

**CITY OF JOONDALUP**

**Greenhouse Action Plan**

**2007 - 2010**

*Cities for Climate Protection Program*



## Executive Summary

This City of Joondalup Greenhouse Action Plan (GAP) 2007 - 2010 has been developed to pursue the ongoing reduction of greenhouse gas emissions across the City of Joondalup's corporate and community sectors in line with the previous targets set by Council in 2002.

In August 2006 the Joondalup Council resolved to continue the City's association with the Cities for Climate Protection (CCP) Program by endorsing the City's entry into the CCP Plus program. The CCP Plus program requires the City to continue undertaking actions that will further reduce greenhouse gas emissions and to measure those reductions on an annual basis.

This GAP fulfils a preliminary part of the CCP Plus planning stage of the program. The GAP will be incorporated into a CCP Plus Planning and Review Report, which will be considered by ICLEI-A/NZ (who run the CCP program) once all re-inventory (resource consumption data entered into CCP database) and quantification requirements have been met.

In 2002 the City set the following greenhouse gas reduction targets:

- A 20% Community greenhouse gas emissions reduction target on 1996 levels by 2010, and a stretch target of 35%; and
- A 20% Council (Corporate) greenhouse gas emissions reduction target on 2000 levels by 2010, and a stretch target of 35%.

The *City of Joondalup Milestone 5 Report 2006* identified the City's:

- Corporate sector as emitting 2,833 CO<sub>2</sub>e tonnes above its 2010 reduction target of 18,233 CO<sub>2</sub>e tonnes in 2004; and
- Community sector as emitting 370,890 CO<sub>2</sub>e tonnes above its 2010 reduction target of 929,987 CO<sub>2</sub>e tonnes in 2004.

Significant progress has been made since the commencement of the City's first Greenhouse Action Plan 2003 – 2007. A review of that GAP was undertaken in 2006, which identified:

- 9 actions have been completed;
- 18 actions have been partly completed;
- a reduction of 8,705 CO<sub>2</sub>e tonnes has been quantified for the corporate sector; and
- a reduction of 67,113 CO<sub>2</sub>e tonnes has been quantified for the community sector.

This review highlighted that the City's corporate Landfill Gas & Power contract enabled a 35,475 CO<sub>2</sub>e tonne saving for the community sector and a 2,539 CO<sub>2</sub>e tonne saving for the corporate sector. This renewable energy initiative provides important greenhouse gas savings particularly for the community sector. More extensive quantification of community greenhouse gas abatement measures should assist this sector approach the 2010 community reduction target of 929,987 CO<sub>2</sub>e tonnes.

When the City next measures its corporate greenhouse gas abatement, it is possible that the City will have exceeded the 2010 corporate reduction target of 18,233 CO<sub>2</sub>e tonnes and even the 2010 corporate stretch reduction target of 14,814 CO<sub>2</sub>e tonnes. If this does become the reality then the City will need to revise its corporate targets.

The results of future measurements will also influence the priorities granted to individual actions in this revised Greenhouse Action Plan 2007–2010. Consequently, priorities may need to be adjusted within this GAP, particularly once the findings of energy audits to be conducted during 2007 are known.

Implementation of the actions in this GAP has the potential to benefit the City and its community by:

- significantly reduced energy costs;

- improved air quality at the local level;
- reduced traffic congestion;
- the promotion and support of local services; and
- health promotion.

Unless governments, businesses and individuals take action immediately, greenhouse gas emissions will continue to increase resulting in enhanced global warming and climate changes that have the potential to cause coastal flooding and erosion, severe storms and ecosystem damage as well as increasing vectors of disease and changes to the demand and delivery of essential services to name but a few.

This Greenhouse Action Plan 2007 – 2010 will need to be resourced, monitored and reviewed regularly to assist the City and its community to meet its 2010 greenhouse gas emissions reduction goal.



Tamala Park Landfill Gas Recovery Plant

## 1. Introduction

### 1.1 Cities for Climate Protection Program Framework

The City of Joondalup formally joined the Cities for Climate Protection (CCP) Program on 30 October 1999. The CCP Program is administered by ICLEI-A/NZ – Local Governments for Sustainability in collaboration with the Australian Greenhouse Office – Department of Environment and Heritage. The Program is designed to assist local governments and their communities reduce their greenhouse gas emissions via monitoring and implementing environmentally sustainable initiatives.

The CCP Program framework consists of a milestone process for participating Local Government's to achieve. The City of Joondalup has completed the following five milestones and is now progressing through the CCP Plus stage.

