

An alternative view of climate change

While the majority of world scientists generally agree on climate change, a small group strongly dispute their views. The majority views are represented in the recent United Nations Inter-governmental Panel on Climate Change (IPCC) report which states that the mean surface temperature has fluctuated significantly for at least the last sixty years, and that global temperature has increased by 0.6°C (+/- 0.15°C) over the last century. This report provides evidence of good reasons to believe that human activity is responsible for increased atmospheric carbon dioxide (CO²) concentrations and that this greenhouse gas is a major cause of atmospheric warming.¹

The sceptics question this evidence and raise concerns about the influence on public perception of publicity and comments, such as some from Al Gore's film *An Inconvenient Truth*, that they see as exaggerated and alarmist. They see the media coverage as having created unwarranted public concern.

Al Gore, amongst others, has implicated rising CO² levels as being the primary cause of global warming since the 1950s. While there may be a correlation between atmospheric CO² increases and global temperature increases, scientists such as Dr. Arthur B. Robinson at the Oregon Institute of Science and Medicine² dispute as to whether CO² is a *cause* of global warming, or an *effect* of rises in global temperatures. Robinson claims that climate itself can also cause changes in CO² concentrations, temperature and sea levels.

In the context of environmental policy, the term *climate change* often refers only to changes in modern climate, including the rise in average surface temperature, or global warming, and the sceptics assert that there is often a presumption of human causation in any debates. The climate change sceptics highlight that climate change refers to variations in climate over time scales ranging from decades to millions of years, and that these changes can be caused by processes internal to the Earth, external forces (e.g. variations in sunlight intensity) or human activity.

Martin Durkin, in his film *The Great Global Warming Scandal*, rejects the concept of man-made climate change, calling it "a lie...the biggest scam of modern times", in favour of the sun being the culprit. The truth, he says, is that global warming,

"is a multibillion-dollar worldwide industry, created by fanatically anti-industrial environmentalists, supported by scientists peddling scare stories to chase funding, and propped up by compliant politicians and the media".³

Professor Ian Clark, palaeontologist at the University of Ottawa, states that global warming could be caused by increased sun spot activity on the sun, and that ice-core samples from Antarctica show that warm periods in the Earth's history occurred about 800 years prior to the current elevated CO² levels. Philip Stott, professor emeritus of bio-geography at the School of Oriental and African Studies in London, states:

¹ <http://www.ecoworld.com/home/articles2.cfm?tid=401>

² Global Warming Lecture, <http://www.oism.org/oism/s32p686.htm>

³ <http://wpherald.com/articles/3658/1/Global-warming-condemned-as-scam/Warming-preceded-rises-in-carbon-dioxide-levels.html>

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“The [climate] system is too complex to say exactly what the effect of cutting back on [CO²] production would be or, indeed, of continuing to produce [CO²]. At the moment, there is almost a McCarthyism movement in science where the greenhouse effect is like a puritanical religion, and this is dangerous”.⁴

The validity of the climate change arguments is challenged by Augie Auer, a former chief meteorologist and now chairman of the science panel of the New Zealand Climate Science Coalition (the Coalition). The Coalition makes the following points:

- Most of the evidence for climate change is indirect – climate changes are inferred from climate indicators such as vegetation, ice cores, sea level change and glacial retreat.
- The ten warmest years have occurred in the last decade, but in New Zealand, the early 1920’s were above averagely warm as well. Globally, there’s no evidence that the global increases in average temperature are due to man-made emissions. Indeed in the 1970’s it was believed that the world was entering a new ice age and yet the same emissions espoused as the cause of this are now being blamed for global warming.
- The snows of Mount Kilimanjaro have been disappearing way before the global warming problem started. It might go back even a hundred years.
- The ice caps are melting but it’s been warmer thirty years ago than it is now. The Antarctic is growing and the ice is thickening there. Professor Richard Lindzen states that melting, resulting in a sea level rise of a couple of millimetres, has been relatively uniform over recent centuries and that this has been due to tectonic movements. He also argues that water vapour is more responsible for climate change than CO₂ emissions and that human activity is, therefore, not a significant factor.
- Sea levels have always fluctuated. Twenty thousand years ago the sea level was 500 feet lower than it is now. All the ice melted in about 5000 years and this was all before man-made emissions. Sea level change is nothing new. In many places sea levels are rising and falling due to ocean currents. Overall, sea levels are actually falling and not rising.
- Data used to support claims of a fairly constant level of temperature over the last 1900 years and a sudden increase in the last fifty years is flawed. Indeed, temperatures in the 15th century were just as high as the 20th century. The hockey curve⁵ used to evidence that temperatures in the 20th century are unprecedented is a result of data manipulation and the same result could be generated using random numbers. The Coalition says the peer review procedure used lacked rigour.

