



Town of Cottesloe

Carbon Inventory Report



Reporting period: 1 July 2009 to 30 June 2010

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10 June 2011

Summary

This report summarises the findings from a baseline inventory that was completed for the Town of Cottesloe. The Town has committed to become a carbon neutral Council by 2015. This inventory begins the first step of the carbon neutral process. The footprint measured was 806 tonnes of carbon dioxide equivalent emissions for the 2009/2010 financial year. Recommendations for the Town following on from completing this baseline inventory are as follows:

1. This report will be submitted to Elected Members by July 2011 summarising the inventories findings.
2. The 2009/2010 carbon inventory report will be published on the Town's website by August 2011 as a commitment towards becoming carbon neutral and achieving Step 1 of the carbon neutral process.
3. A workshop will be held for Elected Members and senior staff by August 2011 to set carbon reduction targets and discuss options to proceed with Step 2 of the agreed carbon neutral process.
4. Following from the workshop a Carbon Reduction Strategy will be developed for the Town to achieve reduction targets, including carbon neutrality as soon as practicable, and before 2015. The Carbon Reduction Strategy or Action Plan will be finalized by December 2011.
5. Future annual inventories will be prepared each year by May and will be published on the Town's website by August of the same year.
6. Bi-annual verification will be sought for inventories after carbon neutrality has been claimed, in accordance with the recommendations set out in National Carbon Offset Standard (DCC 2010).

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Introduction

This carbon report has been prepared for the Town of Cottesloe (hereafter “the Town”) and covers the period from 1 July 2009 to 30 June 2010.

This report has been developed with close reference to the standards for the greenhouse gas emissions reporting set out by the Greenhouse Gas Protocol Revised Edition (GHG Protocol) (WRSD 2004) and the National Carbon Offset Standard (NCOS) (DCC 2010).

Background

The Town of Cottesloe is a four square kilometer metropolitan Council in Western Australia. Cottesloe is an iconic beach destination, located approximately 12 km west of Perth, and an attractive place to live. The heritage of the area is apparent from the wide verges and Norfolk Island Pines lining the streets. As a popular tourist destination, the Town of Cottesloe aims to maintain a clean and relaxed image for all to enjoy.

Local Governments face the challenge of adapting to climatic change and protecting their infrastructure, whilst keeping the community safe. As such, the Town of Cottesloe believes it should show leadership by striving to reduce greenhouse gas emissions while continuing to provide essential services and operations.

The Town started actively reducing greenhouse gas emissions through the ICLEI Cities for Climate Change Protection (CCP) program in 1996. Corporate greenhouse gas emissions decreased from 939 tonnes in 1996, the baseline year, to 866 tonnes in 2003. Unfortunately CCP was defunded in 2009, but the Town would like to measure progress against their greenhouse gas emission target for a 20 % reduction of greenhouse gases from 1996 to 2010 as part of the Carbon Neutral strategy and complete a final inventory to measure our greenhouse gas emissions reductions since 1996. This may not, however, be possible since the methods used to complete the 2009/2010 baseline inventory are consistent with the Greenhouse Gas Protocol, which may not directly compare to the methods used when preparing emissions inventories under CCP.

Carbon Neutral

In February 2010 the Town of Cottesloe unanimously carried the Motion to follow a four step process to achieve carbon neutrality as soon as practicable, and before 2015.

Carbon neutral means reducing our net greenhouse gas emissions to zero. The terms carbon and carbon emissions have been used in the media as a shorthand way of referring to all greenhouse emissions that are contributing to the enhanced global warming or climate change process. Greenhouse emissions are made up of a number of greenhouse gases in addition to carbon dioxide, each adding different levels of warming to the atmosphere. For example, the greenhouse warming contribution of a tonne of methane is equivalent to approximately 21 tonnes of carbon dioxide. The main greenhouse gases are:

- Carbon dioxide
- Methane
- Nitrous dioxide
- Fluorocarbons

To capture the effects of all of these greenhouse gases on global warming a carbon dioxide equivalence (CO₂-e) is used as a standard measure that takes account of the different global warming potentials of greenhouse gases and expresses the cumulative effect in a common unit (DCC 2010). Hence the term “carbon neutral” applies when all of the measured cumulative greenhouse gases from an organisation are avoided, reduced or offset to a point where the net emissions are equal to zero.

Four-Step Process towards Carbon Neutral

Step 1. Measure greenhouse gas footprint.

Step 2. Reduce highest emission producing areas through a Carbon Reduction Plan.

Step 3. Switch to energy sources that create less greenhouse gas emissions.

Step 4. Offset all remaining greenhouse gas emissions.

Town of Cottesloe Profile

The Town employed 39 full-time staff and operated out of three buildings in the 2009/2010 financial year – the main Administrative Building (the Civic Centre), the Depot, and the Rangers were housed at the Caretakers Cottage. The Civic Centre has a total floor space of 1,546 m², the Depot has a total floor space of 796 m² and the Caretakers Cottage has a total floor space of 64 m².

Financials for 2009/2010 show the Town had total revenue of \$9,665,868; and total profits of \$620,615.

