

Emissions Inventory Report

Ministry of Economic Development

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For the period	1 July 2006 to 30 June 2007

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Emissions Inventory Summary

The following table documents the CO₂-2 emissions produced by the Ministry.

Type of emission	Tonnes CO ₂ -e*
Direct Scope 1 emissions	
Petrol use	81.25
Diesel use	50.84
LPG use	Not used
Natural gas in owned buildings and leased buildings where MED is the sole tenant	Not applicable
Coal use	Not used
Total Direct Scope 1 Emissions	132.09
Indirect Scope 2 Emissions	
All electricity purchased in owned and leased buildings where MED is the sole tenant	106.95
Total Indirect Scope 2 Emissions	106.95
Indirect Scope 3 Emissions	
Transmission and distribution line losses for all purchased electricity	59.80
Air travel	1,036.15
Business travel in Rental cars / taxis	51.84
Waste to landfill	16.27
All purchased electricity for lighting, utility/appliance power in leased space in buildings where MED is a joint tenant	413.36
All base electricity supplied by the landlord for common area lighting, lifts and air conditioning in buildings where MED is a joint tenant	114.41
Natural gas for base heating in leased buildings where MED is a joint tenant	106.76
Total Indirect Scope 3 Emissions	1,798.59
Total Emissions	2,037.63

The following table documents all Scope 1 emissions produced by the Ministry.

Scope 1	CO ₂	CH ₄	N ₂ O	HFCs	PF ₆	SF ₆	CO ₂ -e
Petrol regular	65.22	0.39	0.44	0	0	0	66.03
Petrol premium	15.19	0.09	0.10	0	0	0	15.22
Diesel	49.95	0.05	0.83	0	0	0	50.84
TOTAL	130.36	0.53	1.37	0	0	0	132.09

Introduction

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 as in the process of becoming carbon neutral by 2012.

2. Statement of intent

The Ministry of Economic Development 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 three key stages which are 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. The Ministry's functions and structure

The Ministry of Economic Development has a key role in meeting the Government's objective for sustainable economic, regional and industry development. Its aim is to lift the economic well being for all New Zealanders, while maintaining or enhancing our physical and social environment.

The Ministry has seven branches, each headed by a Deputy Secretary. The Ministry of Consumer Affairs and the Ministry of Tourism are semi-autonomous units within the wider Ministry. The seven Deputy Secretaries report to the Chief Executive. The General Manager of the Ministry of Tourism reports to the Deputy Secretary responsible for the Industry and Regional Development branch. The Director of the Government Urban and Economic Development Office reports to the Deputy Secretary responsible for the Economic Strategy branch.

Details of the branches are:

Industry and Regional Development branch, which has the principal responsibility for advancing the Government's economic, regional and industry development objectives. The Ministry of Tourism, which advises the Government on tourism issues, is part of this branch.

Business Services branch, which runs the Ministry's business and operational services, including the Companies Office and other business registries, the Radio Spectrum Management group, Energy Safety and the Crown Minerals group.

Competition, Trade and Investment branch, which provides policy advice on the intellectual property, trade facilitation and tariffs, financial sector, corporate and competition frameworks for business; and the administration of trade rules and remedies.

Energy and Communications branch, which provides policy advice on the regulatory environment for the telecommunications, energy, postal and broadcasting sectors, and on radio spectrum, natural resource and environmental issues.

Effective Markets branch, which incorporates the Ministry of Consumer Affairs, provides advice and programmes to ensure that markets work effectively for businesses and consumers; this includes consumer safety, rights and information.

Organisational Development and Support branch, which provides specialist advice on organisational development, legal, finance and facilities management, communications, risk management, information technology and knowledge management issues.

Economic Strategy branch, which supports MED, government and other departments to develop and implement strategy that improve New Zealand's long-term economic development.

Government Urban and Economic Development Office (GEUDO), which is a cross-government initiative to improve the focus on Auckland-related policy development. Four government agencies – Ministry of Economic Development, Ministry for the Environment, Department of Labour and Ministry of Transport – have established this shared policy office in Auckland.

As at 30 June 2007 the Ministry employed 723 staff in 12 regional offices which are located in Auckland, Hamilton, Palmerston North, Wellington, Christchurch and Dunedin.

4. Persons responsible

The Ministry's Chief Executive has overall responsibility for the carbon emissions neutrality programme, but the sponsorship of the programme, as well the Ministry's G³ programme has been assigned to the Deputy Secretary - Organisational Development and Support.

The attached inventory records have been approved by Group Manager - Performance, Governance and Assurance.

This report has been completed by the Manager - Facilities Management.

5. Organisational boundaries included for this report period

The report solely covers the core activities of the Ministry.