⁴ <http://wpheald.com/articles/3658/1/Global-warming-condemned-as-scam/Warming-preceded-rises-in-carbon-dioxide-levels.html>

⁵ The hockey stick controversy is a dispute over a diagram that shows the mean temperatures in the Northern Hemisphere over the last millennium. The chart is flat over the last 1900 years and shows a sudden increase in mean temperature over the last fifty years. It does not take into account relatively warm periods such as the “Medieval Warm Period” or relatively cold periods “Little Ice Age”.
http://en.wikipedia.org/wiki/Hockey_stick_controversy

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- They are also concerned about the quality of data, such as temperature readings from surface weather stations, that is used for analysis. Using daily maximum and minimum temperatures fails to give an accurate idea of a genuine average. Vincent Gray, a Wellington-based IPCC reviewer, states that other scholars describe the increase of 0.6°C in average temperature could have significant effects, and yet individual readings can vary by up to 2.0°C. He also claims the data is contaminated as weather stations are often in unsuitable places, the total number of stations varied highly between sample years, and there was a lack of consistency in the types of station contributing data. He sees satellite data as the only source of reliable temperature readings, but as this is only available from the late 70's, there is insufficient longitudinal data to predict trends.
- If the computer models for forecasting the weather can't even accurately predict the temperature for the next day how can they be expected to predict the temperature for the next decades or centuries?
- Adaptation is more effective than mitigation, as curtailing emissions is practically impossible. The Coalition estimates that three quarters of the potential climate change has already happened so any measures to cease emissions will be too late anyway.
- The sceptics point out that a clear distinction has to be made between air pollution and CO². Rather than being a pollutant, CO² should be seen as 'the great fertiliser': plants absorb CO² from the atmosphere, are eaten by animals, and then we, in turn, eat the animals. If CO² was removed from the atmosphere, the whole cycle would stop, and life on earth would cease.

New Zealand in context

New Zealand is trying to protect its clean and green image and signed up to the Kyoto protocol, despite there being no evidence that climate change is happening and despite New Zealand's emissions being very low in comparison to other countries. New Zealand's size means that climate change initiatives are negligible on the global scale. However, the costs to the country of meeting our Kyoto commitments, particularly for farmers, would be out of proportion to the global impact.

While the Kyoto Protocol has political benefits for some countries, and economic benefits for others, New Zealand is likely to suffer from initiatives which will put more pressure on its economic drivers. New Zealand's commitment is seen by the sceptics as being largely to manage the risks to its reputation and trading opportunities.

New Zealand is a country that focuses on exports, competing with other nations in order to stay economic. The sceptics predict that the introduction of green taxes would likely erode profits and force New Zealand into recession. They say that carbon taxes imposed on air travel would significantly weaken New Zealand's tourism industry by lifting the price of air travel and reducing its affordability for the majority of potential travellers.

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Conclusion

In summary, the sceptics dispute both the evidence base and the conclusions of the majority view. They argue that New Zealand, indeed the world, is being captured by groups with hidden agendas and that much more work would be needed before any investment should be made in responses to perceptions about climate change.

LOCAL ACTION PLAN FOR ENERGY MANAGEMENT & CLIMATE CHANGE 2007

WELLINGTON CITY COUNCIL Local Action Plan for Energy Management & Climate Change

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Introduction

WHAT IS ENERGY?

Energy, in the strictest sense of the word, is defined as the ability to do work. In practical terms, energy is the fuel needed to operate machines and other equipment in our day to day lives. We need energy for a diverse range of applications from heating and lighting our homes and workplaces to providing the power for transportation. The rapid economic growth and technological innovation of western society during the last 150 years is partially due to our ability to find and harness reliable, safe and affordable sources of energy.

