



Maribyrnong
CITY COUNCIL



Becoming Carbon Neutral Action Plan Report

11 April 2008

Submissions

Garnaut Climate Change Review

Level 2, 1 Treasury Place

Melbourne

VIC 3002

Maribyrnong City Council: Garnaut Climate Change Review

Maribyrnong City Council welcomes the opportunity to submit comments to the Garnaut Climate Change Review.

In April 2007 Maribyrnong Council resolved to be carbon neutral for its corporate operations by 2015 and present an action plan to the community to guide it to achieve carbon neutrality by 2020. In December 2007 Maribyrnong Council endorsed the community and corporate Carbon Neutral Action Plans and intend to launch them on May 22nd 2008.

Current State and Federal governments are setting targets of 60 per cent reduction by 2050. Maribyrnong City Council urges the Garnaut Review to consider proposing more stringent targets to the Federal and State governments, including interim targets, in the light of the emerging science and predicted dire consequences of not acting decisively to cut emissions.

Council presents this submission to the Garnaut Review as an expression of the willingness of local government to meet the challenge of climate change head-on. However, we are aware that this challenge is daunting and will require significant resources in the way of funding and policy commitment from State and Federal governments. Local government cannot do this in isolation and strongly recommend that this review also advocates for specific funding streams for local government, in order to confront the issues in a systematic and timely manner.



“In terms of key environmental parameters, the Earth System has recently moved well outside the range of natural variability exhibited over the last half million years. The nature of changes now occurring simultaneously in the Earth System, their magnitude and rates of change are unprecedented and unsustainable” Paul Crutzen (Nobel Laureate) and Will Steffan (International Geosphere-Biosphere Programme, 2003)¹

Executive summary

As reported in The Age² on April 8th 2008 Dr. James Hansen, a leading climate scientist and head of the NASA Goddard Institute for Space Studies in New York, says that the targets for cutting carbon dioxide emissions have ‘grossly underestimated the scale of the problem’ and must be reduced dramatically to 350ppm. He stated that the cut was needed if “humanity wishes to preserve a planet similar to that on which civilisation developed”.

In a poll for the BBC World Service published recently, almost two-thirds of the world's population say there must be urgent action to tackle global warming. The survey showed nine out of ten people want some action on climate change, and 79 % said human activity was contributing significantly to the problem³. An AC Nielson poll conducted in 2006 found that 91% of Australians thought that global warming was a serious problem.⁴

Scientific and anecdotal evidence has for many years suggested that the earth's climate is changing due to human interference. The International Panel on Climate Change (IPCC) has confirmed the enhanced greenhouse effect and the latest emerging science overwhelmingly supports the predicted serious consequences of human-induced climate change.

How will this affect local government? Services provided by governments at all levels will become increasingly vulnerable to the impacts of climate change. More heat related deaths are forecast, emergency services will come under increasing demand and road maintenance costs will be up 30% by 2100. According to the CSIRO:

“The risks to major infrastructure are likely to increase. The design criteria for extreme events are likely to be exceeded more frequently. Risks include failure of

¹ P.Crutzen, W. Steffan, “How Long Have We Been in the Anthropocene Era?”

Climatic Change, December 2003, Volume 61, Issue 3,

http://stephenschneider.stanford.edu/Publications/PDF_Papers/CrutzenSteffen2003.pdf, viewed 27 September 2007

² Pilkington, E., *Climate target is not radical enough – study*, The Guardian, 7th April 2008

³ Reuters News Service, *Global Majority Wants Action on Climate Change* ,

<http://www.planetark.com/dailynewsstory.cfm/newsid/44486/story.htm>, viewed on 25th September 2007

⁴ *Voters call for action on warming*, The Age, 7 November 2006

floodplain protection, and urban drainage/sewerage, increased storm and fire damage, and more blackouts.”⁵

The United Nations (U.N.) has highlighted the disproportionate impact that climate change will have on the socially and economically disadvantaged peoples of the world and of their inability to adapt quickly to a changing climate.⁶ There are serious social, environmental and economic consequences of ignoring the threat of human induced climate change. Therefore it is imperative that all levels of government do everything in their power to reduce their risk, and the community's exposure, to the adverse consequences of climate change.

On April 17th 2007 the City of Maribyrnong responded to the calls for greater reduction of greenhouse emissions and resolved to achieve carbon neutrality for the corporate sector by 2015 and to provide the opportunity for the community to be carbon neutral by 2020. A comprehensive Carbon Neutral Action Plan (CNAP) for the City of Maribyrnong has been developed to ensure that Council achieves those objectives.

Carbon neutral is a term used to demonstrate that all greenhouse gas emissions from energy consumption, transport and waste, are either avoided, reduced or offset, with a net result of zero emissions. The framework for achieving carbon neutrality involves setting objectives, identifying the appropriate technology to deliver the outcomes, creating timeframes, responsibilities and budgets, and being flexible enough to allow for adaptation to changing science, new technologies, government policies and community expectations.

⁵ Kevin Hennessy, CSIRO, *Climate Change Science: Evidence , Projections and Solutions*, Climate Change Energy Symposium, July 2007

⁶ Kemal Dervis, UNDP, , *Devastating for the World's Poor: Climate change threatens the development gains already achieved*, 13 August 2007, <http://www.energyandenvironment.undp.org/undp/index.cfm?module=Library&page=Document&DocumentID=6421>, viewed on 25th September 2007

Introduction - Why should Maribyrnong cut its net greenhouse gas emissions by 100%?

“Confirming scientists worst fears about the impact of climate change, Victoria faces a 10% reduction in average rainfall and a 4 degree average temperature rise over the next 60 years if carbon emissions are not slashed”⁷
The Age October 3rd 2007

“Local government provides for the health, safety and welfare of its community and if a Council cannot show that it has taken preventative action against any threat to the health, safety and welfare of its community it faces the possibility of liability costs – costs which can be reduced if a Council identifies the threats to its community and implements appropriate strategies to prevent these threats.” *Local Government Association Tasmania 2004⁸*

There is now an overwhelming majority consensus among the world’s eminent climate scientists that global climate change is having an impact on our daily lives and, if we pursue a ‘business-as-usual’ scenario, we could descend into catastrophic irreversible consequences for the majority of life forms on the planet. A recent report, *Global Warming Impact Like “Nuclear War”⁹* from the International Institute for Strategic Studies (IISS) think-tank, stated that unless urgent action is taken on climate change, then global security could be threatened by food and water shortages, on a scale similar to that of a nuclear war.

