

**City of Melbourne
Greenhouse Action Plan 2006-2010
(Council Operations)**

Table of Contents

1. Background	3
1.1. Introduction	3
1.2. Future Scope of Council's greenhouse program	3
1.3. Aim and Objectives of this Action Plan	4
1.4. Strategic Context	4
2. Emission Profile and Forecast	5
2.1. Council Emissions 1996-2005	5
2.2. Key Achievements to Date	6
3. Strategic Directions for 2006-2010	7
3.1. Overview	7
3.2. Greenhouse Offsets trial	7
3.3. Buildings	8
3.4. Vehicle Fleet	10
3.5. Public Lighting	13
3.6. Waste & Other Emissions	15

1. Background

1.1. Introduction

Council has played a leading role in greenhouse reduction activities since the mid 1990's. Council joined the international Cities for Climate Protection™ (CCP™) Program in 1998 and the national Greenhouse Challenge program in 2000. Since joining these programs Council recognised the need to develop a longer term approach to greenhouse issues, and adopted the *Zero Net Emissions by 2020* strategy in 2003.

Zero Net Emissions by 2020 identifies three key strategies:

- *Improved Building Design*: Reduction in energy use through the uptake of ESD principles in new and existing buildings.
- *Use of renewable energy*: Increased uptake of renewable energy and renewable energy generation such as solar hot water and photovoltaics.
- *Sequestration*: The offset of remaining emissions through tree planting, which sequesters carbon from the atmosphere.

The strategy recognises that deeper abatement coupled with a strategic approach is required to curb the impacts of global warming

This strategic framework implies that Council should seek to use as little energy as possible through energy efficient buildings, streetlights and other operations. Energy efficiency is the most financially attractive strategy; it saves money on energy bills.

Secondly, the energy used should come from renewable sources (eg. Green Power, solar hot water), as much as practically and financially possible. Purchasing renewable energy drives investment in the renewable energy industry in Australia.

Thirdly, the remaining emissions should be offset, when all else has been done through energy efficiency and renewable energy purchase or generation.

Technically, the hierarchy applies however, financially the priorities may vary as the market matures and variables such as the Victorian Renewable Energy Target (VRET) and carbon trading are introduced, altering the price of mitigation and offsets. It is reasonable to assume the price of renewables will continue to decline while the price of offsets (via tree planting) will increase as available land becomes scarce.

1.2. Future Scope of Council's greenhouse program

For the purposes of determining strategic directions and actions for each sector, all areas of Council operations and services with greenhouse impact are included. Whereas Council has previously not reported on aspects Council outsources for external management or service delivery, this Action Plan aims to commence measurement of contractor emissions, to better reflect the greenhouse impacts of Council's operations and our drive to green the supply chain. These will be reported on in future, but not included in total corporate emissions or target setting for 2010.

Examples include:

- Emissions from waste collection services provided in the City of Melbourne
- Emissions from street cleaning services
- Emissions from wholly owned subsidiaries and assets in Council's investment portfolio

1.3. Aim and Objectives of this Action Plan

The *Greenhouse Action Plan 2006-2010* is a strategy to guide the organisation's attempts to reduce its own greenhouse gas emissions, out to 2010. *The Zero Net Emissions by 2020* strategy remains the key document for reducing emissions from the municipality. As well as providing a strategic framework, this document lists key actions committed to across the organisation over a two year period (the Action Plan). The primary target audience therefore is the organisation and Council, with main branches including:

- Facilities Management (Buildings)
- Engineering Services (Public lighting and Waste)
- Assets and Services (Fleet)
- City Sustainability (Strategy and policy development)
- Parks and Gardens (Buildings and Lighting in Parks and Gardens)
- Urban Design (Design of Buildings and Open Space)

The Action Plan is underpinned by the following objectives:

- To build strong and effective relationships across Council;
- To take advantage of opportunities as they arise;
- To show leadership;
- To implement practical and quantifiable actions to reduce emissions; and
- To achieve Council's emission reduction goals.

The *Greenhouse Action Plan 2006-2010* will be reviewed on a two yearly basis, subsequent to the completion and analysis of City of Melbourne's yearly greenhouse inventory.