In general, energy can be categorised into two different groups: renewable and non-renewable. Non-renewable energy is the resulting potential from burning fossil fuels such as coal, natural gas or oil. Renewable energy is resultant from capturing and converting nature's renewable resources such as wind, sun and water.

The Wellington City Council ('the Council') uses energy to operate its vehicle fleet, buildings and provide infrastructure services such as pumping stations, streetlights and traffic lights.

The energy use of the Wellington community at large can be broken down into four key sectors: Residential, Commercial, Industrial and Transportation.

The types of energy used for the above activities include electricity, natural gas, diesel, petrol, LPG, light fuel oil, coal and wood.

BACKGROUND

In March 2006, a new initiative titled 'Energy Management Plan' went before Councillors and was approved for inclusion in the Long Term Council Community Plan 2006/07 – 2015/16 (LTCCP) which was then finalised in June 2006. It proposed that the Council draft and implement a Local Action Plan for Energy Management & Climate Change (LAP) with the primary objectives of controlling the Council's energy consumption, energy expenditure and production of greenhouse gas emissions. The secondary objective outlined in the initiative was to advocate for the achievements of these same goals within the wider community after Council's in-house energy management capabilities have been established.

The new initiative recognised the need for an Energy Manager position to implement the in-house component of the action plan through monitoring, reporting, benchmarking and business planning. It was agreed that an energy fund be allocated each year for implementing energy saving projects while the funding required for the Energy Manager was to be prioritised from existing internal resources. Currently, the funding level has been set at \$20,000 operating expenditure and \$100,000 of capital expenditure annually.

Deliverables outlined in the new initiative paper included the development and implementation of the LAP by June 2007 as well as organise and initiate savings initiatives in Council facilities and/or operations. It further detailed that during the

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2008/09 financial year, opportunities be identified for energy conservation/efficiency projects in the wider Wellington community.

PURPOSE AND OBJECTIVES OF THE LOCAL ACTION PLAN

The purpose of the LAP is to reduce the Council's energy consumption as well as increase its use of renewable energy technologies. The result of these efforts is to minimize Council's energy expenditures and control the environmental impacts of energy consumption.

The objectives of the Local Action Plan are to:

1. **avoid unnecessary expenditure** by purchasing energy and fuels at the most economic price;
2. **improve cost-effectiveness** by conserving energy and utilising energy as efficiently as practicable;
3. **protect the environment** by reducing the amount of greenhouse gas emissions caused by energy consumption;
4. **prolong the useful life of fossil fuels for future generations** by reducing, wherever possible, our dependence on fossil fuels through the use of on-site and renewable energy.

Communities for Climate Protection

There is overwhelming scientific consensus that concludes that greenhouse gas emissions ('emissions') produced from human activities are contributing to climate change through the warming of the earth's atmosphere. Evidence suggests that there will be serious negative social, economic and environmental consequences on both local and global levels if current warming trends continue.

In August 2004, Wellington City Council joined the Communities for Climate Protection (CCP) programme. In joining, the Council agreed to reduce emissions produced by Council operations and by the wider Wellington community. Through the CCP programme, the Council has committed to stabilising 2003 corporate emission levels by 2010 and reducing corporate emissions to 80% of 2003 levels by 2020.

With a number of major projects scheduled to come on line prior to the 2010 assessment, the Council could realistically expect to see a marked increase in energy consumption if no mitigating actions are taken. Already, since 2003, the Council has seen a 1% increase in energy consumption to date, despite Council's commitment to reduction.

Preliminary goals have been set for the Wellington community but will require consultation to be finalised. Community consultation is scheduled to be complete by the end of 2007. Currently, the Wellington community will stabilise 2001 CO₂ emissions by 2010, and reduce 2001 emissions by 10% by 2020.

The LAP provides clear direction on how the Council will meet the goals laid out in the CCP programme. It outlines processes and procedures necessary for the successful management of the Council energy consumption in the short and long-term.