The Australian Federal Police Commissioner, Mick Kelty, also highlighted the security threat in a recent speech, warning that climate change, not the war on terrorism, poses the greatest security challenge this century. He cited China as being particularly vulnerable to any significant change in climate and possibly unable to feed its rising population. This could result in millions of hungry climate refugees moving en masse in the search for food and water¹⁰.

A stark warning issued by the U.N. International Panel on Climate Change (IPCC) in January 2007, stated that the world has just 10 years to reverse surging carbon emissions or risk runaway climate change that could make many parts of the planet uninhabitable. Richard Betts, leader of a research team at the U.K. Met Office’s Hadley Centre for Climate Change said that:

“The next 10 years are crucial, in that decade we have to achieve serious reductions in carbon emissions. After that time the task becomes very much harder.”¹¹

⁷ Rachael Kleinman, *Australia’s parched future*, The Age, 3 October 2007

⁸ *Climate Change Adaptation for Local Government* Report by SMEC Australia to the Australian Greenhouse Office, Department of the Environment and Water Resources
<http://www.greenhouse.gov.au/impacts/publications/pubs/local-government.pdf>

⁹ Jeremy Lovell, Reuters, *Global Warming Impact Like “Nuclear War”*, International Institute for Strategic Studies (IISS), 13 September 2007 <http://www.enn.com/climate/article/22981>, viewed on 14 September 2007

¹⁰ Rob Taylor, Reuters News Service, *Climate Shift is Biggest Security Risk: Australia*, 26 September 2007, <http://www.planetark.com/dailynewsstory.cfm/newsid/44520/story.htm>, viewed on 27 September 2007

¹¹ Jonathon Leake, *Ten years to reverse the global meltdown*, The Australian, 29 January 2007
<http://www.theaustralian.news.com.au/story/0,20867,21131732-2703.00.html>, viewed on 20 September 2007

According to scientists who compiled the report, their biggest fear is that rising temperatures and levels of greenhouse gases could soon engulf the natural systems that normally keep their levels in check. It is expected that carbon dioxide levels in the atmosphere will reach a dangerous threshold level of 550-600 parts per million (ppm) by 2050 or sooner under a 'business-as-usual' scenario.

As further research is carried out, new evidence emerges every week of the adverse effects of the changing climate being experienced in different regions of the planet. Earlier science indicated that the Arctic icecap has collapsed at an unprecedented rate and Arctic summers could be ice-free by 2030¹². However, according to Australian scientist Tim Flannery¹³, a report from the IPCC to be released in November 2007 would conclude, "that greenhouse gases had already reached levels with the potential to cause dangerous climate change". This has been confirmed with the release of a report prepared by Carbon Equity, *The Big Melt: Lessons from the Arctic Summer of 2007*¹⁴, which states that the Arctic's floating sea ice is headed towards rapid summer disintegration by 2013, a century ahead of the IPCC projections.

Satellite images of the North-West Passage between the Atlantic and Pacific oceans have revealed that for the first time since records were kept the entire passage is now ice-free.¹⁵

The UK climate envoy, John Ashton, stated that a scientific consensus is emerging that global greenhouse gas emissions, except those produced for food production, will have to shrink to near zero by mid-century.¹⁶ The International Panel on Climate Change (IPCC) concluded in their 2007 Working Group II Report Impacts, Adaptation and Vulnerability that:

"Most of the observed increase in global average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic greenhouse gas concentrations..... Discernible human influences now extend to other aspects of climate, including ocean warming, continental-average temperatures, temperature extremes and wind patterns."¹⁷

Accelerated climate change is having profound effects on many ecosystems and the rate is proving too fast for the flora and fauna to adapt in those regions most affected. As stated in the 2001 State of Environment Report for Australia:

"Large-scale changes in the distribution of species and biomes have occurred. However, the anticipated changes in global climate are expected to occur at a rate most biologists acknowledge as simply too fast for evolutionary processes, such as natural selection, to keep pace. Such constraints on the ability of species

¹² David Adam, "Arctic seas may soon be devoid of summer ice", The Age 6 September 2007

¹³ Kenneth Davidson, *The time has come for drastic action*, The Age 11 October 2007

¹⁴ Carbon Equity, 2007, *The big melt: lessons from the Arctic summer of 2007* First published 6 October 2007 Updated 5 November 2007, <http://www.carbonequity.info/docs/arctic.html> accessed 8th April 2008

¹⁵ Gethin Chamberlain, *Record lows in Arctic ice raise heat*, The Age 17 September 2007

¹⁶ News.com.au, Gerard Wynn, *Climate threat 'justifies urgent action'*, Reuters

<http://www.news.com.au/story/0,23599,20658939-1702,00.html>, viewed on 6 September 2007

¹⁷ IPCC, 2007: Summary for Policymakers. In: *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

to adapt to their rapidly changing habitat could substantially increase their probability of extinction.”¹⁸

According to the World Wide Fund for Nature, glaciers in China, India and Nepal are receding at an average rate of 10-15 metres per year.¹⁹ Glaciers located in the Andes are also melting so fast that some are expected to disappear within 15-25 years. These meltwaters provide drinking and irrigation water to millions of people in countries such as Colombia, Peru, Chile, Venezuela, Ecuador, Argentina and Bolivia.²⁰ Other forecasted effects of climate change include more intense storms and flooding; rising sea levels; prolonged droughts with reduced in-flows to rivers; more bush fires of greater intensity; and tropical diseases migrating north and south from the Equator.

The 1992 United Nations Framework Convention on Climate Change set an objective to ‘stabilise greenhouse gas emissions at safe levels’²¹. In 1997 the Kyoto Protocol was established to strengthen the terms of the Convention. It was to provide a fair and equitable framework for countries to collectively address the requirement for reducing our reliance on fossil fuels, and support the need for targets to stabilise greenhouse gas concentrations in the atmosphere that would prevent dangerous human interference in the climate system²². Australia and the U.S. were the only two developed countries not to have ratified the Protocol. The previous Howard Government argued that ratifying the protocol was not in Australia's interests. It reasoned that without the support of the United States - responsible for 25 per cent of the world's greenhouse emissions - the protocol was not viable²³. Guy Pearse, a speech writer for Australia's former environment minister Robert Hill, wrote a damning account of Australia's greenhouse policies in his recently published book, *High and Dry*. He stated that Senator Robert Hill, the former minister, regarded Australia's decision not to ratify the Kyoto Protocol as a ‘big mistake’

The newly elected Labor government, under Prime Minister Kevin Rudd, has since ratified the Kyoto Protocol.