As part of these initiatives the City of Melbourne set the following goals for reducing greenhouse gas emissions:

- ***To reduce Council's own emissions by 30 percent below 1996 levels by 2010, and to achieve zero net emissions for the organisation by 2020; and***
- ***To reduce the municipality's emissions by 20 percent below 1996 levels by 2010, and to reach zero net emissions for the municipality by 2020.***

1.4. Strategic Context

The *Greenhouse Action Plan 2006-2010* has been developed within the context of other Council policies and frameworks, including:

Key Council strategies and policies include:

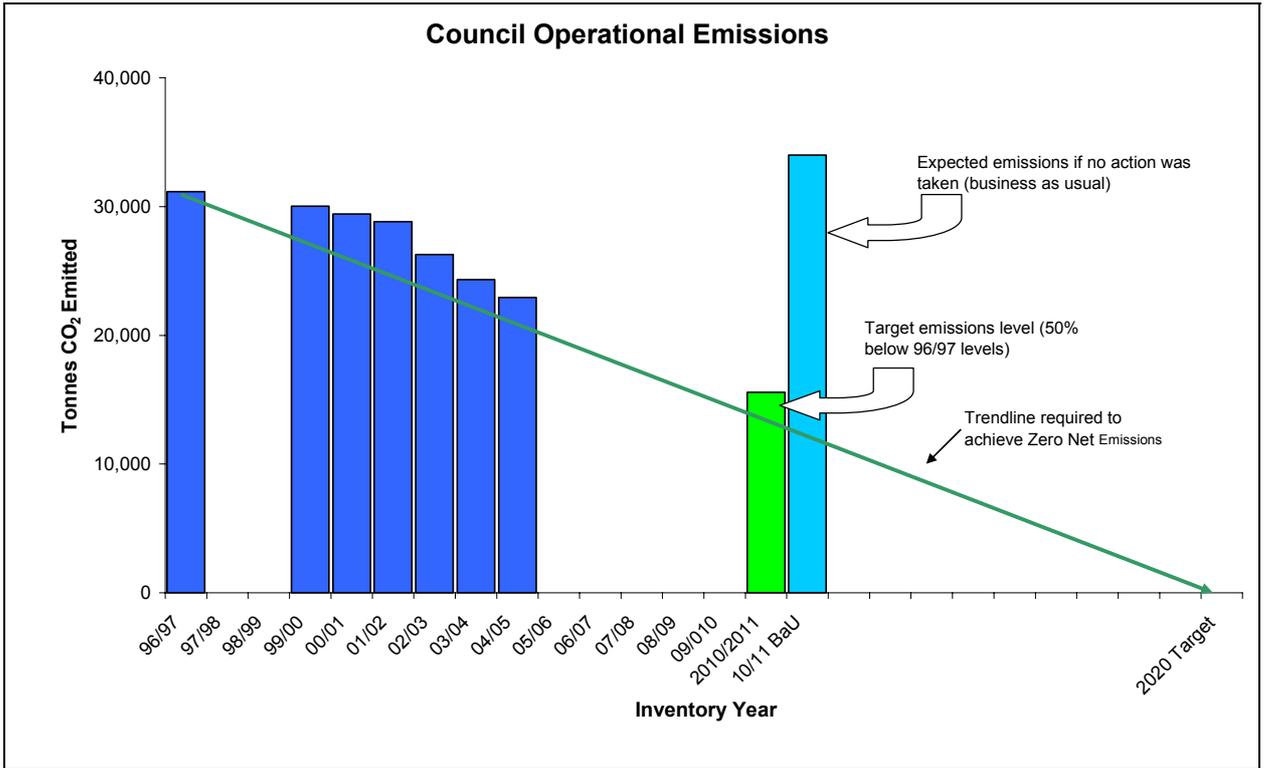
- *City Plan 2010*
- *Corporate Plan 2003-2006*
- *Zero Net Emissions by 2020 Strategy*
- *Draft Urban Design Strategy 2006*
- *Lighting Strategy*
- *Corporate Vehicle Fleet Policy*
- *Growing Green – Environmental Sustainability Plan*
- *Sustainable Energy and Greenhouse Abatement Strategy*
- *Sustainable Public Lighting Action Plan 2005-2010*

The Action Plan also recognises the role of State and Federal government greenhouse policies and strategies.