6. Emissions sources inclusions

Emission sources were identified with reference to the methodology described in the GHG Protocol and the ISO 14064-1 (2006) standard. Identification of emission 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 Ministry.
- Indirect emissions (Scope 2): emissions from the generation of purchased electricity consumed by the Ministry.
- Indirect emissions (Scope 3): emissions that occur as a consequence of the activities of the Ministry, but occur from sources not owned or controlled by the agency. Inclusions of these are determined on case by case basis, and relate to the Ministry's aims of the programme.

The following table documents the emission sources that are included in the Ministry's carbon footprint.

Petrol for vehicles	Scope 1
Diesel for vehicles	Scope 1
All purchased electricity in owned and leased buildings where MED is the sole tenant	Scope 2
Domestic air travel	Scope 3
International air travel	Scope 3
Taxi travel	Scope 3
Business travel in rental cars	Scope 3
Waste to landfill	Scope 3
All purchased electricity for lighting, utility/appliance power inn leased space in buildings where MED is a joint tenant	Scope 3
All base electricity supplied by the landlord for common area lighting, lifts and air conditioning in buildings where MED is a joint tenant	Scope 3
Transmission and distribution line losses for all purchased electricity	Scope 3
Natural gas for base building heating in leased buildings where MED is a joint tenant	Scope 3

7. Emission sources not included in the Ministry's carbon footprint

The following table documents the emission sources that are not included in the Ministry's carbon footprint

LPG for vehicles as the Ministry has no such vehicles	Scope 3
Petrol or diesel for boats as the Ministry has no boats	Scope 3
Petrol or diesel for equipment as the Ministry has no such equipment	Scope 3
Natural gas in either owned or leased buildings where the Ministry is sole tenant. Electricity is sole source of energy used in such sites.	Scope 3
Business travel in employees owned cars. Staff are required to use Ministry owned vehicles or rental vehicle if vehicle transport is required to undertake Ministry business	Scope 3
Biomass - This is not used in the Ministry's operations	Scope 3
Corporate waste produced by external providers of office consumables to the Ministry is not included in this report as the Ministry has no control over this.	Scope 3
Corporate waste such as disposal of furniture and PCs are not included in this report. The disposal of this waste is done through external recycling sites	Scope 3

Electricity consumed in external data centres where facilities and equipment (such as servers) are shared with other organisations	Scope 3
Staff commuting to work in personal cars. This is considered to fall outside the Ministry's carbon footprint as the Ministry has no control where people live. Work may be undertaken to produce carbon travel plans to reduce the effect under a further scheme. For further information see the document 'Carbon Neutral Public Service Emission Inventory Preparation Guidance'	Scope 3

8. Base year selected

This is the Ministry's first report. The chosen base year calculated for this report is the year from 1 July 06 to 30 June 07.

9. Data collection quantification of methodologies

The table 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 Ministry by the relevant emission factor. As this is the first year that the Ministry has produced these figures there have not been any changes in methodology to report.

Emission or Removal Source	Data Collection Unit	Emissions or Removal Factor	Factor Source
International	5,282,437 kms	0.00011	Mobile Combustion CO ₂ Emissions Calculation Tool
Domestic travel	2,528,234 kms	0.00018	Mobile Combustion CO ₂ Emissions Calculation Tool
Petrol - regular	28,517 litres	0.0023154	NZ Energy Greenhouse Gas Emissions 1990-2006 (MED 2007)
Petrol - premium	6,435 litres	0.0023666	NZ Energy Greenhouse Gas Emissions 1990-2006 (MED 2007)
Diesel	19,175 litres	0.0026512	NZ Energy Greenhouse Gas Emissions 1990-2006 (MED 2007)
Taxi travel	163,416 kms	0.0002373	NZ Energy Greenhouse Gas Emissions 1990-2006 (MED 2007)
Rental car travel	55,039 kms	0.0002373	NZ Energy Greenhouse Gas Emissions 1990-2006 (MED 2007)
Waste	18.07640845 tonnes	0.5330451	NZ Energy Greenhouse Gas Emissions 1990-2005
Transmission and distribution line losses factor for all electricity	3,035,513 kWhs	0.0000197	NZ Energy Greenhouse Gas Emissions 1990-2006 (MED 2007)

Electricity for sole tenanted space	511,496 kWhs	0.0002091	NZ Energy Greenhouse Gas Emissions 1990-2006 (MED 2007)
Electricity for co-tenanted space	1,976,848 kWhs	0.0002091	NZ Energy Greenhouse Gas Emissions 1990-2006 (MED 2007)
Electricity for base building equipment and common area lighting	547,169 kWhs	0.0002091	NZ Energy Greenhouse Gas Emissions 1990-2006 (MED 2007)
Natural gas for base building heating in leased buildings which are multi-tenanted	562,792 kWhs	0.0001897	NZ Energy Greenhouse Gas Emissions 1990-2006 (MED 2007)

10. Emission reductions and removals

The following environmental results were obtained during 2006/07:

- implementation of recycling schemes in all of the Ministry's premises across New Zealand;
- 14 percent reduction in domestic travel;
- 17 percent reduction in international air travel (including trans-Tasman);
- 10 percent reduction in vehicle travel;
- 11 percent reduction in energy consumption; and
- establishment of a sustainability section on the Ministry's intranet with the aim of:
 - keeping staff informed of actions to improve the Ministry's sustainability programme; and
 - allowing staff to follow progress and celebrate our successes.