The Stern report, released in October 2006 by the former chief economist of the World Bank, Sir Nicholas Stern, asserted that if action on climate change is delayed, then the effect on the world's economies would be far greater.²⁴ Economic modelling

¹⁸ CSIRO, *Australia State of the Environment Report 2001 (Theme Report)*, Biodiversity Issues and Challenges, Disturbance Regimes and Biodiversity, Human-induced Climate Change, <http://www.environment.gov.au/soe/2001/biodiversity/biodiversity04-1e.html>, viewed on 6 September 2007

¹⁹ Science Daily, *Melting Glaciers On The Tibetan Plateau*, 22 July 2007, <http://www.sciencedaily.com/releases/2007/07/070720163907.htm>, viewed 6 September 2007

²⁰ John Vidal, *Cities in peril as Andean glaciers melt*, August 29th 2006, <http://www.guardian.co.uk/environment/2006/aug/29/glaciers.climatechange>, viewed on 7 September 2007

²¹ Council of Europe, *Kyoto Protocol on climate change: need for committed international solidarity*, <http://assembly.coe.int/Documents/WorkingDocs/doc01/EDOC9058.htm>, viewed on 23 September 2007

²² United Nations Framework Convention on Climate Change *A Summary of the Kyoto Protocol*, http://unfccc.int/kyoto_protocol/background/items/2879.php, viewed 20 September 2007

²³ Ben Haywood, *The Age, A matter of protocol*, October 11 2004, <http://www.education.theage.com.au/pagedetail.asp?intpageid=1397&strsection=students&intsectionid=0>, viewed on 27 September 2007

²⁴ HM Treasury *Stern Review on the Economics of Climate Change*, http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/sternreview_index.cfm viewed on 6 September 2007

by the Allen Consulting Group suggests that a 60% emissions reduction target by 2050 would have minimal effect on the Australian economy.²⁵

Governments around the world are responding to the crisis with positive actions to reduce greenhouse gas emissions.

- The U.K. Government has set a reduction target of 60% by 2050²⁶
- California agreed to reduce emissions by 25% by 2020 and 80% by 2050²⁷
- The Norwegian Government has set a reduction target of between 50-80% by 2050²⁸
- The G8 Summit in Germany in June 2007 agreed to consider cutting global emissions by at least 50% by 2050.²⁹
- The Victorian Government has committed to a 15% improvement in building energy efficiency and to purchase 10% of electricity in the form of green power.³⁰ It has also introduced a Mandatory Renewable Energy Target (VRET) scheme, which came into force on January 1st 2007 that will require electricity retailers to purchase a minimum of 10 per cent renewable energy by 2016.³¹

Businesses and communities are also responding to the urgency of the climate change 'dire consequences' scenario. Six of Australia's largest companies, Westpac, BP, Origin Energy, Visy and insurers Swiss Re and IAG, called on the Australian Government to reduce Australia's greenhouse gas emissions.³² Rupert Murdoch's News Corporation has pledged to be carbon neutral by 2010. In a speech in New York shown to News Corp employees around the globe, Mr Murdoch stated that:

"Climate change poses clear, catastrophic threats. We may not agree on the extent, but we certainly can't afford the risk of inaction. We must transform the way we use energy."

Mr Murdoch also acknowledged that going carbon neutral was 'good business', as the issue attracted increasing levels of public awareness and support. In May last year, BSkyB, the British satellite broadcaster and News Corp subsidiary, became the first media company in the world to become carbon neutral to combat the "clear, catastrophic threats" posed by climate change.³³

²⁵ Tim Colebatch and Rod Myer, *Companies urge action on warming*, The Age, 7 April 2007

²⁶ U.K. Parliament, October 2003, *The Energy White Paper – Empowering Change?*
http://www.parliament.uk/parliamentary_committees/environmental_audit_committee/eac_22_07_03.cfm, viewed on 6 September 2007

²⁷ Pew Centre on Global Climate Change, *States with greenhouse gas emission targets*,
http://www.pewclimate.org/what_s_being_done/in_the_states/emissionstargets_map.cfm, viewed on 6 September 2007

²⁸ Norwegian Commission on Low Emissions, *A climate-friendly Norway*, 4th October 2006,
http://www.lavutslipp.no/article_1334.shtml, viewed on 6 September 2007

²⁹ Matthew Warren, *Storm over IPCC's chairman's comments*, 23 August 2007,
<http://www.theaustralian.news.com.au/story/0,25197,22290419-30540,00.html>, viewed on 6 September 2007

³⁰ Victorian Government, *Government leadership*, <http://www.greenhouse.vic.gov.au>, viewed on 6 September 2007

³¹ Victorian Government media release, *Victoria leads nation on renewable energy targets*, 26 October 2006

³² The Age, *Companies urge action on warming*, 7 April 2006,
<http://www.theage.com.au/news/national/firms-urge-action-on-warming/2006/04/06/1143916656710.html>, viewed on 7 September 2007

³³ News.com.au, *News corporation to be carbon neutral by 2010*, 10 May 2007,
<http://www.news.com.au/story/0,23599,21704218-2,00.html>, viewed on 7 September 2007

A new report has revealed that Australian industry believes environmentally sustainable practices are both a business opportunity and a social responsibility³⁴. The survey demonstrated that companies were genuinely concerned about greenhouse gas emissions and were implementing measures to reduce their consumption of electricity, gas and water. Some key findings of the survey included:

- The majority of companies (56%) saw opportunities from climate change to promote their company as socially responsible and to improve energy efficiency and lower costs;
- The vast majority of companies (78%) believe they had a responsibility to contribute to a reduction in carbon emissions, even if it adds some costs to the business;
- Businesses regard the highest risks from climate change to be market risks, such as a loss of competitiveness (26% of firms) from higher costs;

The community is now demanding clear and concise action on reducing Australia's contribution to greenhouse gas emissions. According to a Newspoll survey commissioned by Greenpeace, Get Up and the Nature Conservation Council conducted in November 2006³⁵:

- 91% of Australians want Australia to shift away from reliance on coal-fired power stations to renewable energy sources
- 86% believe that the Federal Government should be doing more to tackle climate change
- 92% do not believe that the Federal Government is not doing enough to encourage clean technologies
- the overwhelming majority of Australians want Australia to ratify the Kyoto Protocol

This is an unequivocal plea by the community to local, State and Federal Governments to take action now on the issue of climate change.

