



Gas and particulate matter emissions 2001–2013

Metadata

File Identifier

cd9a30ad-9a71-c698-fc61-c5f3f574896b

Language

eng

Character Set

Character Set Code

utf8

Hierarchy Level

Scope Code

dataset

Hierarchy Level Name

dataset

Contact

Responsible Party

Organisation Name

Environmental Reporting, Ministry for the Environment and Statistics New Zealand

Position Name

Analyst

Contact Info

Contact

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23 Kate Sheppard Place, PO Box 10362

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Environmental.Reporting@mfe.govt.nz

Role

Role Code

distributor

Date Stamp

Date

2016-01-28

Metadata Standard Name

ANZLIC Metadata Profile: An Australian/New Zealand Profile of AS/NZS ISO 19115:2005, Geographic information - Metadata

Metadata Standard Version

1.1

Reference System Info**Reference System****Reference System Identifier****Identifier****Code**

2193

Identification Info**Data Identification****Citation****Citation****Title**

Gas and particulate matter emissions 2001-2013

Date**Abstract**

"This dataset shows estimated annual emissions for different pollutants (tonnes per square kilometre): Particulate matter 10 micrometres or less in diameter (PM10); Particulate matter 2.5 micrometres or less in diameter (PM2.5); Sulphur dioxide; Sulphur Oxides (SOx); Carbon Monoxide (CO), and; Nitrogen Oxides (NOx). Measures of: - PM10 and PM2.5 are from home heating - SOx are from Industrial sources - CO and NOx are from road motor vehicles. Data for PM10 (PM10_t_km_yr_<year>) and PM2.5 (PM25_t_km_yr_<year>) are provided for 2006 and 2013, including percent difference (PM10_PC_difference) and (PM25_PC_difference). Data for CO (MV_CO_t_km_yr_<year>) and NOx (MV_NOx_t_km_yr_<year>) are provided for 2001 and 2013, include percent difference (MV_CO_PC_diff_01_13) and NOx (MV_NOx_PC_diff_01_13). Data for SOx is for 2013 only (I_SOx_t_km_yr_2013). Data is broken down by territorial authority area. This dataset relates to various Environmental measures on the Environmental Indicators, Te taiao Aotearoa website: home heating; road motor vehicle emissions, and industrial emissions. Geometry: Polygons Units: t/km/yr"

Status**Progress Code**

completed

Point Of Contact**Responsible Party****Organisation Name**

Environmental Reporting, Ministry for the Environment and Statistics New Zealand

Position Name

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Role

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distributor

Resource Maintenance

Maintenance Information

Maintenance And Update Frequency

Maintenance Frequency Code

irregular

Resource Format

Format

Name

*.xml

Version

Unknown

Descriptive Keywords

Keywords

Keyword

New Zealand

Type

Keyword Type Code

theme

Thesaurus Name

Citation

Title

ANZLIC Jurisdictions

Date

Edition

Version 2.1

Edition Date

Date

2008-10-29

Identifier

Identifier

Code

<http://asdd.ga.gov.au/asdd/profileinfo/anzlic-jurisdic.xml#anzlic-jurisdic>

Cited Responsible Party

Responsible Party

Organisation Name

ANZLIC the Spatial Information Council

Role
Role Code
custodian

Descriptive Keywords

Keywords

Keyword

POLLUTION-Air

Type

Keyword Type Code

theme

Thesaurus Name

Citation

Title

ANZLIC Search Words

Date

Edition

Version 2.1

Edition Date

Date

2008-05-16

Identifier

Identifier

Code

<http://asdd.ga.gov.au/asdd/profileinfo/anzlic-theme.xml#anzlic-theme>

Cited Responsible Party

Responsible Party

Organisation Name

ANZLIC the Spatial Information Council

Role

Role Code

custodian

Resource Constraints

Legal Constraints

Use Limitation

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Language

eng

Character Set

Character Set Code

utf8

Topic Category Code

environment

Extent

EX _ Extent

Geographic Element

EX _ Geographic Description

Identifier

Authority

Citation

Title

ANZMet Lite Country codelist

Date

Edition

Version 1.0

Edition Date

Date

2009-03-31

Identifier

Identifier

Code

<http://asdd.ga.gov.au/asdd/profileinfo/anzlic-country.xml#Country>

Cited Responsible Party

Responsible Party

Organisation Name

ANZLIC the Spatial Information Council

Role

Role Code

custodian

Code

nzl

Extent

EX _ Extent

Geographic Element

EX _ Geographic Bounding Box

166.262049968-175.90572558-47.2230477827-34.1295645914

Distribution Info

Distribution

Transfer Options

Digital Transfer Options

On Line

Online Resource

Linkage

URL

<https://data.mfe.govt.nz/layer/52666-gas-and-particulate-matter-emissions-20012013/>