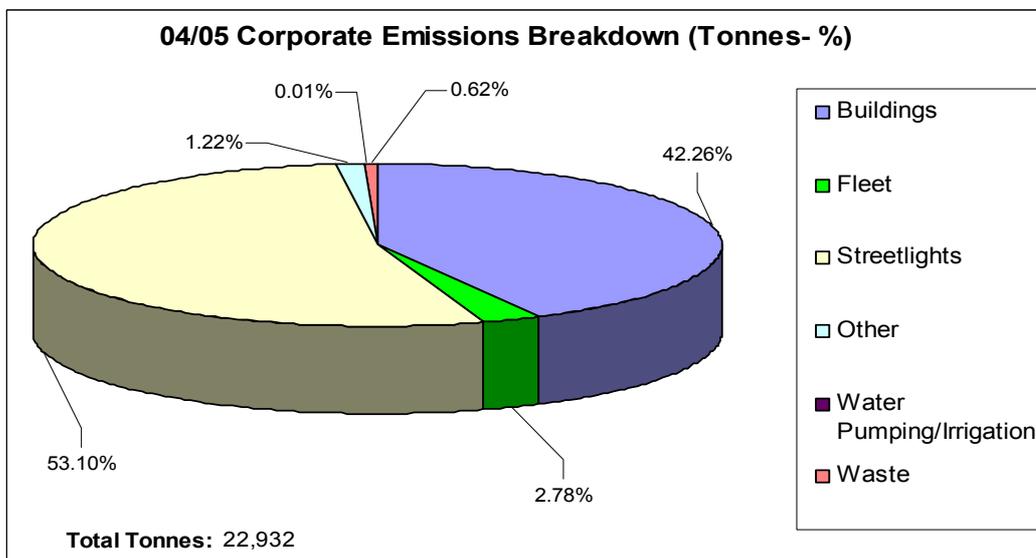
2. Emission Profile and Forecast

2.1 Council Emissions 1996-2005

At the end of the 2004/2005 financial year a review of the corporate inventory was conducted to ascertain corporate emissions levels. Corporate emissions for 2004/2005 were 22,932 tonnes, revealing a reduction of 26 per cent of emissions attributable to corporate activities from the base year (1996/1997). This places Council in a strong position to achieve the corporate reduction goal of 50 per cent by 2010. The following table illustrates this point.



The following chart details emissions by sector. It highlights the major role that measures within the buildings and public lighting sectors must play in reducing emissions.



The sector breakdown reveals that between 1996/7 and 2004/5 corporate reductions have been achieved as follows:

- Buildings: 2,784 tonnes
- Fleet: 293 tonnes
- Public Lighting: 5,309 tonnes
- Water/sewage: 57 tonnes
- Waste: 67 tonnes

2.2. Key Achievements to Date

As discussed, Council has achieved significant greenhouse savings since its program began in 1998. All projects outlined within Council's 2001-2003 Greenhouse Action Plan and planned for delivery over this period were undertaken with the following results:

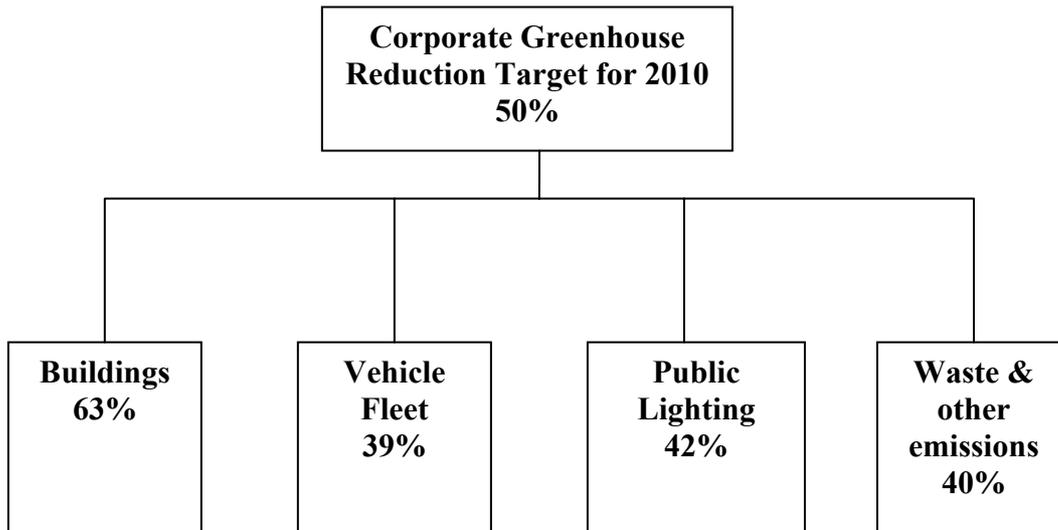
Project	Planned reduction 1999-2003 (tonnes CO2)	Total reduction achieved in 2003/04 (tonnes CO2)
Building retrofits (all)	460	640
20 percent Green Power for buildings	924	2143
Solar hot water installations	9	12
IT improvements (inc Xerox photocopiers and turning off monitors at night)	196	231
Public lighting upgrades	44	79
30 percent Green Power: public lighting	895	5148
Greenfleet emissions offset	670	476
Alternative fuel vehicles	12	15
Fleet composition changes	54	17
Transporting Staff	15	1
Waste Wise	12	222
<i>Total Tonne Reduction</i>	3,801	8,984

Since the period covered by the Greenhouse Action Plan 2001-2003 further reductions have been achieved by a number of actions, including increasing the public lighting Green Power component to 40 percent, development of the CH2 building, and further reductions from Council's triple bottom line management of fleet.