How much does Australia contribute to the world's greenhouse gas emissions?

“Observational evidence from all continents and most oceans shows that many natural systems are being affected by regional climate changes, particularly temperature increases.” IPCC Summary for policy makers 2007³⁶

According to the United Nations Human Development programme report, Australia's emissions of greenhouse gases are the 3rd highest per capita in the Western world.³⁷ Australia, with 0.32 per cent of the world population, contributes 2.3% of the world's CO₂ emissions from fossil fuels and now ranks in the top 12 emitting countries by volume.³⁸ Over the last 25 years, the average growth rate of Australian's emissions

³⁴ Australian Industry Group, *Environmental Sustainability and Industry – Road to a Sustainable Future*, http://pdf.aigroup.asn.au/environment/enviro_sustain_indust_report.pdf, viewed on 18 September 2007

³⁵ ABC News on-line, *Voters urge more action on climate change: pol, l* <http://www.abc.net.au/news/newsitems/200611/s1779238.htm>, viewed on 6 September 2007

³⁶ IPCC Summary for policy makers, <http://www.ipcc.ch/>, viewed on 6 September 2007

³⁷ Human Development Report 2007/2008 *Fighting climate change: Human solidarity in a divided world* <http://hdr.undp.org/en/reports/global/hdr2007-2008/> viewed on 27 November 2007

³⁸ CBC News Canada, *The dirty dozen: The top 12 greenhouse gas emitting countries in the world* <http://www.cbc.ca/news/interactives/qmaps/greenhouse-emitters/> viewed on 19 October 2007

was approximately twice the growth rate for the world as a whole, twice the growth rate for the USA and Japan, and five times the growth rate for Europe.³⁹ The UN figures leave out land use changes. They show that between 1990 and 2004, Australia increased its emissions by 25 per cent, from 423 million tonnes a year to 529 million tonnes.⁴⁰ Table 1 from the Australian Greenhouse Office, includes land use figures in the total CO₂ emissions figures, which enables Australia to move towards its Kyoto target, and shows the substantial increases in energy and transport emissions. In 2004, on a per capita basis, Australia's greenhouse gas emissions were 28.2 tonnes CO₂.

Table 1: Summary of Australia's Greenhouse Emission Profile

Greenhouse Emissions Sector	Equivalent CO ₂ (million tonnes)		% change in emissions
	1990	2004	1990 to 2003
Stationary Energy	195.7	279.9	43.0
Transport Energy	61.7	76.2	23.4
Fugitive Emissions Energy	30.0	31.0	3.4
Industrial Processes	25.3	29.8	18.0
Agriculture	91.1	93.1	2.2
Land use, land use change & forestry	128.9	35.5	-72.5
Waste	19.2	19.1	- 0.7
Total	551.9	564.7	2.3

Source: National Greenhouse Gas Inventory 2004⁴¹

³⁹ CSIRO, *CO2 emissions increasing faster than expected*, <http://www.csiro.au/news/GlobalCarbonProject-PNAS.html>, viewed on 6 September 2007

⁴⁰ Tim Colebatch, *The Age*, *Our weight in gas daily*, 2 November 2006, <http://www.theage.com.au/news/national/our-weight-in-gas-daily/2006/11/01/1162339918799.html>, viewed on 6 September 2007

⁴¹ Australian Greenhouse Office (2004): "*National Greenhouse Gas Inventory 2004*", Department of the Environment and Heritage



The City of Maribyrnong

“Local governments will need to take a big role in helping Australia cope with climate change. This would include reviewing their policies on everything from stormwater drainage to bushfire management and pest control. Their role in managing climate change impacts is critical.” Malcolm Turnbull, The Age 4 October 2007

The City of Maribyrnong is 31.2 sq km in area and has a population of over 63,000. It is the smallest and most densely populated municipality in the metropolitan area.

The City of Maribyrnong borders Melbourne, which is Australia's second largest city and Victoria's capital city. This central location provides easy access to all the benefits of Melbourne, such as the ports, the best road network in Australia and an extensive public transport system.

The City of Maribyrnong is undergoing a period of significant change. A number of large redevelopment opportunities have emerged from changes in land use as a result of the restructuring of manufacturing industries and the almost wholesale relocation of the Commonwealth defence industries that once provided many thousands of jobs in the area.

Currently, 38.8% of residents were born outside Australia. The population comes from more than 135 different countries, speaking more than 85 languages. A significant number of new arrivals are from China, the Horn of Africa, India, and more recently Burma.

Local Governments can be at the forefront of social, economic and environmental change, as it is the level of government closest to the people and, therefore, has the capability to influence and implement policies and act as an agent of change within a very short timeframe.

The Australian Greenhouse Office states that:

“Local government and communities have a vital role to play in Australia's efforts to reduce greenhouse gas emissions. Local council decisions influence activities that contribute to a considerable proportion of Australia's greenhouse gas emissions. Through their legislative responsibilities, spending powers and links with the community, local government can influence not only the emissions generated by their own activities, but also by local households, businesses and organisations.”⁴²

In a report released on October 4th 2007 the former Federal Environment Minister Malcolm Turnbull warned that Councils could face significant legal liability costs if they failed to identify threats to their regions from climate change. Compensation

⁴² Australian Government, Australian Greenhouse Office, *Reducing greenhouse emissions: What local government can do*, <http://www.greenhouse.gov.au/local/reduction/index.html>, viewed on 27 September 2007

claims and claims for negligence against Councils could also result as a consequence of global warming. Some of the identified risks from global warming included damage to boat ramps and marinas from more intense storms and food and water-borne diseases caused by higher temperatures.⁴³

Maribyrnong Council has previously committed to reducing its greenhouse gas emissions through the International Council for Local Environment Initiatives (ICLEI) Cities for Climate Protection programme (CCP). In 2002 Council resolved to reduce its corporate emissions by 20% by 2010, based on 2002 levels and also encourage the community to reduce its emissions by 20% based on 1996 levels. Council is currently at Milestone 4 of the 5 Milestones programme.

