose and framework.

The CCP-NZ Programme aims to achieve quantifiable greenhouse gas emission reductions from councils' own operations and influence mitigation in their wider communities.

Founded in 1990 as the International Council for Local Environmental Initiatives, ICLEI is an association of local governments dedicated to improving global environmental conditions through cumulative local action. Through its campaigns, ICLEI generates political awareness of key environmental issues, provides technical assistance and training to support local governments in addressing these issues, and evaluates their progress toward sustainable development.

The CCP-NZ Programme, delivered by ICLEI Oceania, focuses on capacity building for council staff and working with senior management and elected members to build Programme support and momentum. The Programme involves the use of a methodology that encompasses progress milestones, elements such as political and media support, technical and Programme support, measurement and practical action, and a tangible link to the international role of local governments. Technical support includes the supply of software, training workshops, and access to a range of tools and resource materials.

The CCP methodology provides a standardised and internationally recognised process for monitoring, measuring, and reporting performance in reducing greenhouse gas emissions. The use of the international CCP Greenhouse Gas Application software not only simplifies the development of greenhouse gas inventories and subsequent data analysis, it also permits quantitative comparisons among different communities, within individual countries and across the globe.

Councils participating in CCP-NZ are benefiting from over 15 years of international experience and best practice. New Zealand councils in the CCP-NZ Programme value the supported and structured approach that has achieved quantifiable results for the environment, financial savings for councils, and improved urban liveability for residents.

Councils in the Programme found the CCP-NZ business-case message and the methodology added value to existing council activities and fitted comfortably with the Long Term Council Community Plan planning processes.

Box 13 The CCP-NZ Programme

The CCP-NZ Programme provides a strategic framework via which councils can take action to reduce greenhouse gas emissions in their (corporate) activities and in their communities.

CCP-NZ assists councils to identify measures to reduce greenhouse gas emissions such as:

- saving energy, particularly from energy management initiatives and promoting renewable energy
- increasing sustainable transport options
- enhancing urban design and facilitating local mobility
- reducing emissions from landfills
- supporting adoption of low-carbon and low-energy technologies.

Once a council commits to becoming a CCP-NZ participant, the council proceeds to complete five milestones.

- Milestone 1: Conduct a greenhouse gas emissions inventory, analysis, and forecast for corporate and community emissions. (This helps to identify the potential for emissions reduction.)
- Milestone 2: Set emissions reduction goals.
- Milestone 3: Develop a local action plan to achieve sustainable reductions in emissions.
- Milestone 4: Implement the climate action plan and quantify the benefits of policies and actions.
- Milestone 5: Monitor progress towards the reduction goal, and start the process for re-inventory and review of the plan.

Methodology

The CCP-NZ methodology was developed from the international CCP model that has been implemented by local governments worldwide. It uses many of the same standards, processes, and methodologies that businesses use to take a public stand on reducing their emissions.

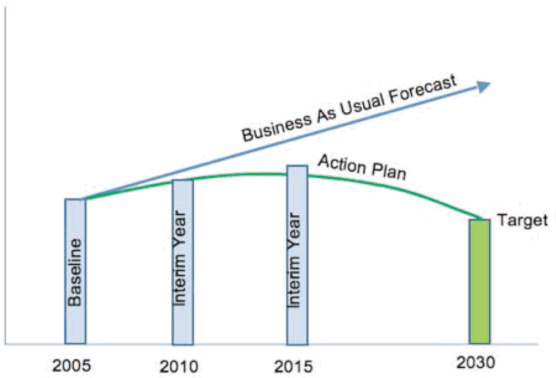
The CCP-NZ methodology provides a standardised, and internationally recognised, process for monitoring, measuring, and reporting performance in reducing greenhouse gas emissions. The international CCP Greenhouse Gas Application (GGA) software was modified for New Zealand conditions when the Programme started in 2004. The GGA software simplifies the development of greenhouse gas inventories and subsequent data analysis for council staff. It was also designed to provide quantitative comparisons among different communities, within individual countries, and between countries.

The CCP-NZ Programme provides a strategic framework for councils to take action to reduce greenhouse gas emissions from their own or corporate activities, and from their local community.

Benefits from using the CCP-NZ methodology include helping councils to identify measures to reduce energy usage and costs, promote renewable energy supplies, increase sustainable transport options, enhance urban design, reduce emissions from landfills, support the adoption of low-carbon and low-energy techniques and technologies and reduce greenhouse gas emissions.

Through the milestone framework, councils gain an understanding of how local authority decisions can be used to reduce greenhouse gas emissions while improving quality of life in the local community.

It is important that all levels of government work together and that each knows the reductions that are most appropriate for each level to implement.