The above results were not audited by an external agency.

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

11. Uncertainties

Details of the uncertainties on the accuracy of the GHG emissions in this report are documented in the table overleaf.

Emission Scope	Emission Source	Uncertainties
Scope 1	Air Travel	It is assumed that records supplied by FCm Travel Ltd are complete and accurate.
Scope 3	Taxi travel	It is assumed that records supplied by Taxicharge Ltd are complete and accurate.
Scope 3	Electricity	It is assumed that records supplied by building owners are complete and accurate for electricity used in lighting common areas and operating core equipment such as air conditioning and lifts. In the case of Manukau and IPONZ office we have had to assess base power usage for common areas as detailed usage records cannot be obtained from the landlords.

12. Verification of the GHG Inventory

This GHG emissions inventory report has been verified by DNV an independent auditor. A positive assurance report is expected to be given over the assertions and quantifications include in this report.

Ministry of Economic Development

Emissions from electricity (Scope 2 and 3)
For the year ending 30 June 2007

Category	Unit	Quantity	Emission Factor	Tonnes of CO ₂ e	Reference
Electricity usage (02.01)					
Where the agency is the sole tenant	kWh	511,496	0.0002091	106.9538136	
Electricity purchased for lighting and utility / appliance power in leased buildings where the agency is not the sole tenant	kWh	1,976,848	0.0002091	413.3589168	
Electricity purchased for base building power in leased buildings where the agency is not the sole tenant	kWh	547,169	0.0002091	114.4130379	
Total electricity usage	kWh	3,035,513			
Transmission and distribution line losses for all purchased electricity	kWh	3,035,513	0.0000197	59.7996061	
Totals for sources		9,106,539		694.5253744	

Data sources – Ministry's and landlords' electricity statements

Emission factors obtained from

New Zealand energy Greenhouse Gas Emissions 1990-2006 (Ministry of Economic Development, 2007)

Uncertainties over data (Table 11)

Landlords' electricity records.

Lack of Landlords' records for base power in Manukau and IPONZ offices has resulted in us estimating usage.

Checked for calculation errors

Data sources not included (Table 7)

The Ministry has outsourced IT services to a third party. This power is not included in table 7 above.

Electricity used by external providers of office consumables to MED is not included in table 7 above.

Ministry of Economic Development

Emissions from gas (Scope 1 and 3)
For the year ending 30 June 2007

Category	Unit	Quantity	Emission Factor	Tonnes of CO2	Emission Factor	Tonnes of CH4 (CO2e)	Emission Factor	Tonnes of N2O (CO2e)	Emission Factor	Tonnes of CO2e	Reference
Gas usage (02.02)											
Gas purchased in owned buildings and in leased buildings where the agency is the sole tenant	kWh	0	0.0001873	0	0.0000008165	0	0.00000231	0	0.0001897	0	
Gas purchased for base building heating in leased buildings where the agency is not the sole tenant	kWh	562,792	0.0001873	105.4109416	0.0000008166	0.45957595	0.00000231	1.30004952	0.0001897	106.7616424	
Totals for sources				105.4109416		0.045957595		1.30004952		106.7616424	

Data sources

Emission factors obtained from

New Zealand energy Greenhouse Gas Emissions 1990-2006 (Ministry of Economic Development, 2007)

Uncertainties over data (Table 11)

Checked for calculation errors

Data sources not included (Table 7)

Ministry of Economic Development

Emissions from Company Owned and Leased Vehicles (Scope 1)
For the year ending 30 June 2007

Category	Unit	Quantity	Emission Factor	Tonnes of CO2	Emission Factor	Tonnes of CH4 (CO2e)	Emission Factor	Tonnes of N2O (CO2e)	Emission Factor	Tonnes of CO2e	Reference
MED Owned Vehicles (01.01)											
Petrol – Average (see guidelines in Appendix 4)	Litres		0.002298	0	0.00001361	0	0.0000155	0	0.0023263	0	
Petrol – Regular	Litres	28,517	0.002287	65.218379	0.00001358	0.38726086	0.00001547	0.44115799	0.0023154	66.0282618	
Petrol – Premium	Litres	6,435	0.002361	15.193035	0.00001371	0.08822385	0.00001562	0.1005147	0.0023666	15.229071	
Diesel	Litres	19,175	0.002605	49.950875	0.000003021	0.057927675	0.00004354	0.8348795	0.0026512	50.83676	
LPT	Litres		0.001585	0	0.00001586	0	0.000004683	0	0.0016051	0	
Totals for sources		54,127.00		130.362289		0.533412385		1.37655219		132.0940928	