The Greenhouse Reduction Strategy was formally adopted by Council in April 2007 and set out Council's goals and strategies to reduce its greenhouse gas emissions. Council has a number of actions currently in place in order to achieve the corporate and community reduction targets, including:

- Membership to Western Alliance for Greenhouse Action
- Green Travel Plan
- Membership of Greenfleet to offset greenhouse emissions
- Optional choice of smaller fleet vehicle or additional salary in lieu of vehicle
- Provision of recycling collection services
- Tenants and Landlords Program to reduce energy in rental accommodation
- Village Green Program assists 40 local businesses to be sustainable
- Green Business Program assists 12 local Vietnamese businesses to be sustainable

Proposed future actions from the strategy include:

- Energy performance contracts for 5 major buildings
- Energy efficiency in remaining Council buildings
- Review of Council fleet policy and use
- Use green power for the 7 largest council sites, then progressively to all sites
- Energy efficient street lighting
- Use of planning permit system to promote ecologically sustainable developments

How much does the City of Maribyrnong contribute to Australia's greenhouse gas emissions?

In 2002 Council conducted an inventory of its greenhouse gas emissions from the community and corporate sectors. CO_{2-e}⁴⁴ emissions from Council operations totalled 12,785 tonnes, which included streetlighting, sewage and water, vehicles, buildings and waste. The community sector CO_{2-e} emissions for 2001 totalled 1,452,190 tonnes, which included the residential, commercial, industrial, transport and waste sectors. Council's contribution to the total greenhouse gas emissions for the City of Maribyrnong is 0.88%. Electricity use in buildings and streetlights, sourced from coal-fired power stations, is approximately 89% of Council's CO₂ emissions at a cost of \$1,017,406. The vehicle fleet accounts for 10% of Council's emissions.

⁴³ Marian Wilkinson, The Age, *Councils warned on climate change*, October 4 2007

⁴⁴ CO₂e is an abbreviation of 'carbon dioxide equivalent' and is the internationally recognised measure of greenhouse emissions. Using CO₂e as a measure of greenhouse emissions allows for comparing the greenhouse impact of a variety of greenhouse emissions sources.

In the community sector the largest emitter of CO₂ is from industry, followed by residential, commercial and then transportation. The City's per capita emissions for 1996 were 23.1 tonnes of CO₂ per person. In 2001 they were 24.4 tonnes, an increase of 1.3 tonnes per person.

(Note: the Community data is an estimate only; it meets the standards of the CCP Milestone Process, in that it can be used to create a profile of community emissions).

Table 3: Summary of Community Greenhouse Emissions

Sector	Equivalent CO ₂ (tonnes)	% of total
Base Year (1996)		
Residential	231,133	17%
Commercial	219,387	16%
Industrial	707,685	52%
Transportation	152,596	11%
Waste	49,548	4%
Total	1,360,349	100%
2001		
Residential	251,599	18%
Commercial	225,201	15%
Industrial	730,174	50%
Transportation	170,106	12%
Waste	75,110	5%
Total	1,452,190	100%
2010 – Predicted levels under “business as usual” approach		
Residential	241,934	14%
Commercial	340,530	19%
Industrial	907,074	52%
Transportation	202,047	12%
Waste	56,684	3%
Total	1,748,269	100%

Source: Australian Bureau of Statistics' 1996 Census,⁴⁵ Australian Bureau of Agricultural and Resource Economics,⁴⁶ CCP Australia default data⁴⁷

⁴⁵ Australian Bureau of Statistics, 1996 Census Data, <http://www.abs.gov.au> viewed on 10 September 2007



Carbon Neutral - What does carbon neutrality mean?

“Carbon neutrality can be defined as a state whereby, in any one year, a business has no net carbon emissions as these have been either reduced in absolute terms for the business and the remainder offset, or have been offset without any attempt at reducing the emissions generated by the business.”⁴⁸

What is the distinction between ‘carbon neutrality’ and ‘carbon offsets’?

Achieving carbon neutrality requires reducing the overall net CO₂-e emissions of your operations to zero tonnes, while satisfying the operational requirements of your business. Carbon offsetting is a means to achieve that goal. Purchasing carbon offsets without attempting to reduce emissions through energy efficiency measures is considered by the Total Environment Centre, in their recently published discussion paper *Carbon Neutral Watch – Corporates, Consultants and Credibility*:

“.....to be the lowest quality means of achieving carbon neutrality and should be discarded as a benchmark.....However, we do not regard the purchase of offsets, while otherwise carrying on with business-as-usual, as carbon neutrality.”⁴⁹

There is no mandatory accreditation scheme in Australia for carbon offsets and companies operate in a voluntary carbon market, which has the potential to create greater uncertainty in dubious schemes. Consequently, there is now a growing body of evidence that the use of carbon offsets to reduce greenhouse gas emissions is limited.⁵⁰ Every effort should therefore be made to reduce emissions prior to seeking offsets.

Carbon neutrality can be achieved through a combination of adjustments in how energy is purchased and utilised, transport choices, waste disposal or carbon offsets. Examples could include avoidance of energy use through behaviour change, shifting to energy efficient lighting and appliances, purchasing green power and green gas for all your energy requirements, catching public transport, the use of alternative transport fuels, recycling, composting organic waste and finally, buying carbon offsets to neutralise the remaining CO₂ emissions (see fig.1).

What is an offset?