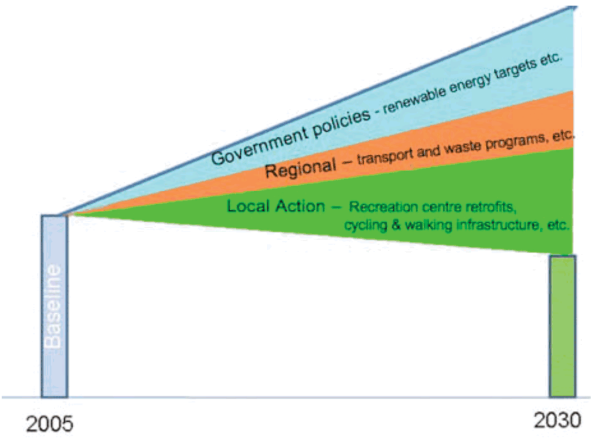


Climate action process

Once a council makes the leadership commitment to becoming a CCP-NZ participant, the council begins a five-milestone process. (See Box 13.)

Goals are important. They come in many guises and provide a focus for long-term outcomes.

In New Zealand, the five-milestone framework provides a focus for district, city, and regional councils, but there must be recognition that some major reductions will be achieved only by central government policies and actions.



Appendix 2: CCP-NZ Councils' Long Term Council Community Plans

The Local Government Act 2002 requires New Zealand councils to produce a Long Term Council Community Plan (LTCCP) every three years. LTCCPs look forward 10 years and document the council's vision, but only include detailed plans for the next three years. LTCCPs describe what will be done to achieve the 10-year vision, how much it will cost, and how it will be funded.

In order to analyse trends in local government climate change focus, an analysis was made of each Community for Climate Protection – New Zealand (CCP-NZ) participant council's draft 2009 LTCCP document and this was compared with their 2006 LTCCP.

CCP-NZ is mentioned frequently in both the 2006 and 2009 plans. At the start of 2006, 17 councils were participants in the CCP-NZ Programme. Eight of these councils mentioned the programme in their 2006 LTCCPs. In 2009, with 34 councils in the Programme, 20 specificly mentioned CCP-NZ. Some plans offered a major discussion on the milestone process and their local climate action plans.

Increase in awareness

With one exception, the CCP-NZ councils include significantly more references to the impacts of climate change in their draft 2009 LTCCPs than in their 2006 plans. This corresponds to the growing global awareness and concern about the possible effects of climate change, and reflects climate change advice the Ministry for the Environment has provided to local government.

The provision of commentaries on climate change and the potential for greater impacts also increased significantly in the draft 2009 documents.

Kapiti Coast District Council commented on the "growing awareness of major global issues, such as climate change, and their implications for local communities", and Masterton District Council noted "an increased public focus on the environment and mitigating potential impacts of climate change". South Wairarapa District Council included that the "problem of climate change is one of two major issues confronting the council", and Environment Waikato expressed how it is "widely argued that climate change could irrevocably harm the planet and population in a relatively short time period".

For most councils, the potential impact of climate change on infrastructure is the biggest concern in 2009 plans. Future water supply and how it might be affected are also given more consideration. How climate change could affect biodiversity and green spaces appears to be of low concern and only Dunedin City Council and Environment Waikato mentioned the potential climate change impacts on the health of the community.

Climate change policy uncertainty

The Government's proposed emissions trading scheme legislation is aimed at curbing, on a least-cost basis, the increasing level of greenhouse gas emissions. The proposed scheme is likely to require councils to monitor and report on the level of emissions from landfills, to purchase and submit one New Zealand unit for each tonne of CO_2-e emitted, and to set obligations on local government regarding waste management.

Uncertainties related to impacts of climate change, and uncertainties related the Government's climate change policies are noted in many of the council draft 2009 plans.

Some councils state that they have not made provisions in their plans for increased costs from the emissions trading scheme, and others offered comment that the implementation of the scheme was likely to increase costs.

Impacts on stormwater infrastructure

The potential impacts of climate change on stormwater infrastructure featured most strongly in the plans. In 2006, nine councils highlighted the issue, increasing to 19 councils in the draft 2009 plans.

The ability of stormwater systems to cope with the effects of climate change is the main concern for many councils. Dunedin City Council commented that it could "increase the frequency of flooding events, sewer over-flows, and asset damage. This may lead to increased operational and maintenance requirements". Kapiti Coast District Council refers to potential "increased frequency and/or volume of system flooding; increased peak flows in streams and related erosion; groundwater level changes; saltwater intrusion in coastal zones; changing floodplains and greater likelihood of damage to properties and infrastructure". These comments were accompanied with a suggestion for significant increases in expenditure for storm water management.

Changing transportation focus

Transportation systems, and their role in causing climate change, were not highlighted by most councils, despite knowledge that an increased focus on more environmentally friendly modes, including public transportation, can decrease greenhouse gas emissions. While only two 2006 plans mentioned transportation in the context of climate change, that number had increased to seven in the draft 2009 plans.

