Air quality

Nitrogen dioxide (NO_2)

SA trend and condition report card 2020

STATEWIDE

Trend **Stable**

Condition **Very good**

Reliability **Very good**

Trend

Ambient levels of nitrogen dioxide (NO_2) in South Australia have been stable since 2005.

This assessment is of the annual average levels of ambient nitrogen dioxide (NO_2) measured at six air quality monitoring stations around metropolitan Adelaide (top figure).

Monitoring is not conducted elsewhere in South Australia because there are no other significant sources of NO_2. This has been confirmed by past air quality monitoring in Gawler, Mount Gambier, Port Pirie and Whyalla.

In metropolitan Adelaide, NO_2 levels have generally been low and stable since 2005.

NO_2 levels and their effect on air quality vary based on the presence of emission sources, weather conditions and local topography. These account for long-term variability between monitoring sites and short-term variability at any given location.

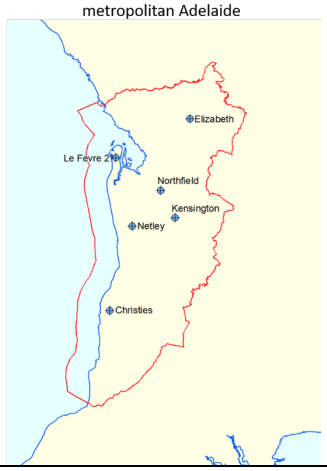
Condition

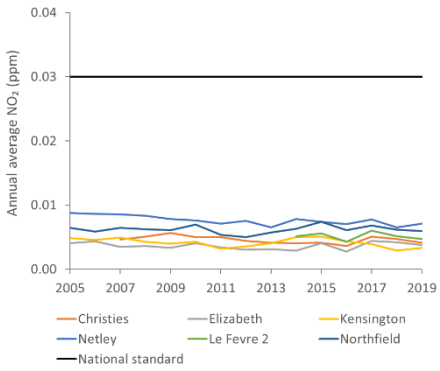
The condition of ambient NO_2 levels across South Australia is rated as very good because the annual average levels are well below the national standard.

In 2019, the annual average levels of ambient NO_2 ranged from 0.003 to 0.007 parts per million (ppm), which is well below the national standard of 0.03 ppm (bottom figure).

Annual average levels of nitrogen dioxide in South Australia are low and well below the national standard.

Air quality monitoring stations across metropolitan Adelaide





Why is air quality a problem?

NO_2 is an air pollutant that can affect human health. Effects include increased risk of respiratory infections in children, increased mortality and hospital admissions for respiratory diseases, and aggravation of asthma.

Nitrogen oxides are precursors in the formation of ozone and photochemical smog, and can form secondary particles that also cause respiratory problems.

Environmental effects of NO_2 include toxicity for some plants and reduction of plant growth.

What are the pressures?

Transport, industry (power generation, industrial boilers) and domestic activities (wood burning) are sources of NO_2.

High temperature combustion of fossil fuels causes atmospheric nitrogen to react with oxygen in the air to produce nitrogen oxides, which are mainly a mix of nitrogen dioxide and nitric oxide. Nitrogen oxides may also result from combustion of nitrogen compounds in some fuels.

What is being done?

Australia has national standards for NO_2, which are currently being reviewed as part of the National Clean Air Agreement. Vehicle emission limits in the Australian Design Rules continue to play a role in reducing emissions from vehicles. The South Australian Government is also promoting alternative modes of transport such as cycling, public transport and low-emission vehicles. The Environment Protection Authority regulates industry and provides advice as part of the state planning assessment process.

For further information, see Technical information