A greenhouse gas (GHG) offset is generated by the reduction, avoidance, or sequestration of GHG emissions from a specific project. Offsets are so named

⁴⁶ Australian Bureau of Agriculture and Resource Economics, <http://www.business.gov.au> viewed on 10 September 2007

⁴⁷ Cities for Climate Protection™, *Default Community Data Workbook*

⁴⁸ Environment Agency U.K., *Carbon Management & Carbon Neutrality in the FTSE All-Share* www.environment-agency.gov.uk/commodata/acrobat/carbon_man_report_1420170.pdf viewed on 6 September 2007

⁴⁹ Total Environment Centre, *Carbon Neutral Watch – Corporates, Consultants and Credibility*, May 2007

⁵⁰ Christian Downie, Australia Institute, *Carbon Offsets: Saviour or cop-out*, August 2007

because they counteract or offset greenhouse gases that would have been emitted into the atmosphere; they are a compensating equivalent for reductions made at a specific source of emissions.⁵¹

Carbon offset measures

There are several documented methods to offset CO₂ emissions:

1. Energy efficiency improvements resulting in reduced energy demand e.g. substituting incandescent light globes for compact fluorescent lights, room light and movement sensors, cogeneration plants, solar hot water, fuel efficient vehicles and alternative fuels.
2. Substituting a high carbon emission non-renewable energy source, such as coal, to a low or zero carbon emission renewable source such as solar or wind
3. Biosequestration of emissions through forestry re-vegetation projects, such as Greenfleet.
4. Flaring landfill gas to reduce emissions or capturing the gas to power localised generating systems.

Why carbon neutral?

“The future is not somewhere we’re going, but something we are creating”
Professor Ian Lowe 2007⁵²

“Where there are threats of serious or irreversible environmental damage, lack of full scientific certainty shall not be used as a reason for postponing cost effective measures to prevent environmental degradation.”⁵³ Precautionary Principle

As previously discussed, Australia has the dubious distinction of being the 3rd highest per capita emitter of CO₂ on the planet. The concept of carbon neutrality is relatively new and a number of high profile businesses and government departments are embracing the notion of becoming carbon neutral, for both profit motives and perceived corporate responsibility. Other reasons for achieving carbon neutrality include reducing exposure to, and the accompanying risk, of higher energy charges; positioning your organisation favourably in a carbon economy; to take advantage of the inevitable future carbon emissions trading opportunities; and demonstrating leadership in the absence of political will at higher levels of government.

On 17th April 2007 Maribyrnong City Council made a commitment to become carbon neutral. The Council set targets to achieve carbon neutrality for the corporate sector by 2015 and for the wider community living within the City of Maribyrnong’s boundaries by 2020.

⁵¹ The Climate Trust, *Offsets Are Part of the Solution!*, http://www.climatetrust.org/about_offsets.php viewed on 6 September 2007

⁵² Ian Lowe, Rick Farley Lecture Series: How can we create a sustainable future for Australia? 11 February 2007, 2007 <http://www.abc.net.au/rn/bigideas/stories/2007/1842533.htm>, viewed on 19th September 2007

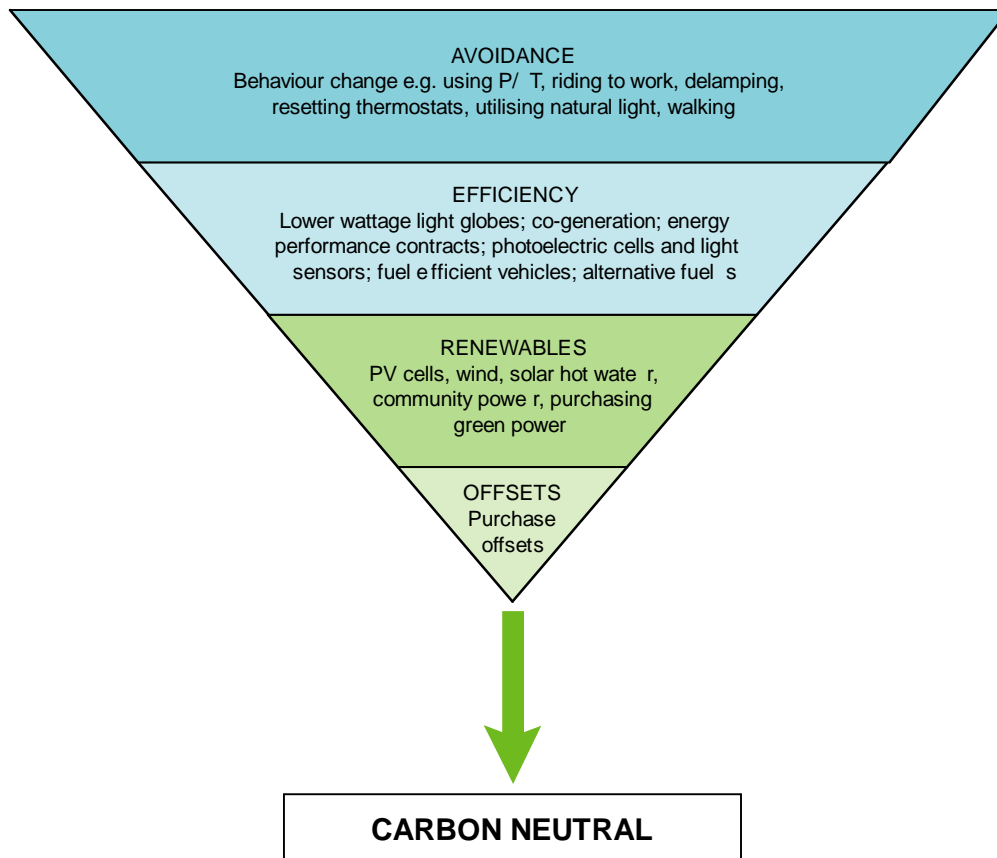
⁵³ United Nations Conference on Environment and Development, Rio, 1992 *The Precautionary Principle, Rio Declaration*

Carbon Neutral = Carbon Credible?⁵⁴

*Recent years have also seen the rapid growth in the Australian carbon offset market as growing concerns of climate change have come to permeate all levels of government, business and the community. It's chaotic, with a proliferation of consultants and various accreditation schemes. Some don't even bother about being accredited.*⁵⁵

The fundamental premise of a carbon neutral strategy is to reduce reliance on carbon-based energy and increase reliance on renewable forms of energy such as solar and wind. The central framework of Council's carbon neutral strategy, which will apply to both the corporate and community sectors, will take the form of a greenhouse gas reduction hierarchy (see Fig 1). Partnerships and engagement with the community, industry and the commercial sector will form an integral element of Council's carbon neutral strategy.

