



Kaikoura Greenhouse Action Plan

Communities for Climate Protection - New Zealand

1. Background

As a member of the Communities for Climate Protection[®] - New Zealand (CCP[®]-NZ) Programme, Kaikoura District Council is part of an international campaign to assist councils world-wide to reduce greenhouse gas emissions. CCP-NZ is a New Zealand government initiative delivered by the International Council for Local Environmental Initiatives – Australia/New Zealand (ICLEI-A/NZ). This programme is part of ICLEI's international Cities for Climate Protection[®] campaign.

Kaikoura District Council resolved to participate in the CCP-NZ Programme in September 2004. The achievement of the following five milestones was endorsed in this resolution:

- Milestone 1 - Conduct an inventory and forecast for Community and Corporate (council) greenhouse gas emissions
- Milestone 2 - Establish emissions reduction goals
- Milestone 3 - Develop and adopt a local action plan
- Milestone 4 - Implement the local action plan
- Milestone 5 - Monitor and report on achievements.

Each milestone has an internal corporate component and a community component. Kaikoura District Council has achieved Milestone 1 and Milestone 2.

MILESTONE 1

Analysis and Forecast of Greenhouse Gas Emissions

Note: All greenhouse gas emissions are equated into a common measure of carbon dioxide equivalents (CO₂e) in tonnes (T). CO₂e is a measure of equivalent carbon dioxide produced from each greenhouse gas emissions source. For example, methane is 21 times more potent than carbon dioxide in terms of global warming potential. Therefore, 1 tonne of methane is calculated to be the equivalent of 21 tonnes of CO₂, or 21 T-CO₂e.

Corporate Emissions Analysis

The base year selected by Kaikoura District Council for the corporate emissions inventory was the financial year 2000-2001. This was due to the availability of data necessary for the completion of the inventory.

The forecast year is 2011. [This is recommended by ICLEI-A/NZ as it is within the First Commitment Period of the Kyoto Protocol, 2008-2012.] The forecast calculations are based on a 'business as usual' scenario for council's operations. This includes any new developments expected between the base year and the forecast year. Examples include calculating energy use for the new recreation centre and the newly installed streetlights.

The corporate emissions analysis is broken down into six main sectors:

- Buildings – emissions resulting from the energy use (electricity and gas) of corporately operated buildings
- Streetlights – emissions resulting from the energy use of streetlights
- Vehicle Fleet – emissions resulting from the energy use (petrol, diesel and LPG) of council-operated vehicles and machinery
- Employee Commute – a non-compulsory sector which examines emissions resulting from the energy use (petrol, diesel and LPG) of Council employees travelling to and from the workplace
- Water and Sewage – emissions resulting from the energy use (electricity, gas and diesel) by the buildings and equipment used for pumping and treatment of water and wastewater by facilities owned/operated by council.
- Waste – emissions resulting from the breakdown of organic waste originating from corporate activities and operations, such as green waste (organic waste breaks down to produce methane).

Figure 1 Highlights the percentage of corporate emissions generated from each sector during the inventory year of 1 July 2000 to 30 June 2001. Streetlights and the Water/Sewerage system are the major sources of corporate emissions both costing over \$20,000 to operate in the financial year of 2000-01.