GUIDING PRINCIPLES

The LAP has three main interdependent guiding principles:

1. ***Reduce Council Expenditure on Energy.*** The Council is ultimately responsible to ratepayers for annual budgets and rate fluctuations. By reducing energy consumption the Council will also be mitigating increases in annual operating costs and helping to keep rates growth to a minimum.
2. ***Environmentally Conscientious Business Model.*** The Council has recognized the need to reduce greenhouse gas emissions in order to help reduce and ultimately reverse the effects of global climate change. With this recognition, the Council has a moral requirement to operate its business while, at the same time, taking all necessary steps to minimize its environmental impact.
3. ***Role Model for the Wellington Community.*** The Council must demonstrate its role within the Wellington community, leading by example. Energy efficiency is one of many areas where the community looks to the Council for guidance and leadership.

STRATEGIC LINKAGES

The Local Action Plan also has linkages to several Council outcomes with the key ones being:

Outcome 4.5: More Sustainable

Wellington will reduce its environmental impact by making efficient use of energy, water, land and other resources: shifting towards renewable energy resources; conserving resources; and minimising waste.

Outcome 4.6: Safer

Wellington will have access to safe and reliable energy and water supplies, clean air, and waste disposal systems that protect public health and ecosystems.

The Council's Environmental Strategy identifies that in-house energy management planning and partnerships with the community are actions that can achieve this priority.

The number one priority under the Council's Environmental Strategy is to:

...Increase the Council's promotion of water and energy efficiency and conservation, energy security, and the use of renewable energy sources, and to take an active leadership role in these areas.

Steps towards meeting our CCP reduction goals

STEP 1: FORMALISE COMMITMENT

Writing and ratifying the LAP is a crucial step in the process towards:

- Minimising the energy expenditures for the Council.
- Reducing the Council's greenhouse gas emissions.
- Leading the community towards renewable technologies and reducing Wellington's dependency on non-renewable energy.

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- Completing corporate milestone 3: *Develop an Action Plan* in compliance with the Council's commitment to the CCP programme.

An approved LAP is the tool to ensure commitment from all personnel throughout the organization toward the common goal of meeting our CCP targets, reducing energy consumption and energy costs.

With commitment from staff at all levels within the Council, the LAP will be used as a resource for new initiatives and changes in operating practises currently employed within the Council activities. It is also a resource for staff engaging in community initiatives with energy reduction outcomes.

It is important to acknowledge that this plan will challenge the status quo and will encourage all staff to explore new and more efficient ways to consume energy. To be effective, the LAP must be a senior management mandate to ensure buy-in at all levels of the organisation.

Staff Education

Council staff are the most valuable resource available for delivering positive change not only in the Council's energy consumption but the community at large as well. For the Council to reduce energy consumption within its own portfolio as well as influence city wide energy reductions, a significant education campaign for the Council staff will be required. This campaign will be an ongoing process whereby Council staff are continually made aware of the latest technologies and practices for energy conservation through such avenues as:

- The Council Daily
- Business Unit meetings
- Organised presentations
- Workshops
- Energy Manager mentoring

STEP 2: UNDERSTAND HISTORICAL AND CURRENT ENERGY USE

The Council consumes five different forms of energy: electricity, natural gas, diesel, petrol and liquefied petroleum gas (LPG). Table 1 below outlines our 2003 baseline consumption and expenditures.

Source	Energy (GJ)	Cost (\$ NZD)
Electricity	102,454	\$4,647,535
Natural Gas	63,899	\$712,563
Diesel	36,397	\$558,012
Petrol	7,556	\$235,828
LPG	8	\$666
Total	210,314	\$6,154,604

Table 1: Baseline (2003) Consumption Data (Includes CCO consumption)

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Energy consumption is then broken down into one of four sectors. These sectors are defined as buildings, vehicle fleet, streetlights and water/sewage. Figures 1 and 2 show the Council CO2 emissions by source and sector respectively.

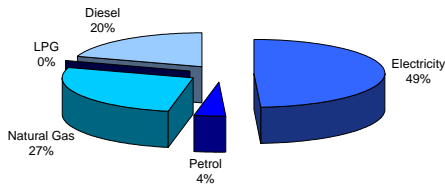


Figure 1: Council Energy Source - 2003

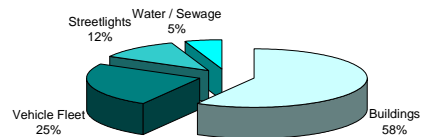


Figure 2: Council Energy Sectors - 2003

These same relationships are represented for Council expenditure in 2003 below in Figures 3 and 4.

