

Air Emissions in My Community web tool: Emission units information

The emissions data in the Air Emissions In My Community web tool may be displayed in one of two units:

- tonnes per year
- tonnes per square kilometre per year.

Tonnes per year

The tonnes per year unit is self explanatory and is simply the total mass of the substance emitted per calendar year. This unit is displayed as t/yr in the web tool charts.

Tonnes per square kilometre per year

This unit divides the tonnes of emissions by the square kilometres (km²) of land area for the geographical area selected (e.g. local government area (LGA), postcode). This unit is also termed emissions intensity and allows the emissions from two geographical areas of significantly different sizes to be compared. The emission intensity is a unit that is likely to more closely correlate to average concentrations of a substance in the ambient air across the selected geographical area than the simple total emissions in tonnes. For example, if 1,000 tonnes of a substance is emitted over a land area of 1,000 km², and the same amount is emitted over an area of 50 km², it is intuitive that on average, the ambient air concentrations in the smaller area are likely to be higher.

This unit is displayed as t/km²/year in the web tool charts.

SI prefixes and scientific notation

When the quantity of the emission for the geographical area selected becomes very large, or very small, the units will be displayed on the web tool charts using the international system of units (SI) metric prefixes as follows:

- kt/yr – this is kilotonnes per year. 1 kt = 1,000 (one thousand) tonnes. The value may be displayed as 500k in the web tool charts, meaning 500,000 tonnes (as in Figure 1).
 - Mt/yr – this is megatonnes per year. 1 Mt = 1,000,000 (1 million) tonnes. The value may be displayed as 1M in the web tool charts, meaning 1,000,000 (1 million) tonnes (as in Figure 1).
 - scientific notation – this is used when the total emissions are less than 1 tonne. The notation is displayed in the web tool charts with the general form 0E-00. The E-00 means ten to the power of -00, or 10⁻⁰⁰. For instance in Figure 2, 1E-05 means 1 x 10⁻⁵ (1 times 10⁻⁵) or 1/100,000 (one hundred thousandth). Similarly 1E-03 would mean 1 thousandth (1/1,000) and 1E-06 would mean 1 millionth (1/1,000,000).
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Human vs. Natural Emissions (2008)

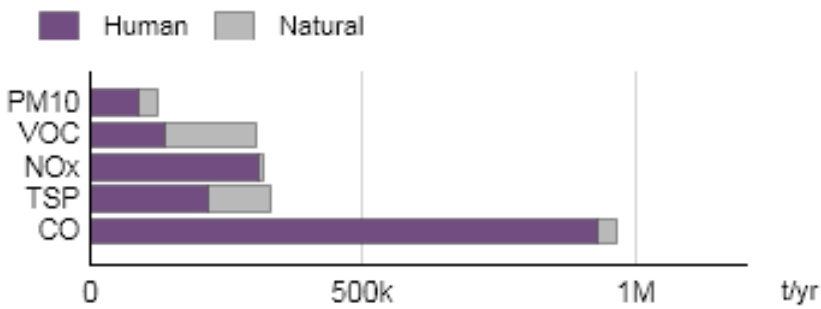


Figure 1 Web tool screen shot showing SI kilo (k) and mega (M) prefixes

Human vs. Natural Emissions (2008)

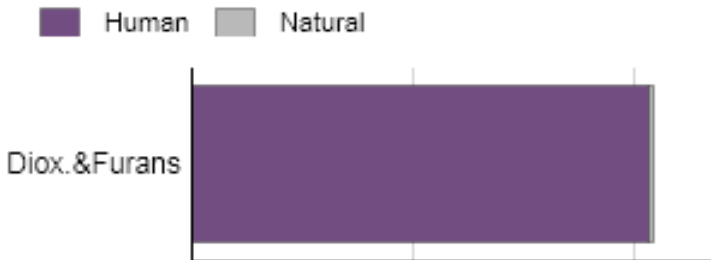


Figure 2 Web tool screen shot showing scientific notation

When the mouse pointer is positioned over the individual bars of the charts, or slices of the pie, the data is displayed in a 'tool-tip', or 'hover over'. In these hover overs this system of prefixes and scientific notation is also used.

About the EPA

The EPA is an independent statutory authority and the principal environmental regulator in NSW. It leads the state's response to managing a diverse range of activities that can impact on the health of the NSW environment and its people, using a mix of tools including education, partnerships, licensing and approvals, audit, enforcement and economic mechanisms.

The EPA performs the following functions:

- regulates air, water and noise pollution, waste, forestry, coal seam gas mining, contaminated sites, radiation, dangerous goods, hazardous material and pesticides
- develops, implements and evaluates policies and strategies to mitigate environmental impacts and minimise the community's exposure to risks from air pollution, noise, pesticides, waste and hazardous materials
- monitors emerging environmental issues and develops appropriate responses to prevent or minimise adverse impacts through early intervention
- administers the Waste and Environment Levy and load-based licensing which drives environmental improvement
- works with industry to implement pollution reduction programs utilising best practice technologies to enhance environmental performance, reduce emissions and improve process efficiency
- investigates breaches of legislation and undertakes strategic compliance and enforcement
- reforms the regulatory framework for environmental protection to strengthen its effectiveness, minimise red tape and optimise compliance costs
- responds to incidents and investigates reports of environmental harm received from the public and industry
- promotes responsible behaviours and educates the community and industry about the benefits of waste minimisation, increasing recycling and reducing littering.

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