In developing this report and the underlying carbon inventory Elizabeth Lowrey, Sustainability Officer at the Town, has liaised with management, contractors and staff; accessed activity data from utility providers; and looked through invoices to gather the necessary data. Elizabeth Lowrey successfully completed an online Carbon Accounting Course through Swinburne University of Technology (covering Developing a Carbon Inventory for the workplace and a Carbon Report for the workplace) in May 2011.

Aims

This report presents the Town’s greenhouse gas emission sources and total emissions for the baseline year, 1 July 2009 to 30 June 2010. Specifically the report has been developed:

- To present the Town’s greenhouse gas inventory, developed in accordance with the GHG Protocol, as a baseline year for their greenhouse gas emissions reporting;
- To begin the four step process (measuring greenhouse gas footprint) to show leadership as a Local Government by becoming carbon neutral;
- To identify any opportunities to save money by increasing the energy efficiency of the Town’s operations.

Primary Greenhouse Gas Generating Activities

The primary activities identified through the carbon inventory that generated the most greenhouse gas emissions for the Town are:

- Purchased electricity (scope 2 emissions) for streetlights;
- Construction and Demolition Waste to landfill (scope 3 emissions);
- Purchased electricity (scope 2 emissions) for Council buildings and infra-structure; and
- Petrol combustion (scope 1 emissions) from fleet vehicles for transportation.

Scope Definitions

Scopes are used to categorise direct and indirect emissions. Scopes have been introduced by the Greenhouse Gas Protocol to improve carbon accounting transparency and avoid double counting of emissions.

- **Scope 1** – Direct greenhouse gas emissions occurring as a result of activities that constitute the facility (i.e. the burning of fuel in a vehicle).
- **Scope 2** – Indirect greenhouse gas emissions from energy (e.g. electricity) that is generated off site and then purchased for use by the Town of Cottesloe.
- **Scope 3** – All other indirect greenhouse gas emissions that have been generated as a consequence of the Town of Cottesloe’s activities, but occur from sources not owned or operated by the Town. These are often harder to quantify than scope 1 and 2 emissions and the Town has less control over them, so only selected scope 3 emissions are included in an organisation’s inventory.

Boundaries

This section shows the organisational and operational boundaries that were used to develop the carbon inventory for the Town. All activities that generate greenhouse gas emissions are shown as direct or indirect emissions (determined by their scope) in Figure 1.

As a Local Government the Town generally has 100% ownership of premises and vehicles that are managed under the guidance of the Chief Executive Officer. The exceptions are jointly funded buildings and community centres, such as the Grove Precinct. Since the Town seeks to become carbon neutral operational control was used as the boundary determinant for the inventory. This defines a boundary around the greenhouse gas generating activities that the Town believes they can control or influence (see Figure 1).

“Operational control: The greatest authority to introduce or implement any or all of the following for the Facility:

- 1) Operating policies*
- 2) Health and safety policies*
- 3) Environmental policies*

Only one corporation can have operational control over a facility at one time.” (DCC 2010)