3. Strategic Directions for 2006-2010

3.1. Overview

Council's performance to date has resulted in a review of corporate targets for 2010. Actions and targets for each sector will drive a 50 percent reduction target in emissions by 2010. The relative contribution of each sector to this target is detailed in the following diagram.



Each section contains key performance indicators that will be embedded by Greenhouse Steering Committee members into relevant business work plans and the annual business planning process.

In addition to the actions outlined in the following section, it should be noted that key to achieving these targets will be an increase in renewable energy purchasing of 25 percent (currently at 20 percent) for the Buildings sector and 50 percent (currently at 40 percent) for the Streetlighting sector.

3.2. Greenhouse Offsets trial

Offsets can be in the form of sequestration (biological or geological) or abatement measures (eg. fuel switching, gas destruction and energy efficiency), whereby a third party implements, and sells the credits. In keeping with the *Zero Net Emissions by 2020* strategy and for the sake of manageability and broader triple bottom line benefits, sequestration offsets (via tree planting) will be sought at least for the initial offset purchase. Other options may be explored in future years.

City Sustainability Branch is investigating how to progress the sequestration strategy, through a trial to offset the Melbourne Town Hall and CH2 (if required), to make them 'climate neutral' buildings by 2010. An initial offset purchase occur for a percentage of emissions created by those buildings in the 06/07 financial year. This purchase would then increase until all offsets necessary to achieve climate neutrality were in place by 2010.

The Kyoto Protocol recognises carbon sinks as a legitimate greenhouse reduction activity. The Federal Government and State Government have developed carbon monitoring and accounting methodologies needed in an Australian context. Regulation has also been changed to create 'property rights' for sequestration credits. These developments allow credits to be created from sink owners and sold to organisations wishing to offset the impact of their emissions.

A number of brokers have emerged in the marketplace to facilitate the creation, buying, and selling of sequestration credits. However the market has not fully matured and aspects such as the Triple Bottom Line (TBL), quality of sinks, and their credits, varies.

Various TBL standards have been used in government sequestration trials. However, given the absence of a national or state trading market TBL standards are not regulated. It is therefore up to the buyer to determine the TBL benefits and quality of the credits it wishes to buy. The City of Melbourne will play a lead role in establishing a 'best practice' approach to buying carbon credits that have other TBL benefits.

Some see sequestration as a way to avoid dealing directly with emission reductions. However, it plays a critical role in the achievement of *Zero Net Emissions*. There is a small risk to the City's reputation if the purchase is not handled properly however, the City's good track record and ongoing energy efficiency and renewable energy efforts puts it in good stead to make informed decisions about expanding into offsets. There is a clear policy context which shows how sequestration is prioritised and abatement pursued.

The sequestration program is also a good way to establish relationships with Victorian rural communities, bringing benefit to their local economies and spreading the message on climate change issues.

3.3. Buildings

Summary

• Base year (1996) Emissions	12,476 tonnes CO2
• Emissions for 04/05	9,9692 tonnes CO2
• Reduction achieved 04/05 on base year levels	22 percent
• Greenhouse Reduction Target for 2010 on base year levels	63 percent (includes reductions from portfolio changes)
• Green Power Purchase target for 2010	25 percent
• New energy efficiency projects target	1,500 tonnes reduced
• Offsets Purchase target for 2010	2,673 tonnes reduced

Introduction

The following branches play a role in greenhouse reductions from Council buildings:

- **Facilities Management:** Manage the performance of existing buildings (operation, maintenance and repairs). They determine Council's real estate needs, used to plan for acquisition and retirement of buildings in the portfolio. They are responsible for energy management in existing buildings.
- **Parks and Gardens:** Oversee the delivery of infrastructure and services to park users, such as sports pavilions and clubrooms.
- **Design Branch:** Undertake design work for delivery of new buildings and upgrade of existing stock, receiving briefs from Facilities Management and Parks and Rec.

The greenhouse impact due to changes in Council's building portfolio

It is estimated that there will be approximately 1,311 tonnes *less* emissions resulting from relocating Council's administration offices, including the eventual sale or leasing of the Commonwealth Bank Building. However it is estimated there will be approximately 523 *new* emissions resulting from additions to the portfolio by 2010, including re-assuming control of three libraries, and a number of new community facilities built to meet growing demand for Council's community services (such as child care, aged care, and other needs).

These changes in the buildings portfolio are likely to deliver a net *decrease* in emissions of 788 tonnes.

The move to CH2 is likely to add no new emissions to Council's greenhouse profile, as it is intended to be a 'greenhouse neutral' building.

