

## Physical environment

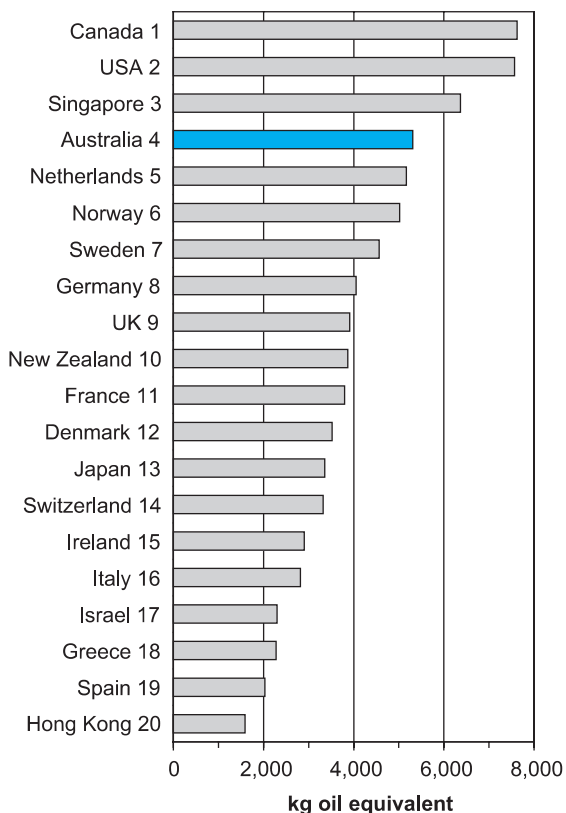


Figure 1: Energy consumption per capita, 1993

tonnes oil equivalent

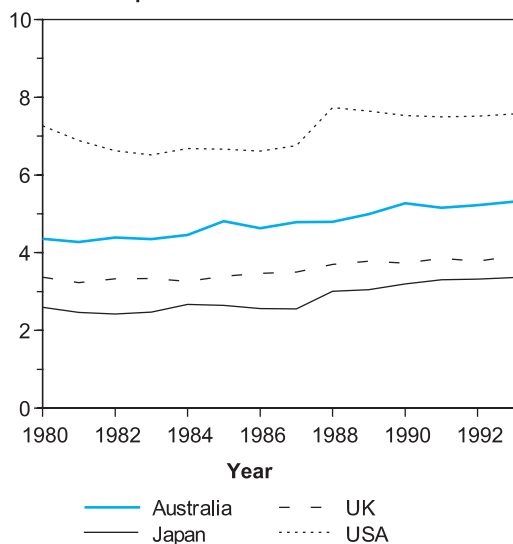


Figure 3: Trends in energy consumption per capita, 1980 to 1993

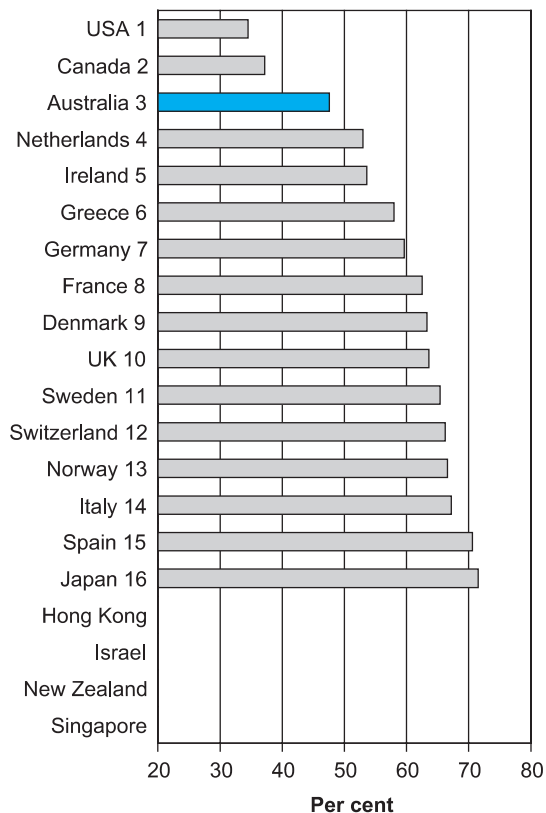


Figure 2: A 'green' ranking, 1993

tonnes

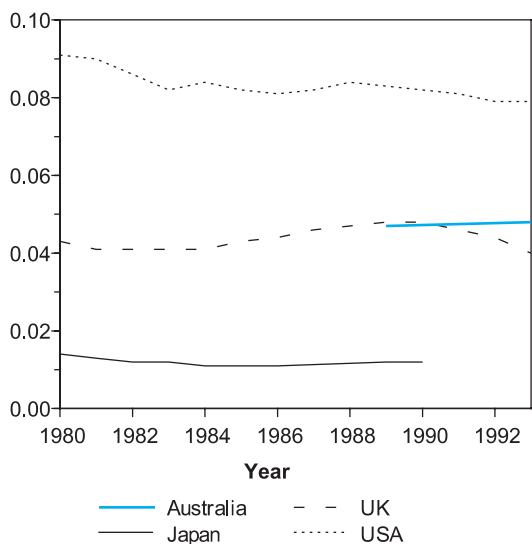


Figure 4: Trends in emissions of nitrogen oxides per capita, 1980 to 1993

## Physical environment

Per capita emission of 'greenhouse gases', energy consumption and municipal waste, 1993<sup>(a)</sup>