Papakura City Council's draft 2009 plan noted that increased roading will have a negative effect, but the long-term impacts of vehicle emissions on climate change will be offset by a heightened focus on public transportation and other alternative modes. The link between climate change and more energy efficient transportation is not always acknowledged in the plans.

Water supply

Another important climate change-related issue for councils is the future or long-term water supply. Considering the importance of agriculture and farming to many areas, it was surprising it was not mentioned in more plans. However, it is given much more importance in 2009 with 17 councils discussing

water supply issues in relation to climate change while only one made mention of it in 2006.

In its draft 2009 LTCCP, Carterton District Council notes the need to develop a water demand management strategy because of global climate change and sustainable development. In 2007/08 Dunedin City Council initiated a water strategy to help determine and prioritise "renewal and new capital investment in water, wastewater and stormwater infrastructure across a 50 year planning cycle". Droughts and higher temperatures, causing drier summers and lower winter rainfalls, will significantly affect long-term water supply as it places more pressure on what are already limited water resources in many areas.

In its draft 2009 plan, Waitakere City Council highlights managing climate change and future water demand as a key issue. The plan advises considering alternative water supply sources in face of increased demand from both climate change effects and population growth. Wellington City Council notes in its draft 2009 plan that to meet future water supply demand, the effects of climate change must be taken into account.

Impacts on biodiversity

There has been a small shift in awareness and concern about climate change impacts on biodiversity from 2006 to 2009 in the LTCCPs. In 2006, only Auckland Regional Council made mention of this issue whereas in 2009 eight councils comment on the issue.

All CCP-NZ regional council and some district and city council LTCCPs express concern over the introduction of new plant and animal pests as a result of climate change. Hawke's Bay Regional Council notes that "pests have the potential to have a significant adverse effect on the region's economic prosperity and biodiversity, lifestyles and quality of living". Greater Wellington notes that pest plant and animal eradication work is changing in response to changes in pest species resulting from climate change.

Conclusions

Overall, councils are expressing more concern that climate change is happening and are including predicted effects in their current LTCCPs. There is some uncertainty related to the Central Government's climate protection policies and their impacts. However, many of the the draft 2009 LTCCPs acknowledge increased potential effects of climate change for local governemnt and more LTCCPs are including climate change actions.

Appendix 3: Electricity emissions factors

The climate change impacts of electricity efficiency savings are difficult to assess accurately, except by using accepted emission factors. The New Zealand electricity system in both the North and South Islands is interconnected through the high-voltage, direct-current Cook Strait cable. The thermal generation facilities (coal- and gas-fired power stations) are located in the North Island and generation in the South Island is 100 per cent renewable – hydropower and wind. South Island councils have a strong moral justification to their claim that their electricity usage should be seen as emission free. However, for a number of weeks in every "dry year" thermal power is pushed south to reduce the run-down of the hydro lakes.

The New Zealand Government does not accept this "emission-free-electricity" claim, and has decided that all New Zealand grid-connected electricity should have the same emission factor. The Ministry for the Environment, as lead government agency for reporting on New Zealand's greenhouse gas emissions, publishes a *Corporate GHG Reporting Guidance Manual* each year to provide assistance to companies wanting to calculate their emissions footprint. The 2007 version of this guidance manual is available from the Ministry's website.[1]

Average factors

The 2007 version of the manual recommends that corporates and government departments reporting emissions use the **average annual electricity emission factors** for reporting electricity emissions.

The annual average electricity factor is calculated from the total generation and the total fossil fuels used for electricity generation during the year. This value varies each year, from around 0.2 tonnes CO_2-e per megawatt hour in "dry years" when a lot of thermal electricity generation is required, to less than 0.17 tonnes CO_2-e per MWh in "wet years". These small changes in emission factor make a significant change in the total electricity sector emissions.

Marginal factors

The Ministry's guidance manual notes that it may be appropriate to use **a marginal electricity emissions factor** for specific electricity saving or renewable electricity generation projects.

The **marginal electricity emissions factor** is a calculated average instantaneous emission factor for the peak half-hour periods of the year and it also varies depending on the amount of thermal generation needed to meet the peak load each day. The marginal factor is not adjusted annually, and its value is based on a historic mix of thermal and renewable electricity generation and only approximates the worst-case generation mix.

The marginal factor is only calculated occaisonally as a representation of worst half-hour periods during a year, and its value has been accepted as 0.625 tonnes CO_2-e per MWh for many years. This is more than 300 per cent higher than the current annual average electricity emission factor.

In other countries where coal is the substantial electricity generation fuel the average emission factor is over 1 tonne CO_2-e per MWh, and the value depends on the quality of the coal used.