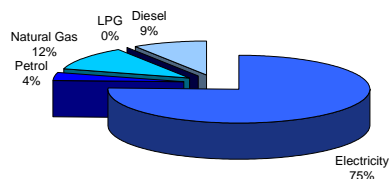


Figure 3: Council Expenditure Source - 2003

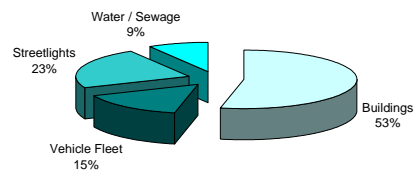


Figure 4: Council Expenditure Sectors - 2003

The Energy Manager is gathering consumption data dating back as far as is practical to provide a clear picture of the established trends in energy use within the Council. Previous to October 2006, there has not been a staff member with the explicit mandate to manage energy consumption within the Council. Once historical data is gathered and recorded, energy use moving forward will be monitored and continually analysed against the baseline data. Without a clear picture of the current consumption trends it would be impossible to measure and record the improvements made.

Gathering, organising and analysing consumption data is an ongoing process. Using monthly invoicing and reports generated from various sources, the Council's database of consumption information will continue to grow. As of January 2007, 80% of the electricity consumption Council wide is being regularly recorded and monitored. 95% of the natural gas usage and 100% of the petrol, diesel and LPG is being regularly monitored.

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Electricity

The Council uses electricity to operate buildings, streetlights, traffic lights and infrastructure such as sewage and water pumps to name just a few end uses.

Electricity consumption alone accounts for approximately half of the overall Council CO2 emissions and 75% of the Council energy expenditures.

Robust electricity consumption data for the council is being gathered and documented dating back to May 2004.

Natural Gas

Natural Gas is used primarily as a heating source for space conditioning in the buildings owned and operated within the Council. Additionally, natural gas is used for hot water heating for use in domestic water systems.

Natural Gas data dating to July 2001 is being gathered, recorded and analysed.

Diesel

The majority of diesel use within the Council is from our fleet of services vehicles. This fleet includes rubbish collection vehicles, recycling collection vehicles, earth works and infrastructure vehicles as well as smaller diesel powered trucks. In addition to vehicle fleet consumption, the Council also owns and maintains several diesel fired emergency generators that require monthly testing.

Petrol

Petrol within the Council is exclusively used for our fleet of passenger vehicles which are used by Council staff.

LPG

LPG is used primarily for smaller miscellaneous equipment such as welding equipment and various other torches. It is also used in a very limited capacity for specific vehicles in the Council fleet.

STEP 3: PLAN, PRIORITISE AND ORGANISE

All recognised publications on Energy Management support the need to thoroughly understand all the uses within an organisation prior to embarking on programmes of energy reduction. Adopting this approach will ensure that the Council is working towards meeting our CCP goals in an efficient and organised manner.

The immediate priority of the Energy Manager is to identify opportunities for improvement and prioritise the order in which to remedy any areas of inefficiency within the Council organisation. This process will be a collaborative process involving the Energy Manager as well as key personnel and Business Unit Managers representing all operations across the Council.

As a part of this planning process, a forward programme for Energy Management will be generated on an annual basis that will outline key projects to be worked on and the allocation of resources availed for Energy Management.

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As a part of the collaborative process to reduce the Council's energy use, an Energy Management Report (EMR) will be generated and presented to key personnel on a regular basis by the Energy Manager. This document will outline current trends in consumption and areas requiring further investigation. The presentation is also a forum for the exchange of ideas and information between the Energy Manager and Council energy consumers.

Once reporting and trending of energy consumption has been established, planning and organising new initiatives for energy reduction will become a repeating activity. Using the Energy Manager as a resource, Business Units will be encouraged to continually assess their energy performance and isolate areas for improvement. The first issue of the EMR will be distributed in February 2007.

As stated, it is important to understand all of the Council's energy consumption prior to embarking upon a coordinated effort to improve the status quo. However, several projects have already been initiated by Council staff. A few examples are:

- In February 2006, the Council entered into a newly negotiated electricity contract. The contract terms allow for the Council to enjoy any benefits from the fluctuations in market electricity prices.
- Relocation of the CitiOperations Business Unit to the Southern Landfill. Along with a host of other benefits, this relocation will allow the Business Unit to reduce operating costs and energy consumption associated with staff transport.
- To date, the Council has purchased four Hybrid-Electric vehicles. Vehicles that offer higher fuel efficiency will ultimately reduce our contribution of greenhouse gases to the environment.