| Country     | SO <sub>x</sub> emissions<br>(kg) | NO <sub>x</sub> emissions<br>(kg) | CO <sub>2</sub> emissions<br>(tonnes) | Energy consumption<br>(kg oil equivalent) | Municipal waste<br>(kg) |
|-------------|-----------------------------------|-----------------------------------|---------------------------------------|---|-------------------------|
| Australia   | 90                                | 48                                | 16                                    | 5,310                                     | 776 (1989)              |
| Canada      | 107                               | 68                                | 15                                    | 7,624                                     | 660                     |
| Denmark     | 30                                | 51                                | 11                                    | 3,522                                     | 460                     |
| France      | 21                                | 26                                | 6                                     | 3,800                                     | 470                     |
| Germany     | 48                                | 36                                | 11                                    | 4,054                                     | 360                     |
| Greece      | 51                                | 34                                | 7                                     | 2,276                                     | 310                     |
| Hong Kong   | —                                 | —                                 | —                                     | 1,588                                     | —                       |
| Ireland     | 53                                | 37                                | 9                                     | 2,904                                     | —                       |
| Israel      | 53                                | 35                                | 2                                     | 2,297                                     | —                       |
| Italy       | 30                                | 36                                | 7                                     | 2,820                                     | 350                     |
| Japan       | 7                                 | 12                                | 9                                     | 3,357                                     | 410                     |
| Netherlands | 11                                | 36                                | 11                                    | 5,167                                     | 500                     |
| New Zealand | —                                 | 43                                | 8                                     | 3,871                                     | —                       |
| Norway      | 8                                 | 53                                | 7                                     | 5,020                                     | 510                     |
| Singapore   | —                                 | —                                 | —                                     | 6,371                                     | —                       |
| Spain       | 57                                | 32                                | 6                                     | 2,031                                     | 360                     |
| Sweden      | 12                                | 46                                | 6                                     | 4,561                                     | 370                     |
| Switzerland | 8                                 | 22                                | 6                                     | 3,321                                     | 400                     |
| UK          | 55                                | 40                                | 10                                    | 3,910                                     | 350                     |
| USA         | 76                                | 82                                | 20                                    | 7,570                                     | 730                     |

(a) Or latest available year, including provisional figures and OECD estimates. Varying definitions can limit comparability across countries.

Sources: OECD 1996c; New Economics Foundation 1993; United Nations 1995c

- The links between the environment and health are receiving increasing prominence. At a broad level, direct causality is difficult to determine although it is generally recognised that depletion of the environment can lead to adverse health consequences, and that improvements in health are gained through limiting harmful environmental impacts. In some cases, such as the relationship between solar radiation and melanoma, causality is better understood via epidemiological studies.
- Air quality, as determined on the basis of per capita emission of oxides of sulphur, nitrogen and carbon, shows large variation across OECD countries. Australia ranks high in terms of these gas emissions (see table above). This high ranking is accompanied by per capita energy consumption statistics which continue to show an increasing trend (Figures 1 & 3).
- Australia ranks low in a 'green league' of nations. A 1993 report (New Economics Foundation 1993), based on 11 key environmental indicators, judges Australia to be a poor performer among OECD countries (Figure 2). In addition to high greenhouse gas emissions and low energy efficiency, Australia generates large amounts of waste per capita. It should be noted that among the three worst performers, Australia performed notably better than the United States or Canada. Each of these countries are geographically vast in comparison to other OECD countries, and although highly urbanised, the dispersion of their populations across large areas contributes significantly to their rankings.
- Japan was judged to be one of the better OECD performers because of the efficiency of its economy and low pollutant emissions. The United States was the worst performer, cited as having excessive energy consumption, output of noxious gases, waste generation, car use and water consumption.
- It is not possible to provide a comprehensive assessment of Australia's air quality due to issues such as a lack of consistent standards, inadequate or non-existent monitoring, fragmented data and the lack of a clear relationship between air quality and health. Australian data are based on the best available estimates (State of the Environment Advisory Council 1996).

**For more information, see:**

State of the Environment Advisory Council 1996. *Australia: state of the environment 1996*. Collingwood: CSIRO Publishing.  
McMichael AJ 1993. Global environmental change and human population health. *Int J Epidemiol* 22: 1–8.