EIANZ POSITION STATEMENT ON ENERGY

March 2007

BACKGROUND

Adequate provision of energy infrastructure is an essential feature of modern, developed society and is an important issue in aiding developing societies. Energy supply and services contribute to both economic and social development, but they also have significant environmental and social impacts. How energy is used and lack of energy infrastructure can inhibit economic and social development.

The use of energy is a major consideration for sustainability in society. Emissions from energy production have effects locally (health and ecology), regionally (health and ecology), and globally (enhanced greenhouse effect). Emissions result in a range of environmental impacts to air, water, land and ecosystems, and in particular are a major contributor to the enhanced greenhouse effect and associated climate change. Major energy facilities require significant energy to construct and maintain and have long lifetimes, of the order of decades. Sustainability assessments of these facilities should be considered over such time-scales, particularly in relation to the greenhouse effect.

Improved energy efficiency and conservation measures, and the use of renewable energy technologies for energy infrastructure, hold the key to long-term sustainability. However, it is not practical to implement these fully in the short term for a variety of technical and economic reasons.

In the transition period to developing a sustainable energy sector and society, enhanced energy conservation measures and enhanced thermal efficiency of energy conversion are essential to minimise pollutant emission, slow non-renewable resource usage, and enhance long-term economic value of limited resources. Enhanced thermal efficiency should apply to all parts of the energy system from supply to end-use, and for all existing and new infrastructure. It will also be necessary to develop the use of non-renewable resources and new technologies through research grants and incentive programs to achieve some economies of scale and demonstrate large-scale performance improvement.

This statement covers issues related to energy policy, programs and projects, and the complete energy supply system including:

- existing energy resources including coal, gas, oil and derivatives (e.g. petroleum), renewable (hydro, wind, solar, etc.) and nuclear energy;
- existing generation technologies using the above resources (including electricity);
- new renewable and alternative technologies being developed (e.g. hydrogen);
- energy transport and transmission technologies;
- existing end-use technologies (e.g. heating and transport) and new technologies being developed; and
- energy conservation programs related to energy use, including those associated with building design, urban design, etc.

Note that the EIANZ has position statements on climate change and sustainability that provide more detail on some issues related to energy. These should be read in conjunction with this position statement.

POSITION STATEMENT OF EIANZ

The EIANZ believes that all energy issues should be evaluated in terms of *sustainability*, i.e. balancing economic, social and environmental outcomes.

The EIANZ believes that all planning and assessment of energy system initiatives and projects should:

- ensure the provision of safe and reliable energy infrastructure;
- minimise the negative environmental and social impacts;
- encourage the use of energy conservation programs and renewable resources to decrease dependence on the use of non-renewable resources;
- encourage the adoption of the most thermally efficient technology, which is economically, socially and environmentally desirable for generation, transmission and end-use; and
- consider the use of economic instruments (e.g. taxes or incentive programs) to compensate for environmental externalities associated with energy technologies.

In relation to Energy Supply, the EIANZ believes that, in evaluating the need for new energy sources, processes should:

- reduce the use of energy sources, fuels and limited natural resources that are non-renewable;
- favour the use of zero or low pollutant emitting technologies;
- favour the use of renewable resources where these would result in a more sustainable energy system;
- evaluate the alternative use of demand-side measures to increase energy efficiency or local generation alternatives to reduce the need for new large-scale energy supply measures; and
- ensure the adoption of the most thermally efficient technology which is economically and environmentally practical.

Note that in evaluating the need for new energy sources, the desirability of retiring old, inefficient energy sources must be considered concurrently.

In relation to Energy Use, the EIANZ believes that government must:

- educate the community (business and private consumers), on the responsible use of energy, including the environmental and economic advantages of the use of low energy consumption or high efficiency, end-use technologies;
- provide a demonstration to the community of efficient energy use in its own operations;
- encourage, provide incentives for and, where appropriate, mandate the adoption of the most sustainable and thermally efficient end-use technologies, including consideration of the use of minimum performance standards for energy-using equipment;
- encourage, provide incentives for and, where appropriate, mandate the adoption of energy conservation measures related to industry, equipment, appliances and social infrastructure including transport, building construction and urban design; and
- investigate the use of economic mechanisms (e.g. taxes or incentive programs) to achieve the above objectives.

In relation to Energy Research, Development and Demonstration (RD&D) the EIANZ believes that government and industry must:

- provide an increased level of support for research, development and demonstration programs into energy systems, resources and energy conversion technologies that would improve the sustainability of the energy system. This would include conventional sources, renewable resources and alternative sources particularly relevant to resources and needs of Australia and New Zealand; and
- provide an increased level of support for research and development into new energy systems and end-use technologies that would improve the efficiency and sustainability of energy use.