**Milestone One:** Collation of an inventory of greenhouse gas emissions resulting from Local Government's (corporate) and community activities for the baseline year 2000 (corporate) & 1996 (community). *Milestone 1 was achieved in October 2000.*

**Milestone Two:** Establishment of CO<sub>2</sub>e emission reduction goals for community at 20% reduction from 1996 baseline levels by 2010 and a reduction of corporate sector greenhouse gas emissions by 20% from 2000 baseline levels by 2010, with a stretch target for both sectors of 35%. *Milestone 2 was achieved following community consultation and Council endorsement in 2002.*

**Milestone Three:** Preparation and endorsement of a local action plan. The City developed a local action plan titled "The City of Joondalup Greenhouse Action Plan 2003". The Greenhouse Action Plan identified and prioritised corporate and community sector actions to reduce greenhouse gas emissions. *Milestone 3 was achieved in December 2003.*

**Milestone Four:** Implementation of the City of Joondalup Greenhouse Action Plan. Actions implemented to reach the reduction target of 5% included a major lighting retrofit and the implementation of measures identified from an energy audit. *Milestone 4 was achieved in April 2005.*

#### **Milestone Five**

Milestone 5 involved monitoring and reviewing the CCP Program's milestone framework. Progress towards the City's greenhouse reduction target and the implementation of the City's Greenhouse Action Plan 2003 was assessed. The key elements of this Milestone process included:

- Re-inventory of the City's corporate and community greenhouse gas emissions using 2004 as the re-inventory year;
- Quantification of greenhouse gas abatement measures;
- Analysis of re-inventory results compared to the baseline year and quantification measures, and recognition of qualitative measures and future abatement actions.

*Milestone Five was awarded in May 2006.*

#### **CCP Plus**

CCP Plus focuses on building the City's capacity to broaden, accelerate and strengthen its greenhouse gas emissions reduction program. The CCP Plus Planning and Review stage is an extension of the planning and review that was undertaken in the initial CCP Program. CCP Plus requires the City to undertake a review of its Greenhouse Action Plan and to produce a planning and review report, which will be considered by ICLEI/ANZ. Following the acceptance of this report the City will be required to continue with a re-inventory of its greenhouse gas emissions for 2007 and to quantify its annual abatement of greenhouse gases through ongoing measuring and reporting against the ICLEI framework.

## 1.2 The role of the Greenhouse Action Plan 2007 – 2010

The new Greenhouse Action Plan 2007–2010 will form part of the CCP Plus Planning and Review Report to meet CCP Plus requirements. The Action Plan will guide the City in its efforts to reduce emissions to achieve the 2010 target levels.

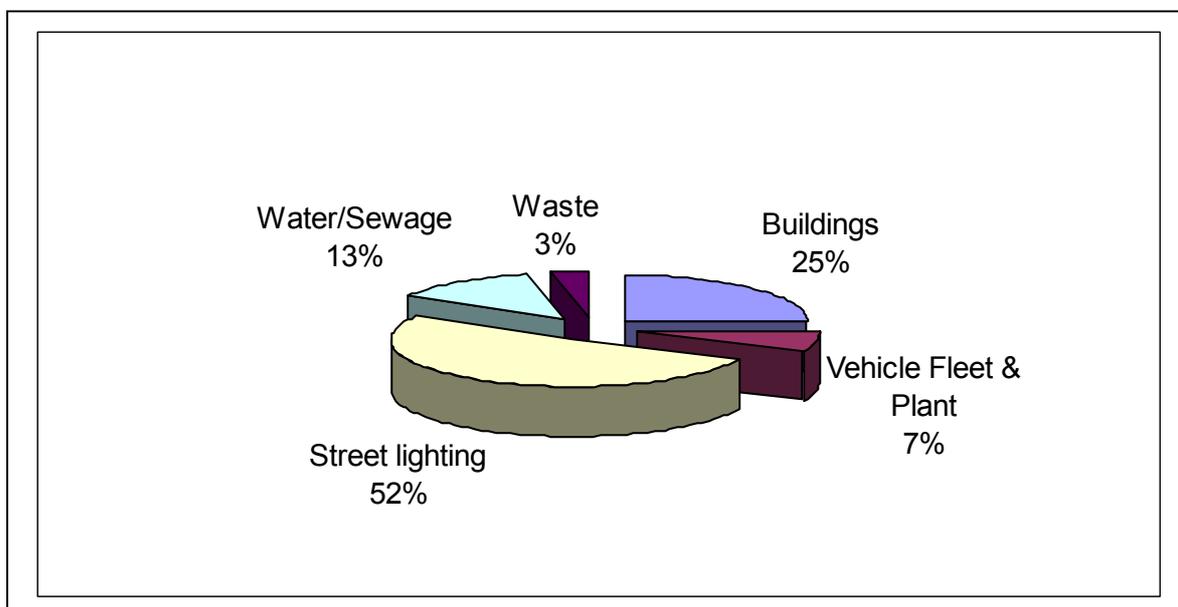
The next steps to be undertaken in order to meet CCP Plus Planning and Review requirements are:

- Quantification and analysis of all abatement measures for 2005/06;
- A full re-inventory of corporate and community greenhouse gas emissions as at 2007 including energy audits;
- Presentation and analysis of the City's recent corporate and community abatement data for 2005/06;
- Ongoing implementation of actions derived from the energy audits;
- Ongoing quantification of abatement measures undertaken annually through to 2010.

In order to present an accurate record of the City's greenhouse gas reduction initiatives and calculation of greenhouse gas abatement, updated energy audits are required. Such energy audits are identified at Action 1 of this Plan. This is a high priority and will be undertaken as soon as possible to fulfil the CCP Planning and Review quantification requirements.

Priorities of actions in this GAP will be reassessed annually to ensure they give priority to areas of energy consumption identified from the audits that emit the most greenhouse gases. The re-inventory process will identify those sectors that emit high levels of emissions, which will provide further direction for targeted actions. It is envisaged that the re-inventory and quantification of greenhouse gas reduction measures will assist the City make calculations on how its revised actions can meet its greenhouse gas 2010 reduction target.

Figure 1: City of Joondalup Sector Proportions of CO<sub>2</sub>e Emissions (tonnes) in 2004



## 2. City of Joondalup's 2010 Greenhouse Gas Reduction Targets

In early 2002, following community consultation, the City of Joondalup Council endorsed corporate and community greenhouse gas reduction targets in order to fulfil the requirements of Milestone 2 of the CCP™ program.

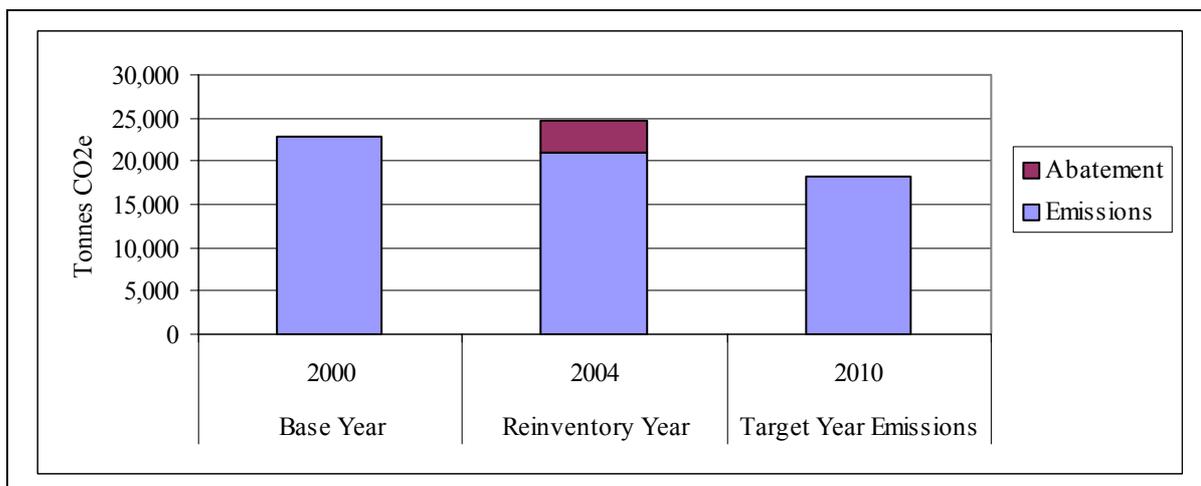
Council agreed to the following reduction targets:

- A 20% Community greenhouse gas emissions reduction target on 1996 levels by 2010, and a stretch target of 35%; and
- A 20% Council (Corporate) greenhouse gas emissions reduction target on 2000 levels by 2010, and a stretch target of 35%.

### Statement of Emissions at 2004

Compared to the baseline year 2000, the City's 2004 CO<sub>2</sub>e emissions were 1,725 CO<sub>2</sub>e tonnes lower. (*This is equivalent to an 8% reduction*) Without the abatement effort that was undertaken during 2003/04 there would have been, under a 'business as usual scenario', an increase of 1,978 CO<sub>2</sub>e tonnes rather than a decrease.

