

Emission Inventory Report

Emissions Inventory Report

New Zealand Customs Service

Prepared by

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In accordance with Part 7.3.1 of ISO 14064 (7.3.1 p)

Date

16 November 2007

For the period

1 July 2006 to 30 June 2007 (7.3.1 c)

User notes.

References which are shown in brackets e.g. (7.3.1 c) refer to the relevant section of the ISO Standard 14064. This is for reference only and no further action is required by the agency.

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Emissions Inventory Summary (7.3.1 e)

Type of emission	Tonnes CO ₂ -e*
Direct (Scope 1) emissions	
Petrol (Regular) use – Vehicles	295.438186400
Petrol (Premium) use–Vehicles	28.310712830
Diesel use – Vehicles	205.214704400
LPG use – Vehicles	8.585840410
Petrol (Regular) use – Boats	6.528663918
Diesel use – Boats	110.701677900
Petrol (Regular) use – Equipment	0.179142498
Diesel use – Equipment	11.284620700
LPG use – Equipment	0.052824717
Total Direct (Scope 1) Emissions	666.296373773
Indirect (Scope 2) Emissions	
All purchased electricity in owned buildings and leased buildings where Customs is the sole tenant	158.2625625
Purchased electricity for lighting and utility/appliance power in leased space where Customs is not the sole tenant	366.4452408
Total Indirect (Scope 2) Emissions	524.7078033
Indirect (Scope 3) Emissions	
Electricity purchased for base building power in leased buildings where Customs is not the sole tenant	80.39518620
Transmission and distribution line losses for all purchased electricity	57.00874650
Gas purchased for base building heating in leased buildings where the Customs is not the sole tenant	138.43995650
Air travel	753.35837080
Business travel in Rental cars / Taxis / Employee owned cars	133.13473740
Waste to landfill	34.02992878
Aircraft hire & Military Tasking(Aerial surveillance)	1464.26266500
Total Indirect (Scope 3) Emissions	2660.62959118
Total Emissions	3,851.63370545

(7.3.1 e)

Area	*CO ₂	*CH ₄	*N ₂ O	*HFCs	*PFC's	*SF ₆	Total CO ₂ e
Scope 1							
Petrol (Regular) use – Vehicles	291.8144305	1.732767803	1.973926209				295.438186400
Petrol (Premium) use - Vehicles	28.24372221	0.164007383	0.186855968				28.310712830
Diesel use – Vehicles	201.6386183	0.233838874	3.370190188				205.214704400
LPG use – Vehicles	8.47832350	0.084836726	0.025049835				8.585840410
Petrol (Regular) use - Boats	6.44858529	0.038291119	0.043620295				6.528663918
Diesel use - Boats	108.77258260	0.126142792	1.818026197				110.701677900
Petrol (Regular) - use – Equipment	0.17694519	0.001050685	0.001196914				0.179142498
Diesel use – Equipment	11.0879741	0.012858645	0.185324527				11.2846207
LPG use – Equipment	0.0526539	0.000019424	0.000155584				0.052824717
Total	656.71383559	2.393813451	7.604345717				666.296373773

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 as in the process of being on the path to carbon neutrality by 2012.

2. Statement of intent

The New Zealand Customs Service is one of the 28 stage two core public service agencies that will be on the path to 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 emissions¹

3. Organisation description (7.3.1 a)

The New Zealand Customs Service (Customs) is the government agency with the job of protecting the community from potential risks arising from international trade and travel, while facilitating the legitimate movement of people and goods across the border.

We do this by:

- intercepting contraband (such as illegal drugs)
- checking travellers and their baggage, cargo and mail
- assessing and collecting Customs duties, excise taxes and Goods and Services Tax (GST) on imports
- protecting New Zealand businesses against illegal trade
- enforcing import and export restrictions and prohibitions
- collecting accurate import and export data.

As New Zealand's gatekeepers, we use intelligence and risk assessment to target our physical checks of containers, vessels or travellers. We also conduct investigations and audits, and prosecute offenders.

Customs works closely with the other border agencies, the Ministry of Agriculture and Forestry Quarantine Service and the Immigration Service.