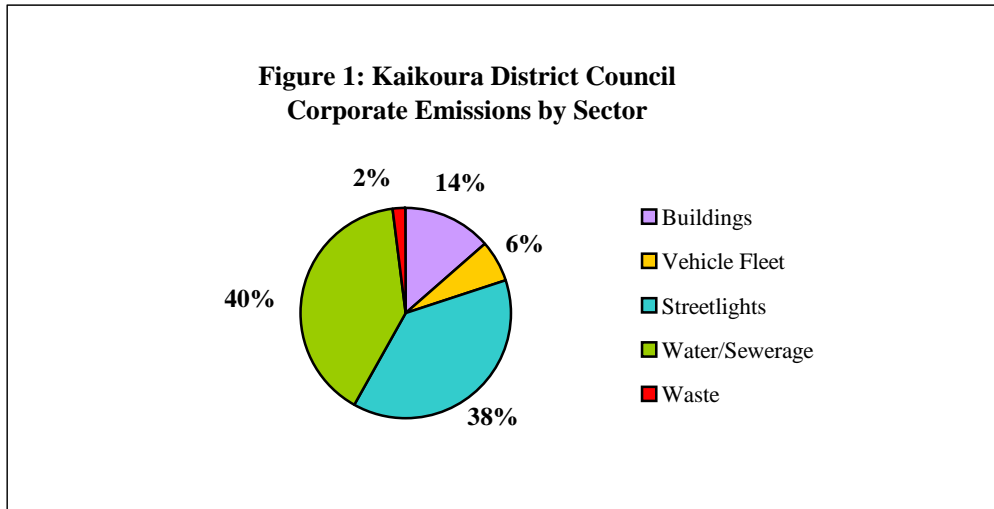
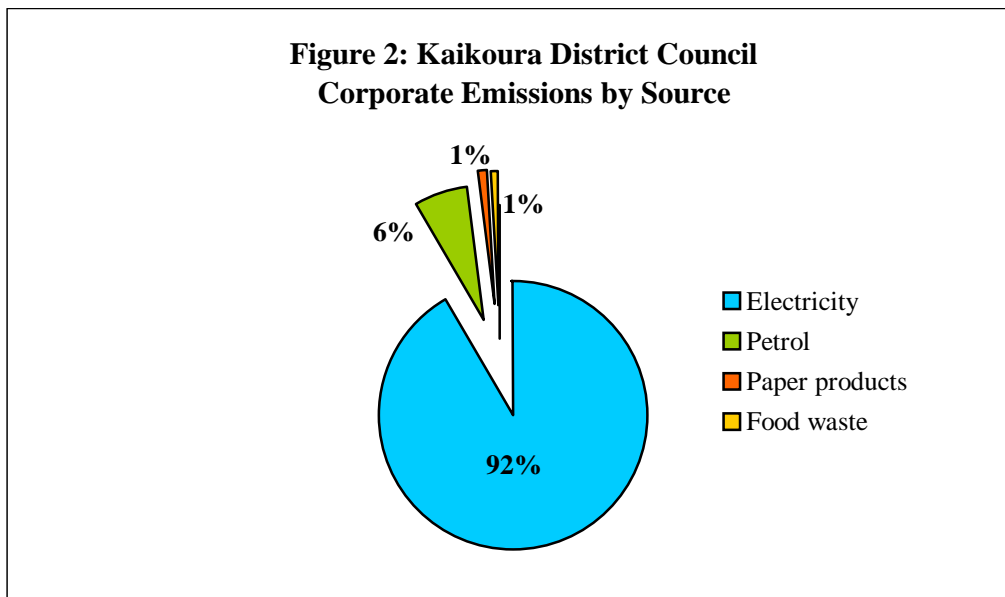


Figure 2 Provides a breakdown of corporate emissions by source. It clearly illustrates electricity consumption is the primary source of corporate greenhouse gas emissions in the Kaikoura District Council emissions. The annual costs associated with this supply of electricity are \$56,343.



Corporate Emissions Forecast

Corporate emissions are expected to increase under a 'business as usual' scenario by 111% as highlighted in Figure 3 and Table 1. Main areas of increasing greenhouse gas emissions are the water and sewerage sector, and the vehicle fleet. The overall increase can be attributed to the expected population growth in the municipality creating growth within staff employed by Council and associated services. Increases specific to water and sewerage sector can be directly attributed to the expected population growth.