Peer Review

In addition to planning and organising energy savings initiatives on existing infrastructure, the Energy Management Plan is an appropriate tool to be used when planning new facilities to be owned and operated by the Council. Engaging the Energy Manager as a peer reviewer for new construction, renovation, office relocations or any other asset procurement or modification will prove beneficial to not only the project team but to the Council in general.

Peer review can be a worthwhile process at any point in a project's life but is most beneficial if instigated early in the design phase of any new project. A current and very applicable example of this is the Indoor Community Sports Centre (ICSC) currently being designed for the Council.

STEP 4: IMPLEMENT SAVINGS INITIATIVES

Once savings initiatives have been recognised and prioritised, it is then the role of the Energy Manager to organise an action plan for carrying out the required change. In most cases, the Energy Manager will project manage the change to Council operations or the installation of new technologies. However, there will be cases when other personnel with the council will manage projects while using the Energy Manager as a resource for peer review of designs or to aid in energy reduction aspects of an already instigated project.

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As with all of Council operations, a policy of open consultation will be adopted to ensure that we work towards our CCP reduction goals in an organised and efficient way.

STEP 5: MONITOR AND REPORT

Continual data analysis is of paramount importance with any large organization. If the Council is uninformed with regard to the amount of energy consumed, it becomes impossible to determine the possibilities and potential benefit for energy consumption reduction. The EMR will be the vehicle with which consumption information is disseminated to the various Council Business Units and will be used to identify areas in need of further investigation.

In addition to reporting on consumption trends, the EMR will also be used to communicate current projects, recent successes, new initiatives being investigated and set measurable goals for the immediate future.

Using the data gathered and organised in step 2, steps 3, 4 and 5 become an iterative process whereby the consumption data is continually being recorded and analysed and areas of improvement will continually be found within Council operations.

STEP 6: WELLINGTON COMMUNITY ENERGY REDUCTION GOALS

Using the foundation of knowledge gathered through implementing the LAP on a corporate level the Council can then begin to influence change in the greater Wellington community. Having begun to control and monitor the corporate energy consumption and greenhouse gas emissions, the Council will then have credibility when initiating community based energy reduction programmes.

The steps to be followed in improving the Wellington community emissions are different to those already outlined for reaching our corporate objectives;

Define the Goals

As stated earlier, preliminary goals have been set at stabilising 2001 community emission levels by 2010 and reducing the 2001 emission levels by 10% by 2020. In 2007, a team of Council officers will lead a process of community consultation to clearly understand and ratify CO₂ emission goals for the Wellington community. It is assumed this consultation will include industry leaders, community members, key council staff and outside consultants that can offer expertise and experience.

Base year data has been defined as 2001 for the community CCP goals. Figure 5 below shows the relative contribution to the overall 2001 emissions by source.

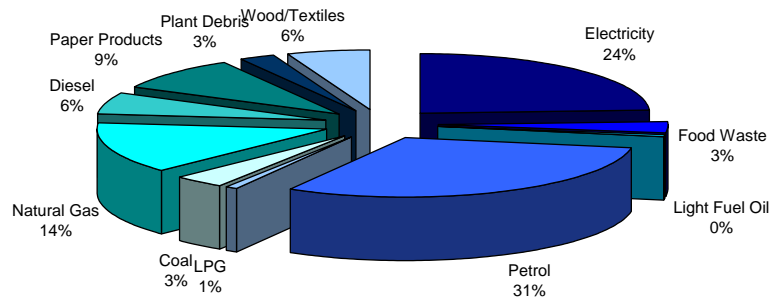


Figure 5: Wellington Community Emissions Source - 2001

The five sectors within the Wellington community are defined as: Residential, Commercial, Industrial, Transportation and Waste. Figure 6 below shows their relative contribution to the 2001 community CO₂ emissions.