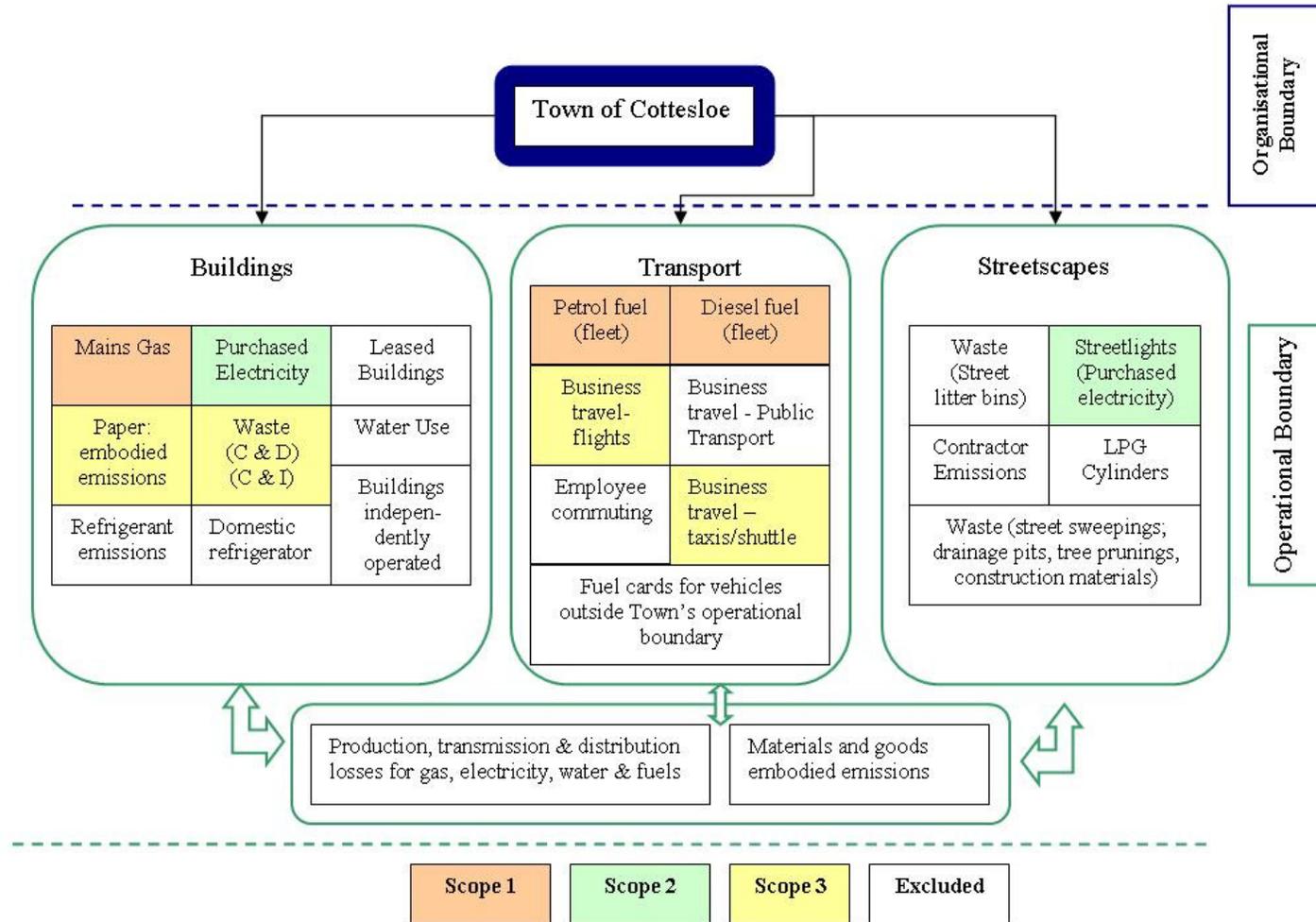


Figure 1: Town of Cottesloe's Organisational and Operational Boundaries for the Carbon Inventory (Source: Based upon diagram from p 25, GHG Protocol, WRS 2004)

Emissions Sources Included

Table 1. Emissions sources included in the boundary for Town's carbon inventory 1 July 2009 – 30 June 2010

Emissions Source	Scope	Justification
Petrol fuel (fleet)	Scope 1	The Town consumed petrol for transportation that has, in accordance with the mandatory requirement of the GHG Protocol, been included in the carbon inventory.
Diesel fuel (fleet)	Scope 1	The Town consumed diesel for transportation that has, in accordance with the mandatory requirement of the GHG Protocol, been included in the carbon inventory.
Natural Gas	Scope 1	The Town consumed pipeline distributed natural gas that has, in accordance with the mandatory requirements of the GHG Protocol, been included in the carbon inventory.
Purchased electricity (buildings)	Scope 2	The Town consumed purchased electricity for their buildings that has, in accordance with the mandatory requirement of the GHG Protocol, been included in the carbon inventory.
Purchased electricity (streetlights)	Scope 2	The Town has included purchased electricity for streetlights in the carbon inventory. The Town does not control street light infra-structure, since Western Power is responsible for installing and maintaining it, however, purchase of electricity for street lighting is a responsibility of Local Government.
Business travel - flights	Scope 3	Business flights have been included in the carbon inventory since NCOS recommends that business travel should be included as a minimum standard for carbon accounting.
Business travel – taxis/shuttles	Scope 3	Taxis and Shuttles used by staff for business travel have been included in the carbon inventory since NCOS recommends that business travel should be included as a minimum standard for carbon accounting.
Paper use	Scope 3	Paper use has been included since it is a major product used in the office and NCOS recommends that paper use should be included as a minimum standard for carbon accounting.
Waste Commercial and Industrial (C & I) Construction and Demolition (C & D)	Scope 3	All waste disposed to landfill from Council operations was included since it is an area that the Town could target to reduce emissions. NCOS recommends that disposal of waste generated by an organisation should be included as a minimum standard for carbon accounting.

Emissions Sources Excluded

Table 2. Emissions sources excluded from the Town's carbon inventory 1 July 2009 – 30 June 2010

Emissions Source	Scope	Justification
Refrigerant emissions (domestic fridge)	Scope 1	Emissions from the domestic refrigerator have been excluded since they were considered to be negligible.
Refrigerant emissions (air conditioner)	Scope 1	The Town has approximately ten air conditioning units that service the Civic Centre building. These were considered to have a low contribution to the emissions footprint and so were excluded from the carbon inventory.
LPG cylinders	Scope 1	The Town has one portable LPG cylinder for the barbeque at the Depot, which has been excluded from the carbon inventory since it is considered to have negligible contribution to the Town's emissions footprint.