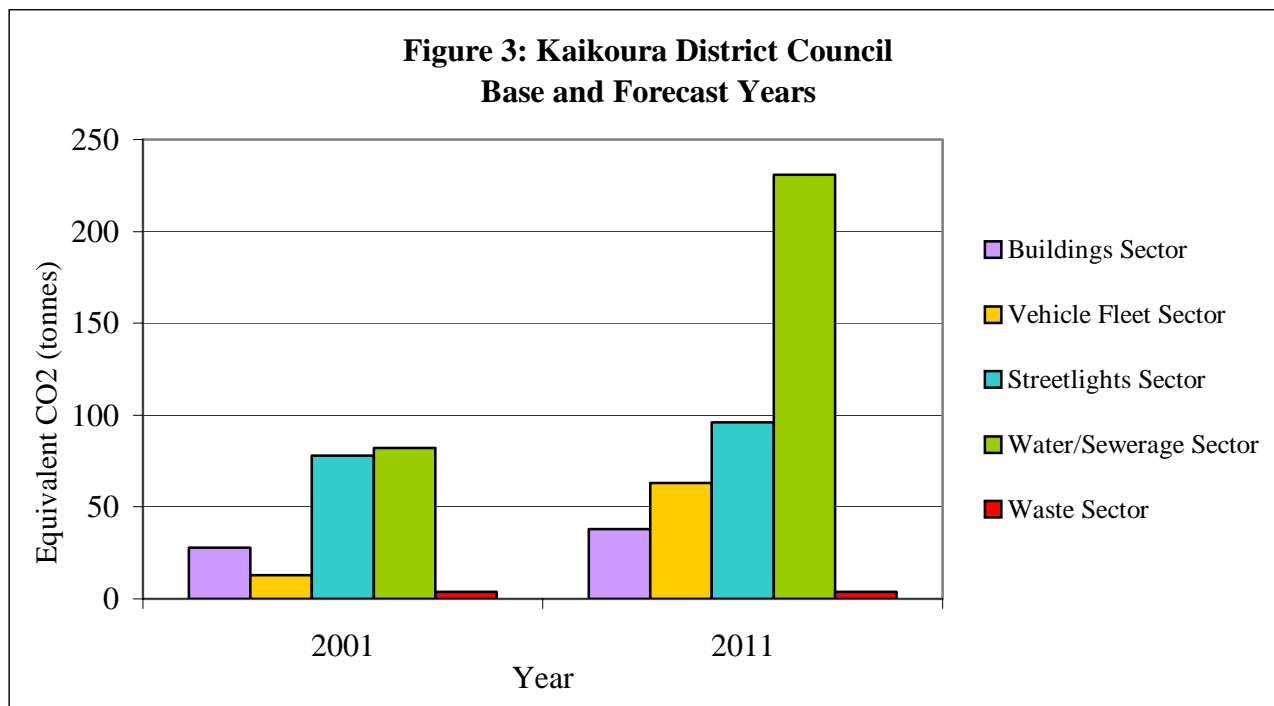


Table 1 Base Year and Forecast Year corporate greenhouse gas emissions by sector.

Sector	Year 2001 (Equivalent CO ₂ Tonnes)	Year 2011 (Equivalent CO ₂ Tonnes)	% Change from 2001
Buildings	12	16	+33
Streetlights	34	42	+24
Vehicle Fleet	13	59	+354
Waste	4	4	0
Water/Sewage	36	101	+181
TOTAL	105	222	+111

Community Emissions Analysis

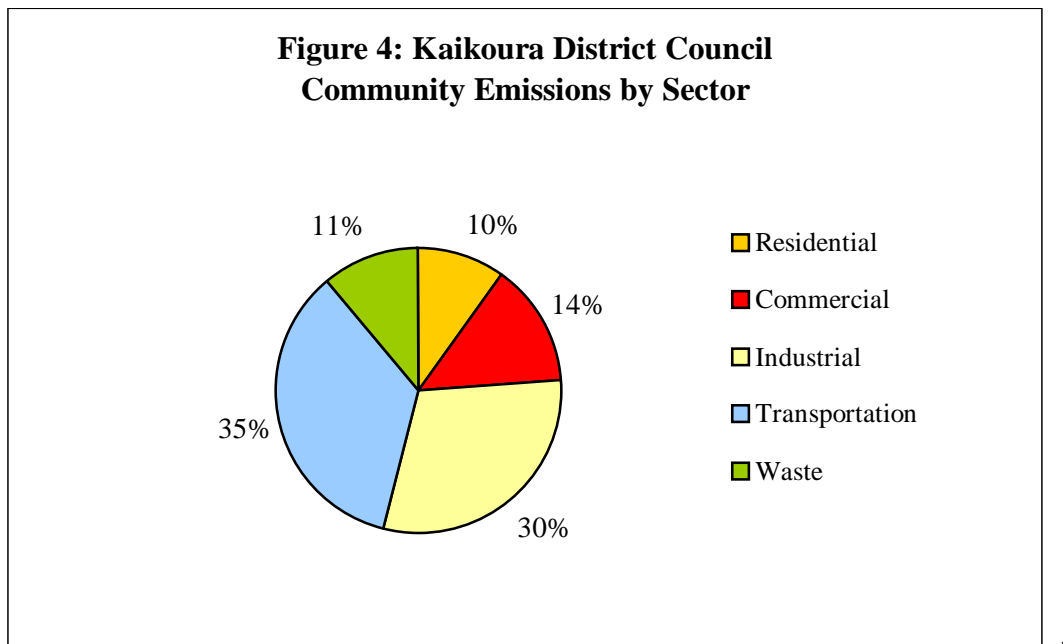
The base year selected by the Kaikoura District Council for the community emissions analysis was 2001. The reason for selecting 2001 is that it was a census year and therefore has robust data which was analysed and by ICLEI-A/NZ. ICLEI-A/NZ obtain the data from sources such as Statistics New Zealand and the Ministry for Economic Development. The forecast year for the community data is 2010. Forecast calculations are based on a 'business as usual' scenario allowing for population growth within the district and its associated effects.

