

The ozone layer

[<http://www.environment.gov.au/protection/ozone/ozone-science/ozone-layer>]



What is the ozone layer?

Ozone is a naturally occurring molecule containing three atoms of oxygen. Ozone molecules form a gaseous layer mostly in the upper atmosphere (the stratosphere) 15-30 km above the surface of the earth, and protects life on earth by absorbing ultra-violet (UV) radiation from the sun. UV radiation is linked to skin cancer and reduced productivity in agricultural crops.

Ozone depletion

Scientific evidence has proven that the natural balance of stratospheric ozone has been upset by the production and release into the atmosphere of ozone depleting substances (ODS), including chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons. These substances are used in refrigerators and aerosols. These gases destroy ozone molecules.

Data collected in the upper atmosphere have shown that there has been a general thinning of the ozone layer over most of the globe. This includes a five to nine per cent depletion over Australia since the 1960s, which has increased the risk that Australians already face from over-exposure to UV radiation resulting from our outdoor lifestyle.

Antarctic Ozone Hole

What is it?

The Antarctic ozone hole is a dramatic thinning of ozone in the stratosphere over Antarctica each spring. This damage is due not only to the availability of ozone-depleting substances in the stratosphere, but also naturally occurring meteorological conditions that facilitate the destruction of ozone over Antarctica.

Montreal Protocol on Substances that Deplete the Ozone Layer

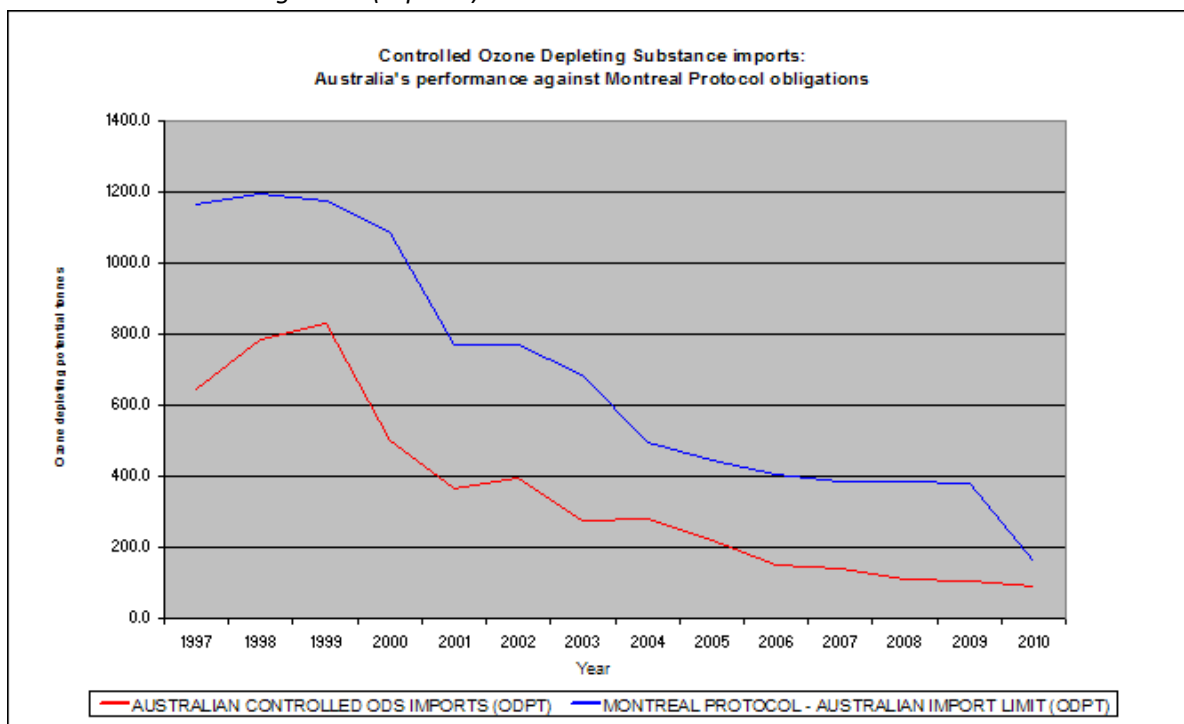
[<http://www.environment.gov.au/protection/ozone/montreal-protocol>]

Introduction to the Montreal Protocol

Damage to the Earth's protective ozone layer has sparked unprecedented worldwide concern and action. The Protocol sets out a mandatory timetable for the phase out of ozone depleting substances. The Montreal Protocol targets 96 chemicals in thousands of applications across more than 240 industrial sectors.

Since it was agreed internationally in 1987 to phase out ozone depleting substances (also known as ODS), 196 countries have ratified the Montreal Protocol.

Australia's performance (bottom line) in phasing out ozone depleting substances against its Montreal Protocol obligations (top line).



Montreal Protocol — support for developing countries

The Multilateral was created under the Protocol in 1990 to provide financial assistance to developing countries to help them achieve their phase out obligations of ODSs. The Multilateral Fund has provided more than US \$2.5 billion in financial assistance to developing countries to phase out production and consumption of ODSs substances since the Protocol's inception in 1987.

The future

Prospects for the long-term recovery of the ozone layer are good. Non-essential consumption of major ozone depleting substances ceased for developed countries in 1996, and for developing countries in 2010. Scientists predict that if the international community continues to comply with the Montreal Protocol, the ozone layer should recover to pre-1980 levels between 2050 and 2065.