Employee commuting (personal vehicles)	Scope 3	This inventory aims to present the major emissions under the Town's operational control so that they can become carbon neutral. Employee commuting does not fit within the objectives set but it may be partly addressed through initiatives implemented when the Town begins a Carbon Reduction Plan.
Employee commuting & Business Travel (public transport)	Scope 3	Public transport is considered to be difficult to measure and likely to be a marginal part of the transport used by most employees. At this stage it has been excluded from the carbon inventory for the Town.
Fuel cards for vehicles outside the Town's operational boundaries	Scope 3	Fuel cards that the Town manages for external use (e.g. TAPSS minibus and staff vehicles) have been excluded since they are not under the operational control and hence fall outside the boundaries for the Town's carbon inventory.
Waste (street litter bins)	Scope 3	The Town aims to include waste from street litter bins as part of their carbon inventory but the availability and quality of data was not sufficient for the baseline year. Data capturing methods will be put in place so that waste from litter bins can be included in future inventories.
Waste (tree prunings; street sweepings, drainage pits, construction materials)	Scope 3	Tree prunings and other vegetation waste from the Town's operations is all mulched and re-used. Construction materials are collected by a contractor who reclaims and recycles almost all of the content. Contaminated soils and sands from street sweeping are remediated and then sold as soil after the process is complete. Since these products are claimed and re-used they have been excluded from the Town's carbon inventory.
Contractors	Scope 3	Emissions generated from contractors and the activities that they are hired to do for the Town have been excluded for the baseline inventory but may be included in future inventories if data can be calculated to a satisfactory level of accuracy.
Water use and associated production and distribution emissions.	Scope 3	Water use (and associated production and distribution emissions) has been excluded for the baseline inventory since it is not considered to be a major emissions source. Water use may be included in future inventories.
Emissions from extraction and transport of petrol	Scope 3	The Town has chosen to exclude emissions from extraction and transport of petrol since the Town has an inability to affect these emissions.
Emissions from extraction and transport of diesel	Scope 3	The Town has chosen to exclude emissions from extraction and transport of diesel since the Town has an inability to affect these emissions.
Emissions from fuel extraction and T&D line losses for purchased electricity	Scope 3	The Town has chosen to exclude emissions from extraction and T & D line losses for purchased electricity since the Town has an inability to affect these emissions.
Emissions from extraction, transport, and line losses of natural gas	Scope 3	The Town has chosen to exclude emissions from extraction, transport and line losses of natural gas since the Town has an inability to affect these emissions.
Materials and Goods embodied emissions	Scope 3	Emissions generated from materials and goods embodied emissions have been excluded for the baseline inventory but may be included in future inventories if data can be calculated to a satisfactory level of accuracy.
Leased and Independently Operated Buildings	Scope 3	All Leased and Independently managed Council owned buildings have been excluded from the Town's carbon inventory since they fall outside the chosen boundary of "operational control".

Carbon Inventory

The Town's corporate greenhouse gas emission sources are presented in Figure 2, the summary of the carbon inventory. The inventory was prepared using the standard methodology set out in the GHG Protocol. The Town's total greenhouse gas emissions, or carbon footprint, were calculated to be 806 tonnes of carbon dioxide equivalent emissions for the 2009/2010 financial year.

Site	Emissions Source	Consumption	Consumption Units	Tonnes CO _{2-e}	Proportion of total inventory (%)
Scope 1					
Fleet	Petrol - mobile	43074.7	L	98.58	12%
Fleet	Diesel - mobile	13637	L	36.75	5%
Buildings	Gas - Distributed in a Pipeline	7126.79	m ³	0.37	0%
Total Scope 1				135.70	17%
Scope 2					
Streetlights (Western Power)	Purchased Electricity	409006.78	kWh	335.39	42%
Purchased Electricity - Black	Purchased Electricity	155968.96	kWh	127.89	16%
Purchased Electricity - Green	Purchased Electricity	175165.92	kWh	0.00	0%
Total Scope 2				463.28	57%
Scope 3					
Cottesloe Area	Waste - Construction & Demolition	330.00	m ³	158.40	20%
Buildings	Waste - Commercial & Industrial	133.14	m ³	29.29	4%
Town of Cottesloe	Business Travel (Taxi/Shuttle)	4320	L petrol	9.89	1%
Town of Cottesloe	Business Travel (flights)	32550	km(person)	6.83	1%
Town of Cottesloe	Printing paper	1385.8	kg(paper)	2.61	0%
Total Scope 3				207.02	26%
Total Scope 1, Scope 2 and Scope 3 emissions				805.99	100%
Reduction Measures					
Carbon Neutral Fleet Offsets		135.33	tonnes CO _{2-e}	-143.29	
Net Emissions for Town of Cottesloe				662.70	

Figure 2. Summary of the Town's carbon inventory for the period of 1 July 2009 to 30 June 2010.

Emissions factors for purchased electricity (scope 2), natural gas distributed in a pipeline (scope 1), petrol fuel (scope 1), diesel fuel (scope 1), taxi/shuttles used for business travel (scope 3) and waste disposed to landfill (scope 3) were all taken from the National Greenhouse Accounts (NGA) Factors (2010).

Emissions factors for flights were taken from EPA Victoria's worksheets for calculating greenhouse gas emissions: Worksheet 3 Flights. Emissions factors for paper use were also taken from EPA Victoria's worksheets, Worksheet 4 Paper. Waste conversion factors were obtained from Sustainability Victoria.

The Town did not burn any biomass or biofuels during the inventory period.

Figure 3 shows that over half of the emissions generated by the Town are from scope 2, purchased electricity. This reflects the Town's reliance on purchased electricity for street lighting and to heat, cool and provide lighting for buildings.