Strategic Direction for Buildings

Existing Buildings

The key priorities for existing buildings are to continue reducing energy consumption through energy efficiency, renewable energy generation and Green Power purchasing.

Energy efficiency improvements (as either 'retrofit' projects or as part of planned maintenance and upgrades) are the most financially attractive way of achieving greenhouse gas reductions. Council is in a strong position to pursue energy efficiency options, with the knowledge and capacity that has been built around the CH2 project. In order to reach the buildings sector target, energy efficiency projects will have to deliver 1,500 tonnes reduction by 2010. This can be achieved by undertaking portfolio energy efficiency opportunity assessments and retrofits. Alternatively, energy performance contracting can be applied, to overcome the initial cost barriers of the projects.

Key Action 1: Undertake energy efficiency assessments and implement recommendations for Council's building portfolio, seeking 1,500 tonnes reduction. Explore the potential role of a revolving energy fund or energy performance contract in delivering the reductions.

In order to deliver energy efficiency projects in a strategic manner, work needs to be done to determine energy performance benchmarks across the building portfolio. This will allow projects to be prioritised effectively, and performance to be benchmarked against local and global best practice. These benchmarks may be in the form of energy use per square meter, or modelling tools such as the Australian Building Greenhouse Rating Tool (ABGR) or Green Star.

Key Action 2: Develop an energy performance benchmarking process, to establish critical performance requirements across the portfolio. This could be expressed as a 'star rating', or as energy use per square meter, and be integrated into new building/major works design briefs.

Integrating sustainability into new buildings

The key priorities for new facilities are to ensure they demonstrate exemplary design standards, and consider sustainability at all stages of decision making, from feasibility to design, implementation and maintenance programming.

A key deliverable is the development and piloting of a sustainability checklist to ensure that best practice sustainability principles are integrated early into the capital works process. This piloting will occur in the capital works planning process for the 07/08 financial year works program. This checklist will be supported by a series of technical fact sheets. This will ensure that relevant departments within Council hold a common understanding of sustainability and greenhouse issues.

Key Action 3: Develop a Sustainability Checklist for Council's capital works projects, to integrate sustainability issues from the design stage. The Checklist will be supported with a series of technical fact sheets for project managers.

Green Power

Critical to the performance of Council to targets laid out in *Zero Net Emissions* will be an increase in the purchase of Green Power. Council's interim target is to increase building green power purchase to 25 percent by 2010. A triple bottom line analysis of this approach will be undertaken in collaboration with Engineering Service's investigations on increasing public lighting Green Power purchasing to 50 percent.

Key Action 4: Increase Green Power purchase to 25 percent for Council's buildings portfolio, by 2010.

Piloting a Greenhouse Offsets purchase

The piloting of a sequestration offsets investment will begin in the 2006/7 financial year. It will initially offset 1,500 tonnes from the Town Hall's use and residual emissions from CH2 (making it greenhouse neutral). By 2010, offset purchases will have increased to 2,673 tonnes, which is enough to make the Melbourne Town Hall climate neutral.

Key Action 5: Undertake a trial purchase of offsets (through sequestration) in the 2006/7 financial year, with the aim to neutralise the Town Hall and CH2 emissions by 2010.

Performance Criteria & Indicators

Performance tracking will be facilitated by improvements to Council's centralised data management system (currently 'STARK'), to enable automated calculation of greenhouse emissions for Council sites, highlighting increases in energy use and sites that need special attention.

Key Performance Indicators

Key Performance Indicators that will be used to track this area are:

- Total greenhouse gas emissions from Council buildings
- Total energy consumption from Council buildings
- Energy performance (MJ/m²) of key Council buildings
- Total greenhouse gas reductions from energy efficiency projects
- Percentage of Green Power for Council Buildings
- Total greenhouse gas emission reductions for buildings through Council's greenhouse offset program

3.4. Vehicle Fleet

Summary

• Base year (1996) Emissions	890 tonnes CO2
• Emissions for 05/06	646 tonnes CO2
• Reduction achieved for 05/06 on base year levels	27 percent
• Greenhouse Emissions - Target for 2010 and percentage reduction on base year levels	570 tonnes CO2 (38.7 percent)
• Vehicle Fleet numbers 1996	132
• Reduction target Vehicle Fleet numbers for 2010 and percentage reduction on base year levels	92 (30 percent)

Introduction

The operational area and greenhouse impact of the City of Melbourne's vehicle fleet is managed by the **Asset Services Branch**, with the support of **an external service provider**. **Corporate Performance and Financial Services** are also aligned with Asset Services managing specific functions to deal with executive remuneration, OHS Policy, corporate insurance, FBT and accounts payable.

