



Ministry for the
Environment
Manatū Mō Te Taiao

Emission Inventory Report

For the period 1 July 2006 to 30 June 2007

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Emissions Inventory Summary (7.3.1 e)¹

Type of emission	Tonnes CO ₂ -e*
Direct (Scope 1) emissions	
Petrol use	4.96
Total Direct (Scope 1) emissions	4.96
Indirect (Scope 2) emissions	
All purchased electricity in owned buildings and leased buildings where the agency is the sole tenant	135.25
Purchased electricity for lighting and utility/appliance power in leased space where the agency is not the sole tenant	12.29
Total Indirect (Scope 2) emissions	147.54
Indirect (Scope 3) emissions	
Transmission and distribution line losses for all purchased electricity	13.90
Air travel	719.53
Business travel in rental cars / taxis	22.86
Waste to landfill	3.15
Total Indirect (Scope 3) emissions	759.79
Total emissions	911.94

* Data expressed in carbon dioxide equivalent units.

(7.3.1 e)

Area	CO ₂	CH ₄	N ₂ O	HFCs	PFCs	SF ₆	CO ₂ e
Scope 1	4.90	0.03	0.03				4.96
Scope 2	147.54						147.54
Scope 3	759.79						759.79
Total	911.88	0.03	0.03				911.94

Summary of excluded emissions

Staff travel in personal vehicles is estimated to contribute a negligible amount to this emissions inventory.

Collection of this data would involve analysis of all expense claims, and vehicle specifications to establish an accurate emission value, and is therefore excluded from these calculations on a cost/benefit basis.

¹ References shown in brackets, eg, (7.3.1 c) in the title, refer to the relevant section of the ISO Standard 14064.

1 Introduction (7.3.1 p)

This emissions inventory report has been prepared and written in accordance with Part 7.3.1 of ISO 14064-1 and is designed to be used in the process of becoming carbon neutral by 2012.

2 Statement of intent

The Ministry for the Environment is one of the six public service agencies that will lead the way in achieving carbon neutrality by the year 2012. This programme will be broken down into the three key stages set out below:

- measure emissions
- reduce emissions
- offset unavoidable emissions.

This carbon neutral process will include the offsetting of the reduced carbon emissions through a centralised process which will be administered by the Ministry for the Environment.

3 Organisation description (7.3.1 a)

The Ministry for the Environment had approximately 280 full-time equivalent (FTE) staff during the 2006/07 financial year in its Auckland, Wellington and Christchurch offices as follows:

- Auckland 7
- Wellington 266
- Christchurch 7

The Ministry's Statement of Intent 2007–2010 notes that the Ministry's functions under the Environment Act can be summarised as:

- to advise the Minister on all aspects of environmental administration
- to obtain information, and conduct and undertake research
- to advise the Government and its agencies on:
 - environmental legislation
 - assessment and monitoring of environmental impacts
 - pollution management and control
 - identification and reduction of natural hazards
 - control of hazardous substances
- to assist in resolving conflict regarding policies and proposals that may affect the environment
- to provide and disseminate information and services
- to promote environmental policies, including education and mechanisms for promoting participation in environmental planning.

4 Persons responsible (7.3.1 b)

Responsibility	Name	Organisation
Overall responsibility for emissions inventory	Hugh Logan	Chief Executive, Ministry for the Environment
Preparation of documents and approval	Michael Osborne	Property Manager, Ministry for the Environment
Waste to landfill	Kirsten Haupt	Adviser, Ministry for the Environment

5 Organisational boundaries included for this report period (7.3.1 d)

The agency uses the financial control-based approach to defining organisational boundaries. Due to the legally prescribed nature of the core public service, the application of either the control or equity approach is likely to have the same effect, as government agencies do not have subsidiaries or associate companies in the same manner that private sector companies have group structures, or complex lease arrangements.

The organisational boundaries of an agency are defined by statute and for the purposes of the greenhouse gas (GHG) inventory include core agency activities only.

6 Emissions sources inclusions (7.3.1 e)

Emission sources were identified with reference to the methodology described in the GHG Protocol and the ISO 14064-1 (2006) standard. Identification of emissions sources was achieved using the specific guidance on Scope 3 factors included in the Cabinet Paper POL (07) 131: Towards a Sustainable New Zealand: Carbon Neutral Public Service. Further guidance was obtained from the Ministry for the Environment.

These emissions have then been classified into three categories. The definition of each has been adapted from the GHG Protocol; the three types of emissions are:

- direct emissions (Scope 1): emissions from sources that are owned or controlled by the agency
- indirect emissions (Scope 2): emissions from the generation of purchased electricity consumed by the agency
- indirect emissions (Scope 3): emissions that occur as a consequence of the activities of the agency, but occur from sources not owned or controlled by the agency. Inclusions of these are determined on a case-by-case basis, and relate to the agency's aims of the programme.

6.1 Actual emissions

Emission source	Scope of emission
Petrol for vehicles	Scope 1
All purchased electricity in owned buildings and leased buildings where the agency is the sole tenant	Scope 2
Transmission and distribution line losses for all purchased electricity	Scope 3
Domestic air travel	Scope 3
International air travel	Scope 3
Taxi travel	Scope 3
Business travel in rental cars	Scope 3
Business travel in employee-owned cars	Scope 3
Waste to landfill	Scope 3
Purchased electricity for base building power in leased buildings where the agency is not the sole tenant	Scope 3

No biomass is used in the Ministry for the Environment’s operations and therefore no emissions from the combustion of biomass are included (7.3.1 f).

