



The state of air quality in New Zealand: The Commissioner's commentary

Frequently Asked Questions

What is the report about?

The Commissioner's report is a commentary on the *2014 Air Domain Report*. The *2014 Air Domain Report* was prepared jointly by the Ministry for the Environment and Statistics New Zealand. The Commissioner's commentary begins with an assessment of that report. It then examines the state of air quality in New Zealand and implications for its management. The focus is on the most important pollutant in New Zealand, the tiny airborne particles called particulate matter (PM).

What is the state of air quality in New Zealand?

It is generally good, as would be expected in a windswept, maritime country with a small population and little heavy industry. Air quality is significantly poorer in winter in many towns and cities, and particularly where temperature inversions trap wood smoke and other pollutants. However, even in these places air quality is good on most days.

Is air quality getting better or worse?

There has been great progress over the years due to both market changes and actions by central and local government. For instance, there has been a shift from heating homes with wood or coal to electricity and gas. Vehicle emissions standards and conditions set in resource consents have also contributed to the improvement.

Is air quality of concern?

Even at the levels found in New Zealand, air pollution still has impacts on respiratory and cardiovascular health. There is no 'safe' level of air pollution and it remains an important public health issue. However, the goal should be one of progressive improvement, and strategies to manage air pollution should consider other health issues such as cold damp homes.

Is air quality well managed in New Zealand?

The Commissioner evaluated the rule set by central government for particulate matter – the PM₁₀ rule. The PM₁₀ rule is now 10 years old, and the Commissioner has recommended that it be reviewed and brought up to date with current scientific understanding. The commentary is not an audit of regional council management of air quality.

What is particulate matter?

Particulate matter (PM) is the name for tiny particles suspended in the air. It can cause a range of health effects from minor irritation through to respiratory and cardiovascular disease and the shortening of life. Sources of PM include coal and wood smoke and diesel exhaust, and some, like sea-salt and wind-blown soil, are natural.

PM is commonly measured in two sizes – PM₁₀ includes all particles smaller than 10 microns across, while PM_{2.5} only includes particles 2.5 microns or less. For scale, a human hair is 70 microns.

Both short- and long-term exposure to PM have health impacts. Short-term exposure to PM is measured in terms of daily average concentrations. Long-term exposure to PM is measured as the annual average concentration.

According to the World Health Organization:

- Smaller particles are more damaging to population health than larger particles are.
- Long-term exposure has greater impacts on population health than short-term exposure does.

Why has the Commissioner issued this commentary?

Under the Environmental Reporting Bill, expected to become law this year, the Ministry for the Environment and Statistics New Zealand will produce reports every six months on one of five domains – air, water, marine, land and atmosphere – and a synthesis report every three years. Under the Bill the Commissioner may comment, at his or her discretion, *“on an environmental report and the processes that produced it”*. In anticipation of the Bill becoming law, officials produced the *2014 Air Domain Report* last year, and the Commissioner has now produced her commentary on it.

What was the Commissioner’s assessment of the *2014 Air Domain Report*?

The Commissioner commended the Ministry for the Environment and Statistics NZ on what they have achieved in a limited amount of time. There will never be a perfect state of the environment report – the task is too wide-ranging and the available data sets will always be inadequate in some way. The challenge therefore is one of incremental improvement and the Commissioner has recommended seven areas for improvement.