Council's Fleet Management activities are currently governed by the *Corporate Vehicle Fleet Policy*, which seeks to ensure "an effective and efficient operation of the vehicle fleet in support of business units achieving their primary business outcomes."

Council has achieved greenhouse reductions from this sector through the following activities:

Fleet acquisition: Council's move to lower emissions vehicles is informed by Council's Triple Bottom Line purchasing model, which requires the identification and assessment of twelve TBL criteria including vehicle operating costs, recyclable components, use of renewable fuels and CO2 emissions for all Council vehicle purchases. There is a policy commitment to continue to use the TBL purchasing tool.

Reducing fleet numbers: Council has also been successful in reducing overall fleet numbers, by continually reviewing fleet requirements, asset numbers and resource consumption.

Fuel Switching: Between 2001 and 2004 Council vehicles with dedicated LPG and dual fuel capabilities peaked at 20 percent of the overall fleet. By 2006, however, the LPG numbers have reduced to pre 2001 levels due to a change in priority to purchase small vehicles with 4 cylinders or less as apposed to large vehicles on LPG. In 2006 Council will commence purchasing small vehicles with diesel powered engines capable of achieving 6L/100kms or less as a means of stepping up its commitment to reducing its non renewable fuel consumption. Procurement of smaller vehicles is a leadership statement on embracing cultural change for the City of Melbourne.

Low emission vehicles: Council currently has two hybrid vehicles and a wide range of small vehicles, which use significantly less fuel (up to 40 percent less) than the average Australian made vehicle.

Strategic Direction for Fleet Management

The traditional form of corporate transport was to identify and deliver a *vehicle fleet management solution* measured by service demand, vehicle price and CO2 emissions. Although still relevant, this approach will be broadened to include a more holistic and integrated approach to meeting staff transport needs, and affecting transport choices. Council's *Corporate Transport Plan 2006-2010*, recognises the variety of transportation opportunities available to staff to carry out their work (for example walking, public transport, bicycles, fleet vehicles, taxis etc). By broadening the scope, the Corporate Transport Plan is likely to deliver triple bottom line benefits, including further greenhouse gas reductions.

The *Corporate Transport Plan 2006-2010* provides a strategic framework which includes:

- Support for Council Services:** provision of holistic transport solutions for staff
- Development of a Corporate Transport Profile:** to understand the transport behaviour and needs of staff across all forms of transport choices
- Cultural Change Program:** acceptance, adoption and use of alternative sustainable transport solutions
- Measuring Performance:** further refinement of the Triple Bottom Line Vehicle Purchase model, and supporting monitoring

The Plan aligns with the principles set out in Council's *Melbourne Transport Strategy* and will be supported by an intranet page educating staff on Sustainable Policy and Planning, and the *Walking Strategy* to be developed by Urban Design in 06/07.

This new strategic approach will see the further reduction in Council fleet numbers to 92 (down from 108 in 2003/2004), and an overall reduction in associated emissions to 570 tonnes (down from 890 in 1996/7).

Key Action 6: Reduce fleet emissions to 570 tonnes by 2010, by implementing actions within the Corporate Transport Plan 2006-2010.

If Council is to achieve its new 2010 reduction target of 570 tonnes for this sector, significant greenhouse reductions still need to be achieved from the corporate fleet. While Council can gain small incremental improvements to its greenhouse levels by encouraging and promoting alternative executive vehicles with improved TBL scores the biggest impact can be achieved by revisiting Branch business requirements for vehicles and in particular where commuter use has been granted. It is recommended that Corporate Performance, Continuous Improvement and Asset Services review this requirement in 2007.

The *Corporate Transport Plan 2006-2010* also aims to develop a reporting process where contractor transport vehicle emissions are included as part of Council's overall performance monitoring. In this context the TBL performance reporting can be best demonstrated when the real transport impact is known while delivering Council Services, whether by internal Branches or external service providers. External service providers refer to Citywide, Spotless, Serco, Thiess and other contractors that play an important role in delivering Council services and their transport impact is significantly high on the city and its environs. Other contractor requirements to be explored include adopting Council's TBL procurement tool, and subscription to Greenfleet.

Constraints and dependencies

Reduction of six (6) identified Branch vehicles is not possible without support from CMT to review these vehicle requirements again with the aim of withdrawing commuter use privileges.

Council is constrained in its ability to increase its purchase of LPG vehicles due to the change of priority, where practicable, to purchase smaller vehicles with 4 cylinders as apposed to a large vehicle on LPG. In the unusual circumstance where an operational vehicle is a six cylinder then LPG is the preferred fuel option. Previous concerns from an operational perspective is the limited support from manufacturers when these LPG fuelled vehicles require ongoing maintenance. Purchasing of additional LPG vehicles within the executive range will continue on a case by case preference.