Fig. 1



- **Avoidance** – Awareness raising; behavioural change policies;
- **Efficiency/reduction** - technological improvements in efficiency and reduced waste;
- **Renewables** - accredited green power (solar, wind or biomass); community power scheme; solar hot water; PV cells
- **Carbon offsets** - Only accredited carbon offset schemes will be employed eg Greenfleet

⁵⁴ Total Environment Centre, *Carbon Neutral Watch – Corporates, Consultants and Credibility*, p.2

⁵⁵ Total Environment Centre, *Carbon Neutral Watch – Corporates, Consultants and Credibility*, p.2



Carbon Neutral Action Plan (CNAP)

“The next ten years are crucial, in that time we have to achieve serious reductions in carbon emissions. After that time the task becomes very much harder.” Richard Betts, U.K. Hadley Centre for Climate Change⁵⁶

The CNAP will be divided into two sections, the Corporate Action Plan and the Community Action Plan. It will be a staged plan, with interim targets leading up to the 2015 corporate objective of carbon neutrality and a template of initiatives and opportunities for the 2020 community objective. The plans will allow for flexibility in delivery and goal setting in order to respond to new technologies, science, policies and budget limitations. Details of costs will be presented where known and estimated where necessary. Consultation within Council and with community groups will be undertaken to achieve equitable and sustainable outcomes. It is acknowledged that the Community goal can only be achieved with the full cooperation of the residents and local businesses.

Personal behaviour change is essential in order to effect any significant change in community emissions, whether that is achieved through buying green power, turning off lights, or using public transport. Simple changes in lifestyle patterns and consumer choices that give emphasis to environmental considerations can make a huge difference. As a community we cannot wait for the 'big technological fix' to reduce carbon dioxide levels in the atmosphere. We have to start now, and it requires innovation, courage and a belief in our obligation to ensure the security of the current generation and that of future generations. Local Government has a responsibility to provide the tools and opportunities for achieving that goal. Established partnerships with other tiers of government, business and the community will be maintained. Further opportunities and partnerships will be identified and explored in order to strengthen Council's commitment to achieving a sustainable outcome for the community.

Council acknowledges that the Community Action Plan is a long term programme, requiring a regular injection of resources and funding over the 12 year implementation period, in order to achieve carbon neutrality. Council will need to work closely with the community, including both business and residents, to develop meaningful working partnerships and an understanding of their changing needs and aspirations. External funding opportunities from the Federal and State governments will be identified and pursued throughout the life of the programme.

Council also acknowledges the need to address issues such as food production and food miles, over consumption, embodied energy and life cycle analysis in any discussion on carbon neutrality. However, due to the complex nature of these concerns, it has been determined for now to recognise that these are matters that

⁵⁶ Richard Betts, *Ten years to reverse the global meltdown*, January 29, 2007
<http://www.theaustralian.news.com.au/story/0,20867,21131732-2703,00.html> viewed on 19th September 2007

require extra resources and ongoing research prior to the formulation of any course of action.

Corporate Carbon Neutral Plan

Council had previously set a target of 20% emissions reduction by 2010. Currently we have reduced our emissions from the base year by 13% through several initiatives already undertaken:

- Purchase of LCD monitors to replace the old CRT style of monitor;
- Purchase of green power for streetlights and buildings;
- Downsizing the vehicle fleet from 6 cylinder to 4 cylinder cars;
- Converting petrol vehicles to LPG;
- Energy efficient lighting
- Membership of the Western Alliance for Greenhouse Action (WAGA)
- Smart meters in high energy use sites

It is envisaged that by the end of 2010 Council will have achieved a 56% reduction in greenhouse gas emissions through implementation of the Energy Performance Contracts, changeover of high energy mercury vapour streetlights to compact fluorescents, cogeneration at the Aquatic centre, the increased purchase of green power, staff behaviour change and minor building tune-ups. Staged targets will be set for the period 2010 - 2015, culminating in zero net emissions by 2015.

Proposed initiatives include:

- Energy Performance Contracts (EPC) for major energy use sites
- Building 'tune-ups' for smaller sites
- Sustainable Public Lighting Action Plan – improved efficiency of streetlights
- Alternative fuel vehicles e.g. electric, LPG, CNG, bio-diesel
- Tradeable energy quotas for all departments
- Cogeneration/Trigeneration plants for major facilities
- 100% green power purchase for buildings and streetlights, paid for in part by energy efficiency savings,
- Behaviour change e.g. using P/T, riding to work, resetting thermostats, utilising natural light, walking, resetting timers on after-hours lighting systems
- Lower wattage light globes; delamping; co-generation; gas hot water; photoelectric cells and light sensors; fuel efficient vehicles; alternative fuels, energy performance contract, building tune up, streetlight changeover
- Activate power saving mode on all electronic equipment including copiers, printers, fax machines, computers and monitors; timers on electric hot water boilers
- PV cells, solar hot water, community power, purchasing green power
- Purchase offsets
- Lobbying Federal and State governments for changes to renewable energy targets, tax incentives for alternative fuels, increased spending on public transport infrastructure; increase tax on recreational 4WDs; mandate for improved vehicle fuel efficiency
- Review Council policies to reflect Council's carbon neutral status including, Integrated Transport Strategy, Municipal Strategic Statement and Council Plan.



Community Carbon Neutral Plan

“We already have the technologies to commence a rapid transition to an energy future based on renewable energy and efficient energy, with gas playing the role as an important transitional fuel. The barriers to this transition are not primarily technological or economic, but rather are the immense political power of vested interests”⁵⁷ Mark Diesendorf Canberra Times, 15/2/2006 Muzzling the Greenhouse Debate

Under the Cities for Climate Protection (CCP) programme, Council has set a community greenhouse gas emissions reduction target of 20%, from the 1996 base year, by 2010. By 2001 community greenhouse gas emissions had risen by 6.7% from the 1996 base year (see Table 3).

Council has developed a Community Action Plan that will provide opportunities and incentives for the Maribyrnong community to assist in the reduction of their carbon footprint.