**Town of Cottesloe Greenhouse Gas Inventory (2009/2010)
Percentage of Scope Sources**

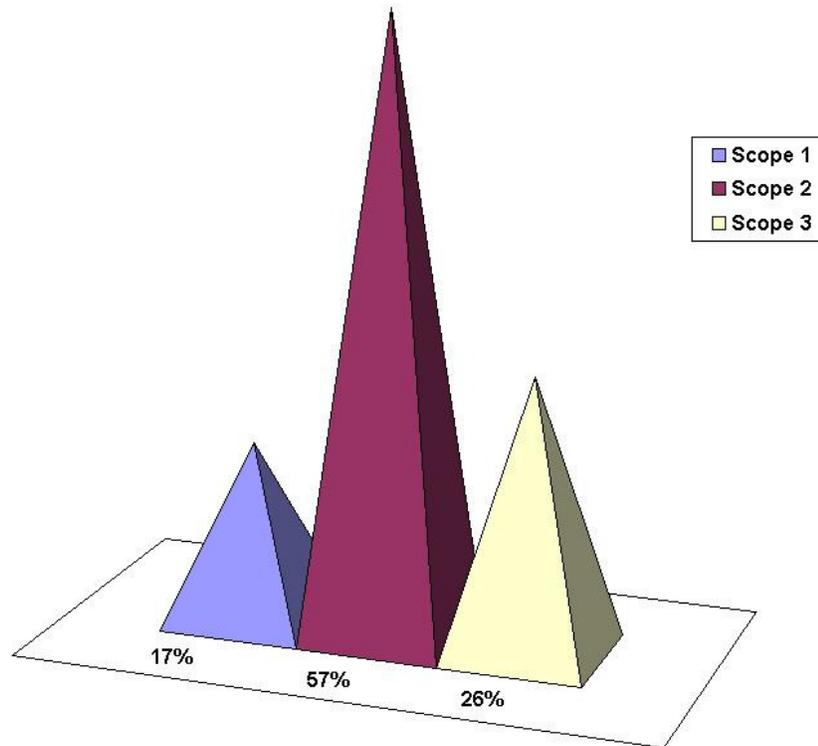


Figure 3. The Town's emissions in tonnes CO₂-e by Scope

Figure 4 shows the emissions generated by the Town by activity source and the large contribution from purchased electricity for street lighting (scope 2). The second largest emissions source is waste disposed to landfill from Depot operations (scope 3). The third largest emissions source is scope 2 purchased electricity buildings and infra-structure for Council. Petrol fuel is the fourth largest emissions source.

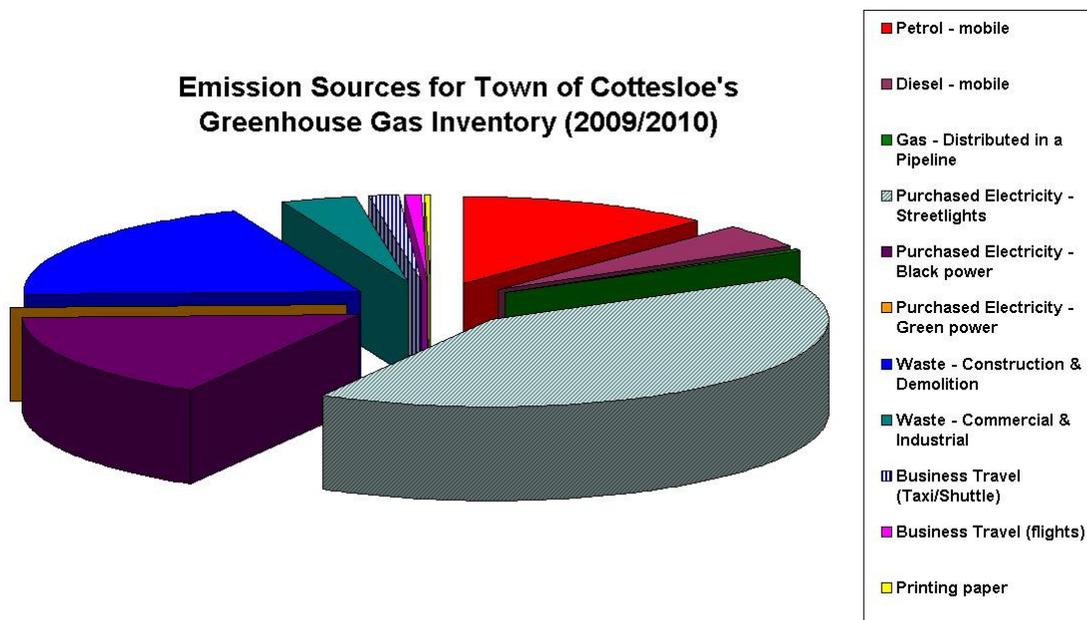


Figure 4. The Town's emissions sources in tonnes CO_{2-e}

Indicators

Ratio indicators provide information on performance relative to each organisation and can facilitate comparison between similar products and processes over time. Companies may choose to report greenhouse gas indicators for many reasons, including comparing performance through time, and comparing performance against similar companies. It is important to recognize that inherent diversity of businesses and circumstances of individual companies can result in misleading indicators.