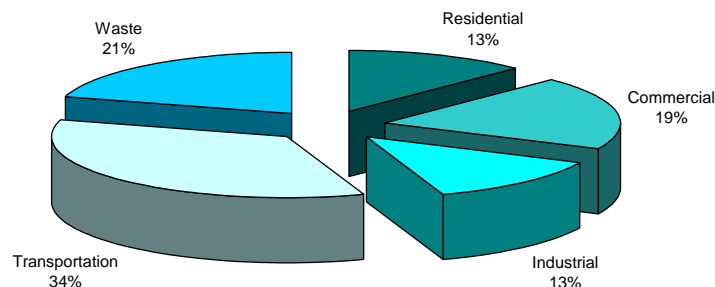


Figure 6: Wellington Community Emissions Sectors - 2001

Assign a team of Council Officers

While the programme will live under the umbrella of the Energy Manager, additional resources will be required to effectively influence change city wide. While the initiative would not make up an entire work programme for any given member of staff, the programme would be varied enough to require expertise from a wide variety of Council Officers.

Using resources within the Council a team including the Energy Manager will be formed to plan and organise community based initiatives towards reducing

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emissions. While the majority of projects embarked upon will be new, there is a range of initiatives across all five sectors of energy consumption that the Council already organises and participates in:

Residential

- Healthy homes
- Grants
- Sustainable Building Guidelines
- Education

Commercial / Industrial

- Enviro Smart
- Sustainable Building Guidelines
- Education

Transportation

- Public transport initiatives
 - Bus priority lanes
 - Johnsonville Line
 - Improvements to general system (bus shelters, real time info, etc.)
- Cycling
- Walking
 - Urban development: compact growth
 - Walking school buses

Waste

- Waste-2-energy

The LAP recognises the work already done and is to be used to facilitate new initiatives and projects.

Monitor and Report

As with all effective energy management programmes, monitoring and reporting as the community progresses toward reaching the agreed upon goals is a valuable tool in continuing to improve the Wellington environmental landscape. By using partnerships with key Wellington stakeholders, a robust system of reporting on lessons learned and positive outcomes can be developed and used as an important publication vehicle.

APPENDIX 3: Climate change engagement for Wellington City in comparison to other cities

Comparison with New Zealand Communities for Climate Protection (CCP – NZ) locations					
	City	Vision / Aim	Targets		Comments
			Community Goal	Corporate Goal	
New Zealand	Wellington		Reduction to 10% below 2001 levels by 2020 (consultation stage)	Stabilise at 2003 levels by 2010 and 20% below 2003 by 2020	WCC has undertaken a number of concrete adaptation and mitigation measures over recent years. Officers are currently seeking committee agreement for a comprehensive work programme to be developed for the medium & long term achievement of council's targets
	Christchurch	Acknowledges climate change occurrence and adopts a precautionary approach when planning for future	Has achieved CCP - NZ Milestone 1 of conducting a greenhouse gas emissions inventory, analysis and forecast	Has not achieved Milestone 2 of setting emissions reduction goals	Commissioned a report on <i>Impact of Climate Change on Christchurch City</i> and as a result, several policies were adopted and a number of initiatives taken
	Auckland	To become Carbon Neutral and tackle global warming by reducing the city's carbon footprint and encouraging greater sustainability	Has achieved CCP - NZ Milestone 1 of conducting a greenhouse gas emissions inventory, analysis and forecast	Has not achieved Milestone 2 of setting emissions reduction goals	Has identified additional annual funding of \$ 600,000 in its forward planning on climate change issues. The Council's sustainability programme represents a mix of activities under way or budgeted for. No action has been taken so far as this is a recent development
	Kapiti Coast	Prepared to address climate change concerns through a number of initiatives	By 2010, stabilise at 2001 levels and reduce 20% by 2015. Has achieved CCP - NZ Milestone 3 of developing a local action plan to achieve its goals	15% below 2001 by 2010	Kapiti is addressing climate change concerns through a number of initiatives and has identified a number of key factors to consider

Comparison with cities in other countries

(NB Many of these belong to the Partners for Climate Protection Program which is equivalent to the CCP programme. CCP has been used for all in this document.)