Data Quality Info

DQ _ Data Quality

Scope

DQ _ Scope

Level

Scope Code

dataset

Level Description

Scope Description

Other

dataset

Lineage

LI _ Lineage

Statement

Source: Regional councils of Northland, Bay of Plenty, Waikato, Hawke's Bay, Manawatu-Wanganui, Wellington, Canterbury, West Coast, Otago, Southland; district councils of Marlborough and Tasman; Nelson City Council; Auckland Council Method: "Home heating emissions: Home heating emissions were estimated using the 2006 and 2013 household census responses for wood and coal use combined with survey data on average fuel use and emission factors. Information regarding the distribution of burning appliances between open fires, older burners and low emission wood burners was used to determine the appropriate emission factors. The 2013 survey design focused on areas with a lack of existing information. The areas were grouped into seven areas with climate zone being used as the basis for selection of areas. Information from regional council and unitary authority emission inventories carried out between 2010 and 2014 was also used. The method used to calculate emissions is based on international best practice for emissions inventories. Key limitations include: - a lack of data for average coal consumption in areas outside of Invercargill, Gore and Reefton. - uncertainty around the proportion of NES-compliant wood burners installed in rural areas on properties greater than 2 hectares. - Assumptions made for the 2006 estimates to account for the limited available data, resulting in higher uncertainty estimates for 2006 than 2013. The key assumptions apply to: - fuel consumption, it is assumed that it is the same in 2006 and 2013 - appliances used, average replacement rates are used for most areas to determine the distribution of old and low emission burners. Road motor vehicle emissions: We estimate road motor vehicle emissions using the Vehicle Exhaust Prediction Model (VEPM) developed by the New Zealand Transport Agency and Auckland Council. The model considers kilometres travelled for different vehicle types, the estimated emission factor for each vehicle type, and the corresponding average vehicle travel speed. The emissions estimates include vehicle exhaust and brake and tyre wear. This model is based on internationally recommended approaches, uses internationally recognised emission factors, and is validated with road testing results. However, limited validation of the model outputs for heavy diesel vehicles exists. Modelling assumptions and parameters are reviewed periodically to ensure the model best reflects the emissions from on-road vehicles at a given point in time. Any changes to the model are peer-reviewed internationally. The modelling assumes that the vehicle fleet composition is the same throughout New Zealand. The VEPM provides best estimates and generally corresponds well to short-term studies measuring vehicle emissions at selected road sites. However, while the VEPM shows a decrease in NOx (the collective term for nitrogen dioxide (NO₂) and nitric oxide (NO)) emissions, some

monitoring shows no corresponding decrease in NO2. Possible reasons for this include: - limitations in the model - a result of the total NOx emissions decreasing while the NO2 component increases - this occurs in some newer vehicles, particularly diesels, which have a much greater proportion of nitrogen dioxide than petrol vehicles emissions from real-world situations (where vehicles are driven in a variety of conditions) are often much higher than those found in emissions approval tests. Industrial emissions: Estimates of industrial emissions focus on industrial activities that use coal and wood for energy sources. Industrial activities were identified through the Energy Efficiency and Conservation Authority databases (2014) and the 2008 industrial SO2 emission inventory. Supplementary information from local emission inventories (compiled after 2009) were also used. We estimated emissions based on fuel consumption and boiler type, if known. The estimates include little information on industrial activities that use gas- and oil-combustion sources, produce process emissions (eg milk driers), or involve abrasive and mechanical processes (eg grinding materials). We excluded some small-scale coal and wood boilers (eg school boilers), except where included in local emission inventories. Estimating emissions based on fuel consumption and boiler type, does not take into consideration whether control technology was fitted to boiler systems. This could result in an overestimate of particulate emissions. Other limitations to data and analysis are detailed in : Wilton, E., Bluett, J., and Chilton, R. (2015). Home heating emission inventory and other sources evaluation report. Environet Ltd and Golder Associates. Further information can be found in: National Institute of Water and Atmospheric Research Ltd (2015). Uncertainty estimates for the national PM10 indicator. Including an update of vehicle emissions estimates to include 2013. Wellington: Ministry for the Environment. Environet and Golders Associates (2015). Home heating emission inventory and other sources evaluation. Wellington: Ministry for the Environment. Available from the Ministry for the Environment dataservice (<https://data.mfe.govt.nz/>) at <https://data.mfe.govt.nz/x/a5FAw6>. "

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