The community analysis is divided into five sectors:

- Residential – emissions resulting from household energy use across the council district
- Commercial – emissions resulting from commercial operations including government and institutional activity (schools, hospitals, etc.) as well as commercial and personal services (retail, finance, etc.)
- Industrial – emissions resulting from energy in local industry operations (processing, timber milling, agriculture, construction, etc.)
- Transport – emissions resulting from energy use associated with the movement of people and goods from within the council district
- Waste – emissions resulting from the breakdown of waste originating from the community that goes to landfill.

In is anticipated that Agriculture will become another sector in the community emissions analysis, including emissions resulting from stock, cropping and other agricultural activities. However, this has not yet been finalised by ICLEI-A/NZ as a CCP-NZ sector, and may be taken into account in future inventories.

Figure 4 Illustrates the percentage breakdown of Community greenhouse gas emissions from each sector. The greatest emissions result from the Transportation sector, followed by the Industrial sector. 35% of the community’s emissions were generated from fuel consumption, which translates to 8,741 T-CO₂e.



Community Emissions Forecast

As Figure 5 and Table 2 illustrate, overall community emissions are expected to increase under a ‘business as usual’ scenario by 31%. The main area of increasing greenhouse gas emissions is overwhelmingly in the Waste sector. The overall increase can generally be attributed to the predicted population growth in the district.

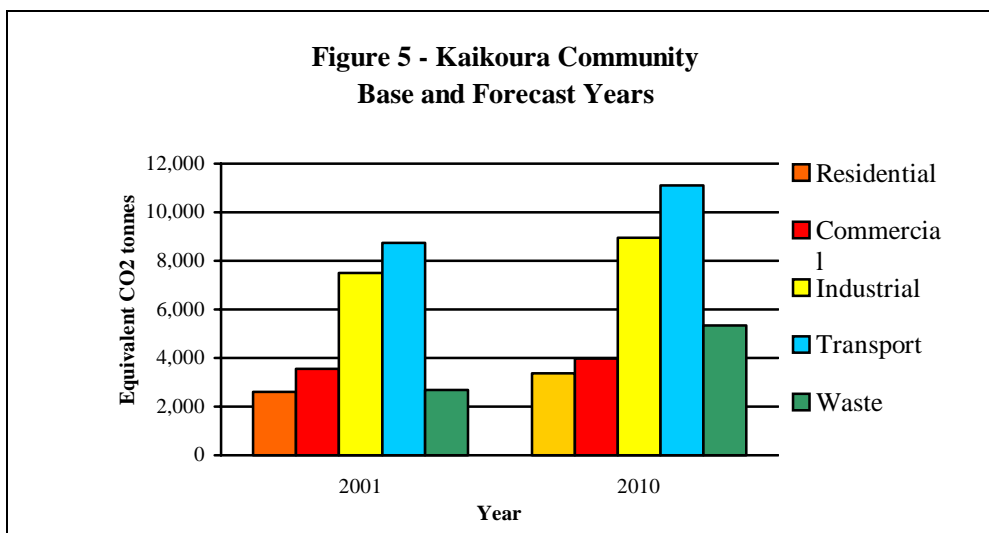


Table 2 Base Year and Forecast Year community greenhouse gas emissions by sector.

