

## Statement by the Australian Nuclear Association Inc - October 2003

The world population is predicted to increase from six to nine billion in the next 50 years, mainly in developing countries. These countries currently have low per capita incomes and expectations of an improved living standard requiring more energy. This greater energy need cannot be met by fossil fuels without serious problems arising due to air pollutants, greenhouse gases and depletion of reserves for use by future generations. While renewable sources of energy such as solar, wind, waves, biomass and geothermal, can make a contribution and deserve support, many of these sources are limited by their dilute and intermittent nature, their cost and their large requirement for land area. Most population growth will be in large urban areas in developing countries which will require large base load electricity generation capacity. The only proven economic option to generate this energy with minimal air pollution and greenhouse gas emissions in the foreseeable future is nuclear power supported by cleaner use of fossil fuels and renewable sources in favourable locations.

A total of 441 nuclear power plants are operating around the world in 30 countries and produce 16% of global electricity. These plants represent a mature technology with over 10,000 reactor operating years of experience. In addition, there are 32 new reactors under construction.

The ten countries with the highest reliance on nuclear power are: Lithuania, 80%; France, 78%; Slovakia, 65%; Belgium, 57%; Bulgaria, 47%; Ukraine, 46%; Sweden, 46%; Slovenia, 41%; Armenia, 40%; Switzerland, 39%. The reliance in several other major countries is: Korea, 38%; Japan, 34%; Germany, 30%; UK, 22%; USA, 20%; Russia, 16%.

In these countries, the advantages for nuclear power are:

- reliable supply with high availability;
- favourable economics compared with imported coal or coal not available close to the load centres;
- assured availability of uranium at a stable price compared with uncertain long-term prices of coal and gas; \* the high level of safety in nuclear industries in the western world; and
- safe and economic methods available for management of the small amounts of radioactive wastes compared with expensive and unproven methods of management of the large volumes of carbon dioxide and toxic wastes (including radioactive materials) from burning fossil fuels. The minimal emission of greenhouse gases or air pollution at the nuclear power station and in the associated fuel cycle is a significant additional attraction of nuclear generation.

Australia relies heavily (85%) on coal for its supply of electrical energy for residential and industrial use and relies on petroleum products for transport. Whilst renewable sources are becoming increasingly used they are unlikely to contribute more than a few percent over the next 10-20 years and will remain expensive relative to generation by fossil fuels and nuclear. Accordingly, Australia will continue to have high per capita greenhouse gas emissions when compared with other developed countries, partly due to the industrial use of electricity in the resource industries. The Electricity Supply Association of Australia estimates that electricity demand will probably increase at 3% per year to 2020. This represents a 70% increase on current demand and a need for construction of about 50,000 MWe of new capacity. If this increase was to be based on coal the environmental impact could be considerable, while if based substantially on gas it would require the discovery of one or more major new gas resource areas and still contribute heavily to greenhouse gas emissions.

**Nuclear power should therefore be evaluated as a part of Australia's future energy needs, taking into account cost competitiveness, including external costs and environmental factors for all energy technologies.**

Contact the ANA Secretary, PO Box 445, Sutherland, NSW 1499, Australia