Current initiatives from the Greenhouse Action Plan include:

- Tenants and Landlords programme, promoting energy conservation in rental properties
- Community tree planting
- Village Green programme to introduce sustainable practices in small to medium businesses
- Green Business programme
- Free cardboard recycling service
- Walking School Bus
- Travel Smart

Proposed initiatives include:

- Community Power scheme
- Rebates for solar panels and solar hot water for residents
- Greenhouse Challenge for businesses
- Advertising lights turned off at night
- Schools engagement and education programme
- Collection of organic food waste
- Education seminars on energy conservation at home
- Introduction of STEPS/SDS planning tool
- Business and school Green Travel Plans
- Encourage sustainable businesses to relocate to Maribyrnong

⁵⁷ Dr. Mark Diesendorf, Canberra Times, 15th February 2006, *Muzzling the Greenhouse Debate*

- Extend the bike path network and promote other active transport modes
- Advocating for a number of energy reduction measures with State and Federal governments including; greater uptake of renewable energy and a new Mandatory Renewable Energy Target (MRET) of 30% by 2020, mandatory fuel reduction targets for vehicles, feed-in tariffs for residential solar power installations and government support for the incorporation of ESD principles in new developments through the State planning and zoning process

Energy Efficiency

Governments must continue to invest in research and development for low emissions technology and energy efficiency programmes. Stronger energy efficiency regulations for new housing stock and commercial buildings must be mandated to reflect the emerging climate change science. Maribyrnong City Council has identified a 30% energy saving through energy efficiency measures incorporated into its major buildings.

Renewable Energy

“Be in no doubt, renewable energy works. Renewables now account for a quarter of the installed capacity of California, half of Norway’s and three-quarters of Iceland’s. It is time we joined the clean energy revolution sweeping the progressive parts of the world.” Professor Ian Lowe, Australian Conservation Foundation, President⁵⁸

In a speech to the National Press Club in October 2005 *Renewables vs.nuclear* Professor Ian Lowe, President of the Australian Conservation Foundation stated that:

“As far back as the early 1990s the relevant Commonwealth department estimated that we could get 25% of our electricity from renewables at no significant extra cost, and the technology has advanced dramatically since then. Renewables can meet Australia’s energy demands. Just 15 wind farms could supply enough power for half the homes in NSW and that would only use less than half a percent of the pasture land in the state – without disrupting grazing.

Fitting solar panels to half the houses in Australia could supply 7% of all our electricity needs, including industry’s needs, enough for the whole of Tasmania and the Northern Territory.

And I want to dispel the myth that when the wind stops or a cloud goes across the sun the system collapses. The strongest system is a grid that is fed by various forms of energy. A mix of renewable energies would provide the system with flexibility. Big centralised coal-powered systems require expensive back-up in case the largest unit goes down. Diverse sources of energy make an energy system more reliable.

The solar revolution can’t happen overnight! In the short-term, gas will have an important place as we wean ourselves off our coal dependence.”⁵⁹

⁵⁸ Ian Lowe, Address to the National Press Club, October 19, 2005
http://www.acfonline.org.au/news.asp?news_id=582&c=25460 viewed on 19th September 2007

⁵⁹ Lowe, I., 2005, *Renewables vs.nuclear*, National press Club,
<http://eherald.alp.org.au/articles/1005/magopine20-01.php> accessed 8th April 2008

Diverse sources of energy supplies are crucial for Australia's energy security and greenhouse gas reduction targets. In its present form, coal dependency for energy must be limited, due to the high greenhouse gas emissions and air pollution associated with its mining and usage. Renewable energy capability can be increased significantly to offset the reduction in coal use.

According to the *Renewables 2007 Global Status Report*⁶⁰:

- The fastest growing energy technology in the world is grid-connected solar photovoltaics (PV) with a 50% annual increase in cumulative installed capacity in both 2006 and 2007. This translates into 1.5 million homes with rooftop solar PV feeding into the grid worldwide.
- Wind power grew by 28 percent worldwide in 2007.
- Rooftop solar heat collectors provide hot water to nearly 50 million households worldwide, and space heating to a growing number of homes.
- Existing solar hot water/heating capacity increased by 19 percent in 2006.
- Germany accounted for half the global market in 2006 while the Spanish solar PV market grew the fastest of any country during 2007, in part due to new and revised policies, and an estimated 400 MW was added in 2007, a fourfold increase over 2006 additions.
- Emerging strong growth in other European countries, especially Italy and Greece with the recent introductions of policies, is also changing the balance. France's recently revised feed-in policies are beginning to accelerate what had been slow growth.
- The International Energy Agency observed in 2004, in its milestone book *Renewable Energy Market and Policy Trends in IEA Countries*, that significant market growth has always resulted from combinations of policies, rather than single policies, that longevity and predictability of policy support is important, that local and state/provincial authority and involvement are important, and that individual policy mechanisms are evolving as countries gain experience.

An increase in the use of renewable energy can be stimulated through an improved pricing arrangement for accredited green power. Currently, consumers are being 'penalised' for buying green power. Financial assistance in the form of renewable subsidies could be made to residents investing in accredited green power. This will assist greatly in stimulating the renewable energy industry. The imbalance between renewable and non-renewable energy supplies needs to be addressed at the consumer level.

There is also a strong case for the feed-in tariff to be raised to a level that will also stimulate the renewable energy sector as in Germany⁶¹ and also in other Australian States. South Australia has established a new feed-in tariff of 44c/kwh⁶².

⁶⁰ *Renewables 2007 Global Status Report*

⁶¹ Sijm J.P.M., 2002, *The Performance of Feed-in Tariffs to Promote Renewable Electricity in European Countries* <http://www.ecn.nl/docs/library/report/2002/c02083.pdf> accessed 5th April 2008

It is clear that positive, mandated policy direction has a major impact on the uptake of renewables.

Emissions Trading Scheme

There are strong environmental, economic and social equity reasons that the revenue from the sale of greenhouse emission permits is used to reduce distribution impacts and ensure an equitable adjustment to change. The cost of reducing greenhouse gas emissions will inevitably be passed on to householders. The revenue from the sale of permits must be used to provide assistance to communities and householders who will be impacted by greenhouse pricing. Revenue raised from the sale of permits must be used for policies and programs that will have a direct impact on reducing the level of greenhouse gas emissions, such as free or low cost lighting, buying green power, higher solar rebates, elevated feed-in tariffs and energy efficiency programmes for rental properties.

As previously reported, low income households will be disproportionately affected by rising energy costs and emission trading schemes. Government programs must be funded from an emissions trading scheme in order to provide information and capital assistance to low income householders to improve energy efficiency in their homes and improve public transport infrastructure to give people better access to transport choices, particularly in the 'public transport poor' outer suburban areas of Australian capital cities.

⁶² *Tackling Climate Change in South Australia*, Department of Premier and Cabinet, http://www.climatechange.sa.gov.au/news/news_5_2.htm accessed 5th April 2008