	City	Vision / Aim	Targets		Comments
			Community Goal	Corporate Goal	
Australia	Yarra Ranges Shire, Victoria	To become Carbon Neutral within next 12 months	By 2010, 20% reduction in emissions from 1996 levels	By 2010, 30% reduction in emissions from 2000 levels	Has formally adopted a range of innovative measures to tackle climate change. Funds have been allocated across each measure
	Melbourne, Victoria	Zero net emissions by 2020	By 2010, 20% reduction in emissions from 1996 levels	By 2010, 30% reduction in emissions from 1996 levels	In 2005-2006, was close to achieving its operational target of 30% reduction in greenhouse gas emissions, four years ahead of its target. In response, Council's Environment Committee adopted a revised Greenhouse Action Plan 2006-2010 and agreed to increase its short-term operational target to 50% reduction in emissions by 2010
	Brisbane, Queensland	To gain economically by responding to climate change and peak oil	By 2010, stabilise emissions at 2000 levels	By 2003, 20% reduction on 1990 levels, and by 2010, 45% reduction	Convened a Climate Change and Energy Task Force to advise on preparing the city for climate change and peak oil. It debated the report on 30 April 2007 and invited community feedback on the recommendations
United Kingdom	Edinburgh	To achieve a zero carbon economy by 2050	Currently no specific community CCP target, but has initiatives to help reduce emissions	Council emissions reduction, (esp. CO2) by 20% by 2015, and by 30% by 2025	Scotland's local authorities are set to be amongst the first signatories to a new Declaration on Climate Change, a common declaration of intent on climate change, part of Scotland's programme to reduce its emissions, to which local government and other stakeholders can commit
	Glasgow	Emissions reduction for city operations, and partnership with other agencies to raise awareness of the need to reduce overall emissions	By 2010, 20% emissions reduction (esp. CO2) from 1990 levels, and 60% reduction by 2050	Currently no specific corporate CCP target, but has initiatives to help reduce emissions	The Environment Strategy and Action Plan 2006-2010 sets out various initiatives to help reduce emissions and make the city sustainable. Uses the ecological footprint approach in decision making and raising awareness about sustainability issues. [The UK Climate Change Bill commits to 60% reduction in emissions by 2050 (26-32% by 2020), from 1990. (Actual emissions have just risen by 2.7%.)]

Comparison with cities in other countries (continued)

	City	Vision / Aim	Targets		Comments
			Community Goal	Corporate Goal	
United States of	New York	To ensure higher quality of life for future generations of New Yorkers, and contribute to 30% global emissions reduction	By 2030, more than 30% reduction in emissions		The New York City Plan (PlaNYC), April 2007, identifies a set of initiatives focusing on land, water, transportation, energy, air quality with sub initiatives to collectively address the challenge of global warming
	Boston	To reduce the threat of climate change, further improve energy efficiency, reduce the emission of air pollutants, and create a cleaner and greener city	By 2012, 7% reduction in emissions from 1990 levels and further reduction by 80% below 1990 levels by 2050		Has a Climate Action Plan, updated every three years, which describes the greenhouse gas emissions of municipal operations and actions that it is taking to reduce emissions
Canada	Calgary, Alberta	To reduce its per-capita ecological footprint to protect the environment and quality of life	By 2020, 20% emissions reduction from 2005 levels. Currently at Milestone 4 - to implement and quantify the benefits of policies and action plan measures	By 2012, 50 % emissions reduction from 1990 levels. Currently at Milestone 5 - to monitor progress towards the reduction goals	Joined CCP programme in 1994. Has an action plan for its corporate and community goals, and emission reduction reporting. Is Canada's first city to reach the fifth and final CCP milestone. The Government of Alberta is leading on climate change and emissions reduction with a wide range of initiatives (e.g. first legislation on GHG emissions, largest green wind power, \$100m in interest free loans for municipal energy efficiencies, \$30m for technological innovation and energy efficiency.)
	Edmonton, Alberta	To permanently reduce its greenhouse gas emissions	By 2010, up to 6% emissions reduction from 1990 levels. Currently at Milestone 4 - to implement and quantify the benefits of policies and action plan measures	By 2020, 20% emissions reduction from 1990 levels. Currently at Milestone 5 - to monitor progress towards the reduction goals	Joined the CCP programme 1995. Edmonton has a corporate action plan, emissions reduction reporting, and has a greenhouse gas reduction and energy strategy in place. Government of Alberta is taking lead (see above).