In the Town's case intensity ratios, showing the amount of greenhouse gas emissions in term of organizational output, have been selected to show the total greenhouse gas emissions per meter square area of floor space and per full-time employee (see Table 3).

To provide flexibility in the way that the emissions data can be used Table 3 also shows productivity ratios for the Town, which indicates the total revenue against total emissions calculated for the period.

Table 3. Ratio indicators showing the Town's greenhouse gas emissions relative to measures specific to their organisation.

Ratio Indicators			
Basis	Value	Units	Gross Emissions
Intensity Ratios			
Floor Space (Depot, Civic Centre, Caretaker's Cottage)	2406	m ²	0.33 t CO _{2-e} /m ²
Staff	39	Full-time employee (fte)	20.67 t CO _{2-e} /fte
Productivity Ratios			
Total revenue	\$9,665,868	Dollars	\$11,992 Dollars/ t CO _{2-e}

Implications

Original Drivers

The carbon inventory has established a baseline year for the Town to measure against for all future greenhouse gas reporting.

The carbon inventory measured a baseline that will be used to help achieve the first step of the agreed four step process toward the Town becoming a carbon neutral Council.

The carbon inventory has identified opportunities for the Town to save money by increasing their energy efficiency or finding alternative low carbon energy sources.

Financial Implications

The Australian Government is developing legislation that places a price on carbon emissions. Based upon the 2009/2010 carbon inventory Table 4 outlines the potential financial impact that the Town may incur from paying a price for their greenhouse gas emissions, in addition to any carbon offsets that the Town purchases.

Table 4. Estimated financial cost for the Town of various carbon prices (base upon 2009/2010 emissions of 806 tonnes CO_{2-e}).

Carbon Price (\$ per tonne)	Financial Impact for the Town of Cottesloe (\$ per year)
\$10	\$8,060
\$25	\$20,150
\$50	\$40,300

If a carbon price is introduced it may increase over several years to help companies, like the Town, adapt to the new economy. However, if the Town can identify cost efficient ways to reduce their greenhouse gas emissions now then they will be well placed to handle the introduction of a carbon price in the future.

Regulations

The Town operates at 109 Broome Street, Cottesloe Western Australia and it is, therefore, within the jurisdiction of the Australian Government and the Western Australian State Government. Table 5 details the relevant legislation against the Town's carbon inventory. The Town does not currently trigger any of the regulatory thresholds.

Table 5. The Town's regulatory obligations based upon annual emissions of 806 tonnes CO₂e.

Legislation	Jurisdiction	Reporting Threshold	Threshold reached?
National Greenhouse and Energy Reporting (NGER) Act 2007	Federal	2009/2010 87.5 kt CO ₂ e of GHG emissions or 350 TJ of energy produced per financial year.	No
Carbon Pollution Reduction Scheme (CPRS)	Federal (proposed)	The CPRS will only account for the Scope 1 emissions from facilities that emit more than 25 kilotonnes of greenhouse gases	No (proposed)
Energy Efficiency Opportunities Act 2006	Federal	2008/2009 Corporations with controlling groups that use more than 500 TJ of energy (same as NGER threshold)	No

Voluntary Reporting

The Town has previously reported their greenhouse gas emissions as part of ICLEIs Cities for Climate Change Protection (CCP) and it is recommended that the carbon inventory be voluntarily reported as part of the carbon neutral process. The Town has chosen to follow the Standards set out in NCOS for voluntary carbon accounting, unless there is conflict with other Council policy (e.g. purchasing local offsets). It is recommended that the most recent inventory completed is assessed and verified by an independent third party before carbon neutrality is claimed. This will ensure that the Town has met all of the requirements that they sought to achieve through following the Standard set out by NCOS (and the GHG Protocol) of relevance, consistency, transparency and accuracy.

This carbon inventory has been conducted in accordance with the GHG Protocol upon which NCOS is closely based. As such, if the Town wishes to gain NCOS accreditation it is likely that they will be able to achieve it, but they would need to go to an NCOS approved independent auditor to achieve accreditation.

Carbon Management

The four-step process outlined above will be followed by the Town to achieve their goal of becoming a carbon neutral Council. Below is a detailed description of how to apply carbon management to the Town's emissions footprint by following the EPA Victoria's "Best Practice" Carbon Management Principles (Figure 5). The Principles are an extended version of the four-step agreed process and may add value to the actions that the Town decides to implement through their Carbon Reduction Strategy.

Measure

Through measuring their greenhouse gas emissions the Town has begun a process of carbon management. The 2009/2010 inventory is the first year that the Town has measured their emissions in accordance with the GHG Protocol and so it is the baseline upon which they can build data and compare performance through time.

Set Objectives

The Town must set objectives on what they wish to achieve through the carbon management process. It is useful to aim for long term goals, (e.g. reduce emissions by forty percent), as well as short term goals to assess progress along the way. Goals may include considering the implementation of carbon reduction measures that have a minimum pay-back period (e.g. four years). For more information on setting targets refer to the GHG Protocol. Below is a summary of how the Carbon Management Principles could be applied to the Town's inventory to develop a basic Carbon Reduction Plan.