Performance Criteria & Indicators

Performance outcomes for this sector are:

- Total reduction of vehicle fleet - numbers
- Total CO2 emissions
- Alternative Fuel vehicles performance measurement
- Lower emissions vehicle performance measurement

3.5. **Public Lighting**

Summary

• Base year (1996) Emissions	17,487 tonnes CO2
• Emissions for 05/06	12,244 tonnes CO2
• Reduction on base year achieved by 05/06	30 percent
• Emissions Target for 2010	10,192 tonnes CO2
• Greenhouse Reduction target for 2010 on base year levels	47.5 percent
• Renewable Energy purchase target - 2010	50 percent

Introduction

This sector includes lighting services to streets (street lighting), parks (park lighting) and other open space areas (non-standard lighting).

The branches play a role in delivering greenhouse reductions from public lighting are:

- **Engineering Services:** Responsible for overseeing the negotiation of energy supply and street lighting services agreement with the distribution business, and overall public lighting asset management.
- **Parks and Recreation:** Oversee asset renewal in Council parks. Pay for energy used in park lighting. Strategic role and general park management role.
- **Design and Culture:** Delivery of installation, maintenance and other operational services (through contractors) to parks lighting and non-standard lighting.

Council has adopted the *Sustainable Public Lighting Action Plan 2005-2010* (or 'SPLAP'), providing greater strategic coordination and greenhouse reductions from this high impact sector.

Emissions from public lighting are influenced by Council's *Lighting Strategy* which seeks to "improve the quality, consistency, and efficiency of night lighting in streets and other public spaces." Council's *Growing Green Environmental Sustainability Plan* addresses environmental issues in the City of Melbourne's open space and recreational facilities, which includes energy use.

Strategic Direction for Public Lighting

The *Sustainable Public Lighting Action Plan 2005-2010* provides strategic direction for this sector. It sets a target for a reduction in emissions of 34 percent by 2007, with four priority action areas:

- Energy Efficiency
- Renewable Energy and Offset Options
- Waste Management
- Better Management of Public Lighting

A list of actions has been committed to in the *SPLAP*, under each of the above areas.

This *Greenhouse Action Plan 2006-2010* sets a target of 42 percent reduction in emissions by 2010 (on 1996/7 levels). This target is based upon known lighting infrastructure changes (not including Docklands), a commitment to 50 percent green power purchase by 2010, and the actions within the *SPLAP*.

Lighting Strategy review

A key strategic initiative over the 2006-2010 period is the review of the *Lighting Strategy* to ensure it incorporates and aligns with Council's commitments to greenhouse gas reductions. The review provides the basis for establishing sustainable lighting technical guidelines. These guidelines can then be used by Council and the public, to ensure minimum performance

standards are met for various applications. It will also provide Council with a clear policy framework with supporting documentation, to address sustainable lighting issues in the planning approvals process.

Key Action 7: Review and update Council's Lighting Strategy, to incorporate Council's commitments to greenhouse gas reductions, and the development of sustainable lighting technical guidelines.

Greenhouse Impact of Parks lighting

Currently the energy data for lighting in parks is not tracked to a central location that allows accurate greenhouse monitoring and reporting. This area will be the next focus of Council's continual efforts to centralise energy monitoring and tracking. This will allow the true greenhouse impact of parks lighting to be determined.

Key Action 8: Review energy use data in parks, and integrate data into Council's central energy data monitoring system (STARK).

Energy Efficiency

Council has firm control over the management of lighting infrastructure in parks. Efficient lighting technology is currently being trialled at the Flagstaff Gardens, and the Sustainability Victoria funded trial in the Fitzroy Gardens, where a variety of white metal halide lamps have been installed to replace less efficient mercury vapour lighting. A number of trials of T5 lighting technology is also underway in City laneways and on Sandridge Bridge.

Achieving energy efficiency in streetlighting is more challenging, as the distribution businesses own and manage the infrastructure in behalf of Council, but Council pays the energy bills. Hence the distribution business determines the level of efficiency of the lighting, and Council wears the cost of those decisions. Because of this 'split incentive' Council must work to develop a strategic relationship with the distributors, which builds on the role that energy efficiency has in minimising the distributor's costs in maintaining energy supply infrastructure in the city.

Council can also play a role through its membership to the Northern Alliance for Greenhouse Action (NAGA)¹. NAGA's Streetlighting project is a partnership with Councils, distribution businesses and the Essential Services Commission to address broader issues through capacity building, the development of financial models, removing regulatory barriers, and undertaking large scale lighting change-overs.

Key Action 9: Participate in the NAGA Streetlighting project.