No imported electricity, heat or steam is used in the Ministry for the Environment’s operations and therefore no emissions from these sources are included (7.3.1 j).

7 Emission sources exclusions (7.3.1 h)

Emission source	Scope of emission
Purchased goods and services	Scope 1
Carbon embodied within buildings	Scope 1
Corporate waste	Scope 1
Staff commuting to work in personal cars	Scope 3

7.1 Purchased goods and services

The emissions associated with purchased goods and services make up the Scope 1 emissions of suppliers and would be included in their carbon footprint. Examples are the emissions associated with cleaning, archiving and printing.

The initiative for procurement of sustainable goods and services in particular will help to change the ways in which the agencies undertake procurement programmes, to ensure they take into account the longer-term sustainability implications of procurement decisions; and to encourage suppliers to adopt sustainable business practices. Therefore these areas will not be included within the scope.

7.2 Carbon embodied within buildings

The production of cement and other building materials make up the Scope 1 emissions of suppliers and would be included in their carbon footprint. The government procurement strategy as mentioned above will ensure sustainability considerations are taken into account when procuring office accommodation.

7.3 Corporate waste

Personal computers and office furniture are items whose disposal is over and above the normal daily waste that is sent to landfill.

As with other goods and services, the new procurement rules will help reduce this effect by looking at the full life-cycle of a product when the tendering process is being undertaken. This could increase the number of suppliers who will rent or take back goods when they are surplus to future requirements of the agencies, and ensure these are appropriately recycled.

7.4 Commuting to work

This is considered to fall under the personal carbon footprint of the employee, as the agency has little control over where people choose to live and how they choose to travel to work. Therefore this is outside the scope of the Carbon Neutral Public Service programme.

Work will be undertaken to produce travel plans to help reduce this effect under a further scheme.

8 Base year selected (7.3.1 j)

This is the Ministry for the Environment's first report. The chosen base year calculated for this report is the year from 1 July 2006 to 30 June 2007.

9 Data collection quantification of methodologies (7.3.1 l and n)

Table 1 below details the sources of the relevant data and the emission factors which have been used. All the factors have been approved by the Ministry for the Environment. The amount of CO₂e has been calculated by multiplying the activity data sourced by the agency by the relevant emission factor. As this is the first year that the agency has produced these figures, there are no changes in methodology to report (7.3.1 k).

Emission or removal source	Data collection unit	Emission or removal factor	Factor source
Petrol regular	litre	0.0023154	1
Petrol premium	litre	0.0023666	1
Petrol average	litre	0.0023263	1
Purchased electricity	kWh	0.0002091	1
Transmission and distribution line losses for all purchased electricity	kWh	0.0000197	1
Domestic air travel	km	0.00018	3
International air travel	km	0.00011	3
Taxi travel	km	0.0002373	4
Rental cars	km	0.0002373	4
Business travel in employee-owned cars	km	0.0002373	4
Waste to landfill	tonne	1.259500534	5

9.1 References for emission factors

1. New Zealand Energy Greenhouse Gas Emissions 1990–2006 (Ministry of Economic Development, 2007).
2. CO₂ emission factor sourced from: New Zealand Energy Greenhouse Gas Emissions 1990–2006 (Ministry of Economic Development, 2007).
CH₄ and N₂O emission factors sourced from: Calculation Tool for Direct Emissions from Stationary Combustions Calculation worksheets, Non-CO₂ Emission Factors Worksheet (WBCSD/WRI GHG Protocol Initiative – available from the GHG Protocol website).
3. Mobile Combustion CO₂ Emissions Calculation Tool, Emissions based on distance Worksheet (WBCSD/WRI GHG Protocol Initiative – available from the GHG Protocol website).
4. New Zealand Energy Greenhouse Gas Emissions 1990–2006 (Ministry of Economic Development, 2007). Fuel economy rate sourced from Ministry of Transport (2007).
5. Emission factor methodology from Ministry for the Environment. Based on data from: New Zealand's Greenhouse Gas Inventory 1990–2005 (Ministry for the Environment, 2007).

10 Emission reductions and removals (7.3.1 g)

The Ministry for the Environment will have a management plan in place for managing and reducing emissions by early 2008 with the aim to be carbon neutral by 2012.

11 Uncertainties (7.3.1 o)

Emission scope	Emission source	Uncertainties
Scope 3	Domestic flights	It is assumed that records supplied by Atlantic and Pacific American Express are complete and accurate
Scope 3	Rental car travel	It is assumed that records supplied by Avis are complete and accurate
Scope 3	Taxi travel	It is assumed that records supplied by Taxi Charge are complete and accurate
Scope 3	Air travel	It is assumed that records supplied by Atlantic and Pacific American Express are complete and accurate
Scope 1	Fleet vehicle travel	It is assumed that records supplied by GSB Supply Corp are complete and accurate
Scope 2	Electricity usage	It is assumed that records supplied by Genesis Energy are complete and accurate
Scope 2	Electricity usage	Electricity use for the Ministry's Christchurch office has been extrapolated from 10 months' data over 12 months
Scope 2	Electricity usage	Electricity usage for Auckland and Christchurch shared office space is attributed to MfE based on FTE numbers
Scope 3	Waste to landfill	Annual waste audit figures have been extrapolated from a 5-day sample over a 250-day working year
Scope 3	Waste to landfill	It is assumed that records supplied by Adviser, Ministry for the Environment are complete and accurate

12 Verification of the Greenhouse Gas Inventory (7.3.1 q)

This GHG emissions inventory report has been verified by Det Norske Veritas auditors. A positive assurance report has been given over the assertions and quantifications included in this report.