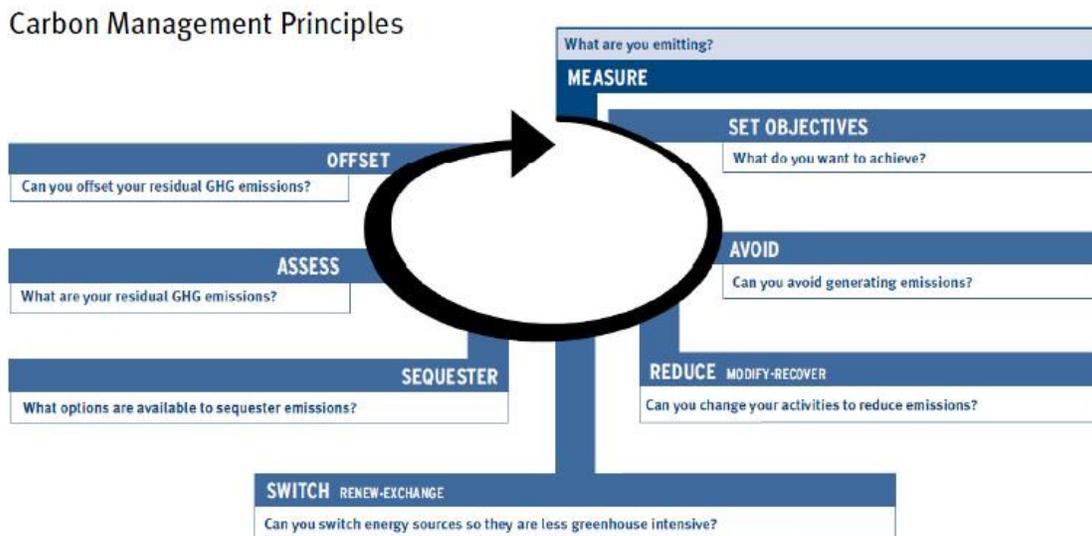


Figure 5. EPA Victoria's "Best Practice" Carbon Management Principles.

Avoid Emissions

The best way to reduce the carbon impact of an organisation is to avoid creating emissions where possible. Avoidance opportunities often don't require capital outlay but rely on changing behaviour and procedures.

Avoiding purchased electricity consumption (scope 2), which contributed nearly sixty percent of the Town's carbon footprint, in Council buildings may be relatively easily addressed by behavioural change projects that target turning off computers and lighting when areas are unattended. This could also include encouraging staff to use less hot water – heating water often uses large amounts of energy, particularly if it is only for small amounts of hot water. Air conditioning in the Civic Centre has been an ongoing problem, with many staff working at low temperatures needing to warm their desk area with individual heaters in winter. If the air conditioning is fixed so that the ambient temperature is comfortable for staff then electricity use to maintain a comfortable working temperature will be avoided.

The Town had a high proportion of emissions (20% of the inventory) from waste disposed to landfill (scope 3). The best way to reduce waste emission is to avoid the production of the waste by reducing packaging and purchasing only what is needed for business operations. A high proportion was from general construction and demolition waste that is collected on street verges, which would require community education and engagement programs for minimisation.

Emissions from petrol (12% of the inventory) and diesel (5% of the inventory) fuels (scope 1) were the third major source of greenhouse gas emissions for the Town. Emissions from combustion of fleet fuels could be avoided by reducing the number of vehicles in the fleet. This may include changing procedures so that vehicles are no longer required for regular staff duties.

Reduce Emissions

After investigating ways to avoid creating emissions it is recommended that the Town looks for ways to reduce their emissions by increasing the efficiency of activities. Purchased electricity was a major contributor of greenhouse gas emissions. The Town could consider replacing the insulation in buildings, or checking to make sure that existing insulation meets a minimum of R 3.5 in ceilings and R 2.0 in walls, to reduce the need for artificial cooling or heating, which will reduce overall energy requirements. For areas that have glass entries, such as the reception area of the Civic Centre, high performance double glazed glass would help to insulate against temperature extremes. Lighting uses large amounts of energy. The sensors that are installed in the Civic Centre need to be checked and properly maintained so that they operate effectively. The Town should consider installing energy efficient lights, such as compact fluorescent, LED or metal halide lighting, to reduce energy loss and thus increase efficiency. Insulating pipes that carry hot water from the unit to the tap can significantly reduce energy lost, increasing the energy efficiency.

Since the Street lighting infra-structure is controlled and maintained by Western Power the Town has minimal influence over the energy efficiency of this activity. However, there is now an option to change over 80 Watt Mercury Vapour (MV) lamps to more efficient 42 Watt Compact Fluorescent lamps. Western Power will replace all 80 Watt MV lamps when they reach the end of their life. There is, however, an option for customers to fund an upgrade to increase the energy efficiency of their street lighting.