Customs has over 1200 staff (1178 FTE's as at 30 June 2007) around New Zealand, covering the main international airports and seaports. Operating from 34 separate sites, there are 15 locations open to the public with staff also based in Hamilton, Palmerston North, Queenstown and Timaru. Customs also has representatives in Brussels, Beijing, Bangkok, Washington and Sydney.

4. Persons responsible (7.3.1 b)

The Comptroller of Customs has overall responsibility for the emissions inventory. The collation of statistics and compilation of the inventory has been undertaken by Shaun Fleet, Senior Business Analyst, Corporate Support in consultation with and oversight of Alan Crawford Manager, Corporate Support. John Kyne, Group Manager Finance and Corporate Support has recommended this inventory to the Comptroller of Customs for his approval.

¹ The term "unavoidable emissions" should be understood to include a cost-benefit analysis of the reduction measures.

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

The New Zealand Customs Service 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, 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 GHG inventory include core agency activities only. There are 44 principal legislation used by the New Zealand Customs Service including the Customs and Excise Act 1996 and 21 other relevant border protection Acts.

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

Actual emissions

Emission source	Scope of Emission
Petrol for vehicles	Scope 1
Diesel for vehicles	Scope 1
LPG for vehicles	Scope 1
Petrol and Diesel for boats	Scope 1
Petrol and Diesel for equipment	Scope 1
LPG for equipment	Scope 1
All purchased electricity in owned buildings and leased buildings where Customs is the sole tenant	Scope 2
Purchased electricity for lighting and utility/appliance power in leased space where Customs is not the sole tenant	Scope 2
Transmission and distribution line losses for all purchased electricity	Scope 3
Purchased electricity for base building power in leased buildings where Customs is not the sole tenant	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
Natural gas for base building heating in leased buildings which are multi-tenanted	Scope 3
Aircraft hire & Military Tasking (Aerial surveillance)	Scope 3

'No biomass is used in [New Zealand Customs Service](#) operations and therefore no emissions from the combustion of biomass are included. (7.3.1 f)

7. Emission sources exclusions (7.3.1 h)

Emission Source	Emission Level Scope
Staff commuting to work in personal cars ¹	Indirect (Scope 3)
Passenger Processing activities ²	Indirect (Scope 3)

Justification:

¹ This is considered to fall under the personal carbon foot print of the employee as Customs has little control over where people choose to live; therefore this is outside the Scope. Work will be undertaken to produce travel plans to help reduce this effect under a further scheme.

² These activities relate to the processing of passengers and crew provided at arrival and departure areas in tandem with other agencies while the Carrier makes use of the Airport Authority's facilities to provide the service to the traveller. Guidance has been provided to include these emissions however Customs portion of the emission generation can not be measured in a cost effective or accurate method.

For further information see the document 'Carbon Neutral Public Service Emission Inventory Preparation Guidance'

8. Base year selected (7.3.1 j)

This is New Zealand Customs Service'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)

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 Customs by the relevant emission factor. As this is the first year that the Customs has produced these figures there have not been any changes in methodology to report. (7.3.1 k)

References for emission factors

The following references should be used in the emissions inventory report to identify where the factors were sourced.

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).

Emission or Removal Source	Data Collection Unit	Emission or Removal Factor	Factor Source
Petrol (Regular) use – Vehicles	Litres	0.0023154	1
Petrol (Premium) use–Vehicles	Litres	0.0023666	1
Diesel use – Vehicles	Litres	0.0026512	1
LPG use – Vehicles	Litres	0.0016051	1
Petrol (Regular) use – Boats	Litres	0.002315	1
Diesel use – Boats	Litres	0.002651	1
Petrol (Regular) use – Equipment	Litres	0.0023154	1
Diesel use – Equipment	Litres	0.0026512	1
LPG use – Equipment	Kg	0.0029997	1
All purchased electricity in owned buildings and leased buildings where Customs is the sole tenant	kWh	0.0002091	1
Purchased electricity for lighting and utility/appliance power in leased space where Customs is not the sole tenant	kWh	0.0002091	1
Transmission and distribution line losses for all purchased electricity	kWh	0.0000197	1
Natural gas for base building heating in leased buildings which are multi-tenanted	kWh	0.0001897	1
Taxi travel	Km	0.0002373	4
Business travel in rental cars	Km	0.0002373	4
Business travel in employee owned cars	Km	0.0002373	4
Domestic Air Travel	Km	0.00018	3
International Air Travel	Km	0.00011	3
Aircraft Fuel - Avgas	Litres	0.0022226	1
Aircraft Fuel - Jet Fuel	Litres	0.0025449	1
Electricity purchased for base building power in leased buildings where Customs is not the sole tenant	kWh	0.00019	1
Waste to Landfill – Un-audited sites	Tonnes	0.63661815	5
Waste to Landfill – Audited Site, Wellington	Tonnes	0.76356	5
Waste to Landfill – Audited Site, Auckland	Tonnes	0.41728554	5
Waste to Landfill – Audited Site, Christchurch	Tonnes	0.72900891	5