**Figure 2: The following graph shows 2004 Corporate Greenhouse Gas Emissions Compared to 2000 Actual and 2010 Forecasts**



The *CCP Australia Measures Evaluation Report 2006 City of Joondalup Measures Profile* identified a corporate sector saving of 5,002 CO<sub>2</sub>e tonnes and a community sector saving of 47,175 CO<sub>2</sub>e tonnes. This was mainly attributed to the City's switch to Landfill Gas & Power P/L to supply renewable power to the City's five main emitting buildings (saving of 38,014 CO<sub>2</sub>e tonnes from the community and corporate sectors).

When the City next measures its corporate greenhouse gas abatement it is possible that the City will have exceeded the 2010 corporate reduction target of 18,233 CO<sub>2</sub>e tonnes and possibly the 2010 corporate stretch reduction target of 14,814 CO<sub>2</sub>e tonnes. Revised corporate targets will need to be set should this be the case.

### **3. City of Joondalup Revised Greenhouse Action Plan Table 2007 – 2010**

The Greenhouse Action Plan 2007-2010 outlines new actions and continued actions from the previous GAP.

Actions for the corporate sector are shown according to the following sub-sectors:

- Buildings
- Street lighting
- Water
- Vehicle Fleet
- Waste

Actions for the community sector are shown according to the following sub-sectors:

- Residential
- Commercial
- Industrial
- Transportation
- Waste

The actions will be phased over a period until 2010 and each action has been prioritised as either:

- High
- Medium
- Low

Priorities are weighted according to potential of greenhouse gas emission savings, timeframe of projects and resources available for initiatives.

#### **Review of Plan**

The Action Plan will be reviewed annually to: -

- Identify the level of progress in achieving actions;
- Determine the level of emission reductions and abatement;
- Determine progress towards the emission reduction target;
- Revise any actions that may need amendment following information derived from energy audits or other relevant sources.

This is planned to coincide with CCP Annual Measures reporting every June - July. The review process will also update actions to include new emergent information and technology issues.

#### **Plan Implementation Responsibility**

Responsibility for implementation of the Plan has been allocated to respective Business Units across the City. City of Joondalup Business Unit Acronyms can be identified at the end of section 5 under Abbreviations/Acronyms.

For the Greenhouse Action Plan 2007 - 2010 to be successful, a whole of organisation approach to implementing the actions must be taken.

#### 4. Table - Greenhouse Action Plan 2007 - 2010

##### CORPORATE ACTIONS

Sub-sector	Action and movement	Priority	Business Unit Responsible	Start	Review
Buildings	1. Undertake energy audits on the top 5 emitting Council buildings and develop a priority schedule for undertaking ongoing audits of all other Council buildings	High	SD	July 2007	June 2008
	2. Finalise the development of a sustainable purchasing policy	High	SD and FS	July 2007	June 2008
	3. Further investigate the viability of utilising green power supplied from renewable energy for other Council facilities	High	SD and FS	July 2007	June 2008
	4. Investigate and activate where feasible energy saving devices on all suitable electrical equipment and computers	High	SD and IS	July 2007	Ongoing
	5. Ensure that future capital works building projects comply to Building Codes of Australia and State Energy codes in relation to energy efficiency requirements	Medium	AM	July 2007	Ongoing
Street lighting	6. Finalise a general lighting policy for streets, reserves, parks and cycle ways under the City's control that addresses energy efficiency	High	SD, AM and IMS	July 2007	June 2008
	7. Investigate opportunities for introducing solar power lighting as pilot projects	Medium	IMS	July 2008	June 2010
	8. Continue to request Mains Roads to supply energy efficient traffic lights when replacing or installing street lighting	Medium	IMS	July 2007	Ongoing
	9. Lobby WALGA to encourage appropriate State government utilities to provide energy efficient lighting to all new street lighting installations	Medium	SD and IMS	July 2007	June 2008

Sub-sector	Action and movement	Priority	Business Unit Responsible	Start	Review
Water	10. Continue to investigate energy efficient technology for the City's reticulation system, water pumps, including an investigation into alternative energies	Medium	OS	July 2007	Ongoing
	11. Continue the system of water pump maintenance to ensure energy efficiency.	Medium	OS	July 2007	Ongoing
	12. Review the outcome of the rainwater sensor investigations and implement viable energy and water reduction options	Medium	SD and OS	July 2007	June 2008
Vehicle Fleet	13. Continue to utilise the AMA Green Motoring Guide	Medium	AM	July 2007	Ongoing
	14. Continue to introduce vehicles that emit less greenhouse gases when replacing stock	High	AM	July 2007	Ongoing
	15. Implement the City's Green Transport Plan. To assist staff to substitute single-occupant car commuting trips with more sustainable alternatives including public transport, cycling and waking or car-pooling	High	SD	July 2007	Ongoing
	16. Continue to subscribe annually to the Carbon Neutral program to offset the total amount of fuel consumed by City vehicles through carbon sequestration	Low	SD	July 2007	Ongoing
	17. Investigate opportunities for the City's fleet to utilise alternative fuels	Low	SD and AM	July 2008	July 2009
Waste	18. Continue to seek opportunities for implementing a more comprehensive recycling service to corporate buildings	High	SD and IMS	July 2007	Ongoing

