

# Clean and Healthy Air

FOR GLADSTONE

FACT SHEET

## nitrogen oxides

### What are nitrogen oxides?

Nitrogen oxides are gases composed of oxygen and nitrogen and include a mixture of nitric oxide (NO) and nitrogen dioxide (NO<sub>2</sub>). They are collectively referred to as “NO<sub>x</sub>”.

Nitric oxide is a colourless and odourless gas, whereas nitrogen dioxide is an odourous, brown, acidic gas that can affect our health and the environment.

Nitrogen oxides play an important role in atmospheric chemical processes where they can react and generate secondary pollutants, especially ozone. They can also be oxidised to produce acids which can be removed from the atmosphere through both wet and dry deposition.

### What are the sources of nitrogen oxides?

Nitrogen oxides are formed during combustion when nitrogen in the atmosphere (about 78% of air is nitrogen) and contained in fuels is oxidised at high temperature.

The major sources in Gladstone are the power station and other major industries. Additional sources include motor vehicles, air and rail transport and shipping. Nitrogen oxides are also produced from natural processes, including lightning discharges.

### How can nitrogen oxides affect our health?

Nitrogen oxides can irritate the eyes and respiratory tract as well as aggravate chronic lung disease and asthma, especially in children.

In addition, nitrogen dioxide may sensitise individuals to the effects of other pollutants and allergens and may increase susceptibility to respiratory infections.

### Measuring nitrogen oxides in Gladstone

NO<sub>x</sub> has been monitored in Gladstone since 1979 and in recent years, NO<sub>2</sub> concentrations in the ambient (outdoor) air have been below 0.12ppm (the national standard is 0.12ppm over a one hour period). There is no standard for NO.

The extended air monitoring program will see nitrogen oxides measured at all six fixed stations as well as the mobile station with live data available on the EPA website.

### For more information

Visit [www.epa.qld.gov.au/gladstone](http://www.epa.qld.gov.au/gladstone) for more information on the Clean and Healthy Air for Gladstone project and for links to live air data and other air quality information.

*Notes: ppm is a measure of concentration expressed as “parts per million”*

Sources of nitrogen oxides

□ Industry  
■ Transport  
■ Biogenic