Sector	Year 2001 (Equivalent CO ₂ Tonnes)	Year 2010 (Equivalent CO ₂ Tonnes)	% Change from 2001
Residential	2,600	3,377	+30
Commercial	3,555	3,979	+12
Industrial	7,493	8,956	+20
Transport	8,741	11,099	+27
Waste	2,673	5,346	+100
TOTAL	25,061	32,756	+31

Milestone 2

Emissions reduction goals

Council endorsed the following resolution at its meeting in August 2005

Following the forecast of greenhouse gas emissions for 2011, Kaikoura District Council have endorsed the following reduction goals:

- Corporate reduction goal: 100% below 2001 emissions by 2020.
- Community reduction goal: 60% below 2001 emissions by 2015.

Both of these are felt to be achievable and goals Kaikoura would not be alone in aiming to achieve, other community's throughout the world have adopted the same or similar goals as shown in the table below;

Community	Population	Corporate Goal	Community Goal
Vaxjo – Sweden	70,000	100% by 2010	Not available
Melbourne – Australia	52,117	100% by 2020	100% by 2020
Glenorchy – Australia	44,120	70% by 2010	20% by 2010
North Sydney – Australia	59,387	50% by 2010	20% by 2010
Paramatta – Australia	148,854	40% by 2010	20% by 2010
Toronto - Canada	2.4 million	20% by 2005	20% 2005
Kapiti Coast – New Zealand	42,447	15% by 2010 & 30% by 2020	Stabilise at 2001 levels by 2010

Toronto was the first community in the world to adopt an emissions reductions goal in 1990 and a recent report commissions by the council indicated that the city has cut its emissions by 67% from 1990 levels – exceeding its goal by more than three times. All told the city had cut annual emissions from the equivalent of 2.3 million tonnes of carbon dioxides, to only 765,000 tonnes in 1998.

Vaxjo adopted a 100% reduction on corporate emissions through a policy of zero use of fossil fuels, instead using bio diesels and bio ethanol in the council fleet and through use of a biomass power plant for both electricity and heat for the town during winter.

Melbourne's goal of 100% reduction by 2020 was based on 3 strategies;

1. Designing for energy efficiency so as buildings are refurbished or built from new, design must incorporate energy efficiency measures.
2. Greening the power supply to use renewable energy in buildings and vehicles
3. Carbon sequestration, planting trees to absorb the city's CO₂ emissions

It is also important to point out that the CCP goal is flexible - it is a goal to aim for and provide inspiration rather than a mandatory target to hit or miss. It can therefore be adjusted by council at any time throughout the CCP Programme. Also the goal can again be adjusted once milestone 5 is reach which examines progress towards the goal.

Kaikoura already has a number of initiatives in place leading towards reducing emissions in the corporate sector;

- Membership and involvement in the Energy Wise Councils programme means we are working towards reducing energy use;
- Our efforts toward zero waste has reduced the councils production of waste to landfill by increasing recycling, re-use and general waste reduction practises;
- Participation in Green Globe 21 has led to a reduction in paper use in the office;
- Recent purchases of diesel vehicles, which produce less CO₂ then petrol ones;
- The development of the new administration building will also significantly reduce energy use with its energy efficient and passive solar design.

It should also be noted that the adoption of the goal of 100% reduction for the corporate sector was discussed by council staff at their fortnightly staff meeting on the 4th of August 2005. It was agreed at that meeting that a 100% reduction was achievable and that all council staff are fully committed to ensuring that it is accomplished.

Initiatives in the community sector that are contributing towards the proposed reduction goal include:

- Zero Waste has lead to a reduction in organic wastes to landfill (which is the major issue with methane (CH₄) emissions) and the recent proposals for ZORG will go even further and ensure that no more organic matter is going to landfill;
- Trees for Travellers was an initiative started to offset the community's greenhouse gas emissions;
- The Significant Natural Areas (SNA) programme which encourages landowners to protect areas of biodiversity and vegetation on their land;
- Green Globe 21 and encouraging sustainable businesses and eco designs

As a result of programmes such as these, and based on the experience of much larger communities such as Melbourne and Toronto, these goals are felt to be ambitious but achievable for Kaikoura.

As a Green Globe 21 and Zero Waste community, Kaikoura has led the way in sustainability initiatives and shown what other communities can achieve. Membership of these programmes shows the community's commitment to reducing greenhouse gas emissions and adopting these goals will once again demonstrate the strong commitment the council has dealing with this issue and to ensuring a sustainable future for the community.