Renewable energy and offsets

This Greenhouse Action Plan 2006-2010 establishes a target of 50 percent Green Power purchase for public lighting by 2010. To ensure this is met, Engineering Services and City Sustainability will need to undertake a triple bottom line analysis of existing green power purchasing arrangements and increased levels to 50 percent by 2010.

As part of Council's target of zero (net) emissions by 2020, Council will also establish a process for the offsetting of Council emissions through tree-planting projects based in Victoria (bio-sequestration). If the initial trial of offsetting selected Council buildings in 06/07 is successful, it is anticipated that a proportion of Council's public lighting emissions will be offset, in addition to the 50 percent Green Power target.

Key Action 10: Increase Green Power purchasing to 50 percent for all public lighting by 2010.

¹ The Northern Alliance for Greenhouse Action (NAGA) is an alliance of the Cities of Melbourne, Yarra, Darebin, Moreland, Banyule, Hume, Manningham, Whittlesea and Nillumbik. NAGA works to achieve greenhouse savings across these council areas, by sharing information and collaborating on projects.

Key Action 11: Explore the purchase of offsets credits for further greenhouse reductions by 2010, contingent on the trial with the buildings portfolio in 06/07 being successful.

Docklands Transition

The City of Melbourne will become responsible for public lighting in the Docklands Precinct from July 2007, and this assimilation is a priority in the implementation of the City of Melbourne's *Sustainable Public Lighting Action Plan 2006-2010*. There is likely to be a significant financial cost associated with the operation, maintenance, repair and energy bills of the precinct.

A wide variety of non-standard fittings are being used for public lighting in the Docklands Precinct, being put in by developers and VicUrban. Council is not yet able to establish a clear picture of the greenhouse impacts of the lighting in the Precinct, as asset records for the area are not yet capturing the full information that is required.

There is also uncertainty about the public lighting which will be installed in Docklands as the precinct continues to develop. The City of Melbourne will not be the responsible planning authority for public lighting installations proposed in the Docklands Precinct. The level of influence the City of Melbourne will have over these matters is not yet clear.

For these reasons, public lighting in the Docklands is not yet included in Council's greenhouse modelling and target setting. Council needs to work closely with Vic Urban and other stakeholders to determine a clear picture on of the greenhouse and energy efficiency issues in the Docklands, before an environmental target can be established for public lighting across the Docklands Precinct.

Action 12: Investigate the energy, greenhouse and financial impacts of the Docklands' public lighting infrastructure. Develop a Docklands Sustainable Public Lighting Action Plan, with greenhouse reduction targets, by 2010.

Performance Criteria & Indicators

Performance tracking is the responsibility of Engineering Services. Indicators for tracking include:

- Reduction in total energy use of public lighting assets
- Performance of key energy efficiency upgrades and lighting trials
- Percentage of renewable energy purchase

3.6. Waste & Other Emissions

Summary

• Base year (1996) Emissions – Waste, Water/Sewerage Pumping	270 tonnes CO2
• percentage reduction on base year levels	199 tonnes CO2 (26 percent)
• Greenhouse Reduction Target for 2010	54 percent

Introduction

Emissions from this sector are influenced by a number of areas in Council, primarily **Engineering Services, City Sustainability, Parks and Recreation, and Facilities Management**. These emissions arise from decomposition of waste created by Council's administration buildings, parks and other facilities and Council's water pumping activities (such as fountains, and a small amount of stormwater pumping).

Strategic Direction for Waste & Other Emissions

Strategic Directions for this sector are mostly informed by the recommendations arising from the professional audit undertaken in 2004. These are primarily corporate waste reduction and educational measures, with responsibility attributed to a variety of departments including Marketing, Business Information Services and the Employee Recreation Association. Also included are policy measures, such as the development of a paper purchasing policy, and leadership measures, such as the trial of recycled materials in Council operations and the establishment of waste champions. Waste Management Plans for all Council facilities and environmental management plans for open space will continue to be a requirement of Council's contractors.

A key project will be the introduction of organic recycling to Council operations, namely CH2. Investigations are being undertaken into the feasibility of delivering such services to CH1 as well.

Opportunities for further investigation in the 2006-2010 period relate to the potential use of solar technology in open space infrastructure, primarily water and sewage related pumps, and the reduction of mowing in parks, currently occurring on a fortnightly basis. The latter will require substantial advocacy on behalf of Council to educate the public about the benefits of reducing the environmental impacts of parks whilst ensuring that key community expectations are still met.

Performance Criteria & Indicators

The following indicators will be used to track progress in this sector:

- Reduction in waste volumes - disposal and recycling from Council facilities and events
- Increase in volumes of green waste recycled from open space
- Reduction in total emissions of water and sewage related operations, excluding CH2 (considered within the building portfolio)