ICLEI Oceania practice

ICLEI Oceania has consistently used the annual average electricity emission factor for reporting on council baseline emissions and for reporting emissions reduction project results, as per the Ministry for the Environment's guidance. All baseline emissions inventory data reported in this document are based on the annual average electricity emissions factor values.

However many greenhouse gas emissions savings projects implemented by local government have already been reported by others using marginal electricity emissions factors.

So the reporting of total emission reductions in this report has been done using both average and marginal electricity emissions factors.

This ensures that ICLEI Oceania's reported emissions reduction results for local government electricity efficiency projects line up with reporting by other bodies on the same projects – for example in reporting associated with the annual EECA Awards', or for projects awarded credits as part of the Ministry for the Environment's "Projects to Reduce Emissions".

[1] Refer to www.mfe.govt.nz/publications/climate/guidance-greenhouse-gas-reporting-2008-09/index.html.

#	SubID	First name	Last name	Name of organisation	Your role within organisation	Comments - Please be as specific as possible to help us understand your views	I'd like to speak
118	39713	Kit	Doudney	Avon Heathcote Estuary Ihutai Trust	Chairperson	Please see attachment for our submission.	Yes

Avon-Heathcote Estuary Ihutai Trust

http://www.estuary.org.nz/

Christchurch City Council

Estuary Trust Submission
Otautahi Christchurch Climate Change Strategy Draft 2021

The Avon Heathcote Estuary Ihutai Trust

1. The Avon Heathcote Estuary Ihutai Trust (AHEIT, The Estuary Trust) is a charitable society registered in 2003. It was formed as a result of community requests over many years for the formation of an organisation that included committed representation from statutory bodies, tāngata whenua and other agencies.

2. The vision of the Trust is

Communities working together for
Clean Water
Open Space
Safe Recreation, and
Healthy Ecosystems that we can all enjoy and respect

Toi tū te taonga ā iwi
Toi tū te taonga ā Tāne
Toi tū te taonga ā Tangaroa
Toi tū te iwi

3. Further details about the Trust, it's Constitution, the Memorandum of Understanding between the Christchurch City Council, Environment Canterbury and the Trust, and the Trust's Estuary Management Plan, please visit our website at www.estuary.org.nz

Kit Doudney
Chairperson, AHEIT

The Trust's submission

We thank Christchurch City Council for their ongoing support of the Estuary Trust's work.

1. We are aware of, and acknowledge, the challenges of climate change for the Estuary and its catchments

The Avon Heathcote Estuary Trust has an understanding of the impacts of climate change.

We value the ecological components of the Estuary as a working system in itself. The species, habitats and ecosystems are very vulnerable at present, and with climate change, they will suffer from increasing negative effects. Vulnerable species, habitats and ecosystems must be protected and managed in ways that support their restoration. Healthy ecosystems are vital to the Estuary; at this time they are under threat.

2. We wish to continue to work together

3. We acknowledge that carbon can be sequestered in many parts of the estuary edge

Wetlands play a huge role in carbon sequestration.

We strongly urge the Council to proceed as quickly as possible with wetland restoration in these three areas; the Linwood Paddocks, the Bexley wetlands (especially the area formerly known as Pacific Park) and in the lower Ōpāwaho/Heathcote Rivers (where saltmarsh and saltmeadow should be protected and enhanced).

There are opportunities in those areas (and others, such as adjacent to the Te Huingi Manu Wildlife Refuge on the Western edge of the Estuary) to start protection and restoration activity. The Estuary Trust is willing to help the Council on the ground in these areas by facilitating community involvement. Work done now will be a significant contribution to the future resilience of the city in the face of climate change.

In addition, we recognize that with the climate emergency, we need to reserve habitats for nature, largely away from humans and their companion animals. One area currently in this situation is the Te Huingi Manu Wildlife Refuge (the oxidation ponds in the CCC wastewater treatment works at Bromley) and the strip of land between it and the Estuary. We request that the Council commits to continue to restrict public access to this area in perpetuity, and with our help on the ground, restore the biodiversity of the area over time. We also advocate for public access restrictions to the Linwood paddocks and Sandy Point.

4. Tidal compartment and mouth dynamics

The Estuary Trust recommends the modelling of water residence time in the estuary to assess changes to water depth (bathymetry) since the CES 2010-2012 and the effects these

changes could be having on water quality and algal growth. (CES - Canterbury Earthquake Sequence)

5. AHEIT Estuary Management Plan 2020-2030, section 4, Climate Change

Our full comments concerning climate change are presented in chapter 4 (and Protection mechanisms in section 5, and Management goals in section 6) of our Estuary Management Plan 2020 – 2030. Please contact us for an electronic copy if required.

We wish to be heard.

Yours sincerely,

Kit Doudney
Chair, Avon Heathcote Estuary Ihutai Trust Board