10. Emission reductions and removals (7.3.1 g)

New Zealand Customs Service will have a management plan in place for managing and reducing emissions by early 2008 with the aim to be on the path to carbon neutrality by 2012.

11. Uncertainties (7.3.1 o)

There needs to be a description of the impact of uncertainties on the accuracy of the GHG emissions and removals data.

Emission Scope	Emission Source	Uncertainties
Scope 2	Electricity	<p>Electricity has not been measured for 1.34% of total units for leased buildings. The data was not available. Accordingly an assessment using and extrapolation of similar space, across the Service, was used.</p> <p>Data for overseas posts could not be obtained for 06/07, therefore emissions from overseas posts have been estimated by extrapolating on an FTE basis. The scale up factor of 1.005634 (1+ 6.6/1171.4) for the 6.6 FTE's has been applied to electricity purchased for buildings leased where the Service is not the sole Tenant.</p>
Scope 3	Electricity	<p>12.69% of the total occupied space could not be measured for the base building power because the data is not available. The type of facilities and occupancy arrangements preclude any meaningful assessment method. The impact is considered minimal.</p> <p>Assessed values equating to 5.90% of total electricity usage has been applied which in turn impacts on the transmission and distribution line loss calculations. Assessed values have been made using professionally provided averages for similar sites. The impact is positive providing greater accuracy on the overall total.</p> <p>Data for overseas posts could not be obtained for 06/07, therefore emissions from overseas posts have been estimated by extrapolating on an FTE basis. The scale up factor of 1.005634 (1+ 6.6/1171.4) for the 6.6 FTE's has been applied to electricity purchased for base building power for buildings leased where Customs is not the sole Tenant. The scale up factor applied to Scope 2 electricity and Scope 3 affects the transmission and distribution line losses result.</p>
Scope 3	Waste to Landfill	<p>Un-audited sites volume has been extrapolated from the waste audits carried out. It is considered this extrapolation method can be relied given the similarity of results across the actual audits. This figure includes 6.6 FTE's located at Overseas Posts. Data for overseas posts could not be obtained for 06/07, therefore emissions from overseas posts have been estimated by extrapolating on an FTE basis assuming their waste is of a similar nature to NZ operations.</p>
Scope 3	Business travel in employee owned cars	<p>Business Travel in employee owned cars is made up of two components. Claims for Km's travelled on an allowance and Km's paid for as travel assistance. Travel assistance claims for distances 16 Km and over is the maximum claimable regardless of distance travelled. An amount of 18 Km's has been applied as an assessment, for each claim of this group, therefore generating the uncertainty. The impact of the 18Km assessment is that 48.6% of total 'Other Travel' could be under stated. The amount assessed equates to 64.690 tCO₂-e (2.511% of total Emissions).</p>
Scope 3	Air Travel; Taxi Travel; Business travel in rental	<p>Data for overseas posts could not be obtained for 06/07, therefore emissions from overseas posts have been estimated by extrapolating on an FTE basis. A scale up factor</p>

	cars; Petrol for Vehicles; Diesel for Vehicles	of 1.005634 (1+ 6.6/1171.4) for the 6.6 FTE's has been applied to all Emission Sources listed here and considered the emission sources relevant from the New Zealand operations to the activities of overseas posts.
Scope 3	Aircraft Hire & Military Tasking (Aerial Surveillance)	The consumption rate used to calculate the emissions, by aircraft, has been based on average flying conditions in cruise power. The impact of these averages, on the overall total, is considered insignificant.

12. Verification of the GHG Inventory (7.3.1 q)

This inventory has not been verified.