Milestone 2 was awarded at Wellington in March 2005

Milestone 3

Develop and adopt a local action plan

To achieve Milestone 3 of the CCP-NZ Programme, Council is required to adopt a local action plan (LAP) outlining the strategy that will be undertaken to reduce greenhouse gas emissions.

To develop the LAP, consultation has involved Kaikoura District Council staff from each section, including planning, asset management, building, tourism, administration, environmental management, the Chief Executive Officer and a representative councillor. Consultation has included a workshop facilitated by ICLEI, input into the compilation of the LAP and final comment on the projects listed as a way forward to achieve the agreed upon reductions in greenhouse gas emissions.

As such, the Kaikoura Greenhouse Action Plan has been developed, refer to Appendix 1.

The local action plan is a dynamic document that will be implemented over a 10 year period and consequently will require ongoing reviews to evaluate progress and integrate new technologies and programmes that may arise over time. Kaikoura District Council has initiated in a number of strategies, policies, plans and programmes to deliver on the reduction in emissions that have been included in the action plan.

2. Background

It is envisaged that the Kaikoura Greenhouse Action Plan will have a range of multiple benefits, including:

Economic Benefits

- Many of the initiatives are energy efficiency initiatives that will reduce the financial losses associated with Council's energy costs.
- The plan also aims to assist members of the community reduce their energy use and waste and therefore also accrue financial savings.
- The implementation of measures within the plan may also have flow on benefits for the local economy through the development of new markets in areas such as renewable energy and the creation of local job opportunities through implementation of measures in the plan.

Social Benefits

- The improvement of public health through improved local air quality and increased options for active transport.
- The implementation of the plan will require the development of partnerships with the commercial, residential and industrial sectors of the community. This can act to improve community relations and foster a greater sense of community.
- Council will be seen as a leader on the issue by the district.

Environmental Benefits

- The implementation of the Kaikoura Greenhouse Action Plan will play the primary role in Council's contribution to the slowing of global climate change.
- It is expected that the implementation of the plan will also play a role in the improvement of local air quality and neighbourhood amenity through initiatives such as promotions of Kaikoura's recycling programme, the introduction of Zero Organics and increased use of alternative transport, wider awareness, support of and involvement in programmes such as Trees for Travellers and Green Globe.
- Efficient resource use is central to the plan and is a core environmental imperative.

3. Budget and staff implications

The role of council as a leading corporation within the Kaikoura District will provide the opportunity to lead by example and showcase its success at reducing costs through energy efficiency gains, while also reducing the greenhouse gas emissions and yet maintaining quality service levels.

The budget requirements will be assessed on an annual basis. There may be opportunity for the savings that result from the energy efficiency initiatives to be reinvested to fund additional actions through the creation of a Revolving Energy Fund (REF).

Furthermore, participation in the CCP-NZ Programme may assist Council to access central government funding for initiatives with climate change benefits.

4. Policy implications

The policies contained within the Kaikoura Greenhouse Action Plan complement the aims and commitments contained within the:

- LTCCP
- Green Globe programme
- Coastal management Strategy
- Zero Waste
- and the proposed Zero Organics (ZORG)

5. Future actions

Following adoption by Council, the staged implementation of the Kaikoura Greenhouse Action Plan will begin. It should be noted that the Kaikoura Greenhouse Action Plan is seen as a 'living document'. The target year for the reduction goals set as part of Milestone 2 is 2020 for the corporate emissions reductions and 2015 for the community reductions. As such, the Kaikoura Greenhouse Action Plan is not seen as an action plan covering all possible actions that will be undertaken during this set time frame. It is envisaged that a review of the Kaikoura Greenhouse Action Plan will occur on a yearly basis in line with the budget cycle.

The implementation of actions outlined in this plan will take Council to Milestone 4 in the CCP-NZ Programme. For Milestone 4, ICLEI will assist council to quantify the greenhouse gas emissions reductions achieved from projects implemented and will also help to track other benefits of each initiative such as financial savings.

6. Recommendations

1. That Council endorses the Kaikoura Greenhouse Action Plan (Appendix 1) and notes that this fulfils the requirements of Milestone 3 of the Communities for Climate Protection - New Zealand Programme.
2. That Council notes that consultation will be conducted on an individual and ongoing basis as appropriate for each project.