Data sources - FleetCard

Emission factors obtained from

New Zealand energy Greenhouse Gas Emissions 1990-2006 (Ministry of Economic Development, 2007)

Uncertainties over data (Table 11)

It is assumed that records supplied by FleetCard are complete and accurate.

Checked for calculation errors

Data sources not included (Table 7)

Ministry of Economic Development

Emissions from Air Travel (Scope 3)
For the year ending 30 June 2007

Category	Unit	Quantity	Emission Factor	Tonnes of CO2	Emission Factor	Tonnes of CO2e	Reference
Air travel (01.04)							
Domestic	Kms	2,528,234	0.00018	455.08212	0.00018	455.08212	
International	Kms	5,282,437	0.00011	581.06807	0.00011	581.06807	
Totals for sources		7,810,671.00		1036.15019		1036.15019	

Data sources - FCm Travel

Emission factors obtained from

Mobile Combustion CO2 emissions Calculation Tool, Emissions based on distance Worksheet (WBCSD/WRI GHG Protocol Initiative – available from the GHG Protocol website)

Uncertainties over data (Table 11)

It is assumed that records supplied FCm Travel are complete and accurate.

Checked for calculation errors

Data sources not included (Table 7)

Staff commuting to work in personal cars.

Ministry of Economic Development

Emissions from Travel (Scope 3)
For the year ending 30 June 2007

Category	Unit	Quantity	Emission Factor	Tonnes of CO2e	Reference
Other Travel (01.03)					
Taxi travel	Kms	163,416	0.0002373	38.7786168	
Business travel in rental cars	Kms	55,039	0.0002373	13.0607547	
Business travel in employee owned cards	Kms		0.0002373	0	
Totals for sources		218,455		51.8393715	

Data sources -

Emission factors obtained from

New Zealand Energy Greenhouse Gs emissions 1990-2006 (Ministry of Economic Development, 2007). Fuel economy rate sourced from Ministry of Transport (2007).

Uncertainties over data (Table 11)

It assumed that records supplied by FCm Travel Ltd are complete and accurate in respect of usage of rental cars.

It is assumed that records supplied by Taxicard Ltd are complete and accurate in respect of usage of taxis.

Checked for calculation errors

Data sources not included (Table 7)

Ministry of Economic Development

Emissions from Landfill (Scope 3)
For the year ending 30 June 2007

Category	Unit	Quantity	Emission Factor	Tonnes of CO2	Reference
Landfill Waste					
Landfill	Tonnes	18.07640845	0.9	16.26876761	
Totals for sources				16.26876761	

Data sources - Waste audit report and FTE report

Emission factors obtained from

Ministry for the Environment. Based on data from New Zealand's Greenhouse Gas Inventory 1990-2005.

Uncertainties over data (Table 11)

Checked for calculation errors

Data sources not included (Table 7)

Sample	Location	Number of audits	Weight (tonnes) collected in First audit	FTE at time of first audit	Number of days covered	Weight (kgs) collected in second audit	FTE at time of second audit	Number of days covered	Average Waste / FTE / Day	Annual Average FTE	Total Waste Kgs
1	BSB Auckland	1	0.02363	82	2				0.000144085	81	2.917728659
2	MCA Manukau	1	0.00062	2	5				0.000062	2	0.031
3	Maps Panmure	1	0.00093	5	5				0.0000372	5	0.0465
4	BSB Hamilton	1	0.00658	15	3				0.000146222	14	0.511777778
5	BSB Napier	1	0.00136	8	2				0.000085	8	0.17
6	BSB P Noth	1	0.0015	1	2				0.00075	1	0.1875
7	33 Bowen St Wgtn	2	0.0881	452	2				0.000194912	455	22.17118363
8	IPONZ Wgtn	1	0.02136	66	2				0.000161818	70	2.831818182
9	BSB Seaview	1	0.00442	5	2				0.000442	5	0.5525
10	Maps Petone	1	0.00064	3	2				0.000106667	3	0.08
11	BSB Christchurch	1	0.02126	69	2				0.000154058	72	2.773043478
12	BSB Dunedin	1	0.0001	2	2				0.000025	2	0.0125
Total		13	0.1705	710	31				0.000100704	718	18.07640845