To reduce the emissions generated from waste disposed to landfill the Town must actively try to reuse any materials wherever possible and ensure that all recyclable materials are recycled. The Town has a strategy in place to divert waste from landfill when the DICOM unit begins operating in 2012. Cottesloe is one of five Councils in the western suburbs of Perth, together with the Western Metropolitan Regional Council, involved in the development of an alternate waste disposal technology – the DICOM unit. This will be the first time in Australia that an existing transfer station has been retrofitted with an alternative waste processing technology. The DICOM unit will significantly reduce the amount of waste disposed to landfill by automatically sorting plastics and metals for recycling out of the waste stream and diverting organic materials to a composting unit. Biogas energy created during the composting process is captured and used to create electricity to power the Plant. When the DICOM unit is operating the waste management from the Town will be much more efficient and less waste will be disposed to landfill.

It may be appropriate for the Town to purchase alternative transport vehicles, such as scooters or electric bicycles that use less fuel than fleet vehicles. This may only help for local travel duties but since the Town is only four square kilometers in area it is likely that many trips staff do in the course of their duties will be within a close radius of their office.

Switch to Less Greenhouse Intensive Energy Sources

Switching to more efficient, low greenhouse gas producing energy alternatives is a good way to reduce your carbon footprint. The Town will need to develop a strategy to reduce the amount of scope 2 purchased electricity (also an expensive utility) consumed. Purchased electricity accounts for fifty percent of the greenhouse gas emissions calculated for the Town. Since a significant proportion of the purchased electricity is used for street lighting, with Western Power providing the infra-structure, the Town will need to investigate alternative low carbon electricity sources to reduce their greenhouse gas emission footprint.

The Town should investigate renewable energy, such as solar power, to reduce the amount of non-renewable energy that they are purchasing from a supplier. Alternate energy options would need to have a cost – benefit analysis performed to determine what is feasible.

Green Power is currently purchased for the Civic Centre, offsetting the black or non-renewable electricity purchased. The Town could increase the amount of Green Power that they purchase to switch to less greenhouse intensive energy sources for purchased electricity.

After the Town investigates avenues to reduce their fleet size and avoid emissions they may wish to switch to alternative low carbon fuel sources. This may include switching their fleet to LPG or biodiesel instead of petrol or diesel. Gas would be a good way to reduce greenhouse gas emissions and save money on fuel.

Sequester

Sequestering carbon is not a viable option for The Town.

Assess

After the Town goes through the process of Measuring; Set Objectives; Avoid, Reduce, Switch they will need to Assess their progress towards their goals. At this point the Town may be happy with their progress or they may decide that they need to make changes to their carbon management process if they are not reducing their emissions as quickly as planned.

Offset

The Town has invested in 143 tonnes of carbon dioxide equivalent to offset emissions from their fleet. It is recommended that if the Town purchases more offsets in the future that they refer to information set out in NCOS to ensure that they know how to select the right type of offsets for their needs.

Review

The Town will need to review their carbon management process to ensure that they are keeping up to date with any changes (legislative or technological) and optimizing their strategy towards reaching their carbon reduction goals. Since carbon inventory reporting occurs for a year period it is recommended that inventories are completed annually with a bi-annual verification. This would meet the Standards set out in NCOS.

Reporting Procedures and Improvements

While undertaking the carbon inventory some areas for improvement were identified in the data management procedures. It is suggested that the Town improves its capture of activity data so that it is readily available for carbon accounting purposes. The Town currently uses Authority as its finance system. It is not considered feasible to add an “activity” section to the invoice system but fuel use for vehicles can be captured through this system. The Town is aiming to set up the capture of fuel use by July 2011 to reduce the administrative burden required to collect fuel consumption data.

A Carbon Waste Management Report has been prepared to record the accuracy of waste data at the time of the 2009/2010 greenhouse gas inventory for the Town. Almost all areas of waste data collection require data capture methodologies to be put in place to ensure more reliable data for future inventories. The only waste area that was excluded entirely due to low quality data was street litter bins so this is considered a high priority area to improve data capture.

The Town has no existing carbon reporting procedures. The inventory and this report could be used as a template for future reporting activities.

This report has been prepared in accordance with the Town’s privacy and data security policies. The methodology used to develop the carbon report has been based upon Standards set out in the GHG Protocol.

Recommendations

To ensure that the carbon neutral process begins with this baseline inventory report being completed it is recommended that the following actions are completed within the advised timeframes:

1. This report will be submitted to Elected Members by July 2011 summarising the inventories findings.
2. The 2009/2010 carbon inventory report will be published on the Town’s website by August 2011 as a commitment towards becoming carbon neutral and achieving Step 1 of the carbon neutral process.
3. A workshop will be held for Elected Members and senior staff by August 2011 to set carbon reduction targets and discuss options to proceed with Step 2 of the agreed carbon neutral process.
4. Following from the workshop a Carbon Reduction Strategy will be developed for the Town to achieve reduction targets, including carbon neutrality as soon as practicable, and before 2015. The Carbon Reduction Strategy or Action Plan will be finalized by December 2011.
5. Future annual inventories will be prepared each year by May and will be published on the Town’s website by August of the same year.
6. Bi-annual verification will be sought for inventories after carbon neutrality has been claimed, in accordance with the recommendations set out in National Carbon Offset Standard (DCC 2010).

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