Sub-sector	Action and movement	Priority	Business Unit Responsible	Start	Review
Other	19. Improve the re-inventory process by investigating the use of different methodologies and different electricity account divisions across the City in certain sectors to determine greenhouse gas emissions, to strive for more consistent recording in the future.	Low	SD	July 2007	Ongoing
	20. Continue to support the implementation of the Greenhouse Action Plan by coordination of the Joondalup Energy team (JET)	High	SD	July 2007	Ongoing

## COMMUNITY ACTIONS

Sub-sector	Action	Priority	Business Unit Responsible	Start	Review
Residential	21. Continue to investigate the construction of an environmentally friendly building project.	Low	SD	July 2007	Ongoing
	22. Continue to develop and promote energy efficiency initiatives for new and renovation building projects.	Medium	SD and APES	July 2007	Ongoing
	23. Continue to seek and secure funding to assist in community education actions that reduce Greenhouse gas emissions.	High	SD and CDL	July 2007	Ongoing
	24. Include energy efficiency policies in the development of the new the District Planning Scheme.	Low	SD and APES	July 2007	June 2008
Commercial & Industrial	25. Continue to promote energy reduction information to the wider community.	Medium	SD and MCCS	July 2007	Ongoing
	26. Continue to implement educational activities and campaigns that promote Greenhouse gas reduction measures.	High	SD and CDL	July 2007	Ongoing
	27. Continue to promote cleaner production and Energy Smart principles in businesses operating in the City.	Low	SD	July 2007	Ongoing

Sub-sector	Action	Priority	Business Unit Responsible	Start	Review
	28. Consider the possibility of introducing the promotion of alternative transport within the review of the City's District Planing Scheme	Low	SD and APES	July 2007	June 2008
Transportation	29. Continue to pursue opportunities to increase parking and public transport options through negotiations with the State Government	Medium	Office of the CEO, IMS and SD	July 2007	Ongoing
	30. Undertake a review of the City of Joondalup Bike Plan	Medium	SD and IMS	July 2007	June 2009
	31. Launch the TravelSmart to school program within Joondalup primary schools	Low	SD and IMS	January 2008	January 2009
	32. Finalise the rollout of the Joondalup TravelSmart household program within Joondalup City and surrounding suburbs, and seek further funding to extend like community sustainability projects through the Department of Planning and Infrastructure.	Medium	SD	July 2007	June 2008
Waste	33. Continue to implement the City's Waste Management Strategy.	High	IMS	July 2007	Ongoing
Other	34. Continue to implement local community tree planting programmes to assist with offsetting carbon through sequestration	Medium	SD and IMS	July 2007	Ongoing
	35. Investigate how community initiatives can be appropriately quantified in order to qualify for annual abatement recognition in the ICLEI CCP Program	High	SD	July 2007	Ongoing

## 5 Business Unit Acronyms

IMS	Infrastructure Management Services
SD	Strategic Development
AM	Asset Management
FS	Financial Services
OS	Operations Services
CSL	Community Services and Libraries
IM	Information Management
HR	Human Resources
APES	Approvals, Planning & Environmental Services

## 6 Glossary

Abatement	Reduction in terms of the amount of greenhouse house gas
Alinta	Western Australian gas supplier
AMA	Australian Motoring Association
CCP	Cities fro Climate Protection
CO <sub>2</sub> e tonnes	Greenhouse gas emissions standardised to be measured as CO <sub>2</sub> e tonnes
GAP	City of Joondalup Greenhouse Action Plan 2007-2010
ICLEI/ANZ	International Council for Local Environmental Initiatives – Australia and New Zealand branch
JET	Joondalup Energy team comprising of key staff across the City who have responsibility for assisting in the reduction of energy consumption
Landfill gas recovery	Renewable energy from methane gas generated by landfill gas turbines at Tamala park
Landfill Gas and Power	Name of company operating from Tamala Park generating renewable energy from methane
Re-inventory	Energy resource consumption data enterer into CCP database
Resource Recovery facility	Waste facility involving recycling of waste
Synergy	Western Australian electricity supplier



Walking School Bus



Materials Recycling Facility - Wangara