Energy Panel of The Royal Society of New Zealand
Synopsis of Advice

The Problem

The current energy infrastructure in New Zealand has developed from a position of seemingly unlimited natural resources. Those resources are clearly finite, from the biosphere's capacity to absorb of CO_2 to the supplies of readily-available oil.

The economic, social and environmental risks of being unprepared for future major supply constraints are immense. Secure and sustainable energy services are vital to New Zealand's future prosperity. The system must now move from surplus to constrained energy resources, and from unconstrained extraction and consumption to environmental stewardship.

We can only do this by breaking the link between energy use and economic growth. This evolution will require an unprecedented clarity of leadership, based on sound science in the social and cultural context.

We Need to Act Now

The growing demand for energy, our chronic current account deficit, and climate change are all interlinked problems which cannot be considered in isolation. They are huge problems which will affect all New Zealanders. We may only have one generation to implement the solutions, so research is urgently needed.

Towards a Solution

To provide scientific and technological leadership for a secure and sustainable energy future for New Zealanders and our economy, the Royal Society of New Zealand has established an Energy Panel.

In the context of New Zealand's aspirations, growth, innovation and security, the panel will develop a broad view of sustainable energy resources and opportunities to determine needs for future energy research. The panel will provide ongoing independent advice and recommendations on energy research and development, and business opportunities to the public, business and government, and promote education and understanding about energy issues.

We strongly advocate that New Zealand set bold national targets to become completely self-sufficient and sustainable in energy use by 2025, reaching 50% self-sufficiency by 2015.

Growing New Industries

New Zealand needs to participate in energy technology development, and should share some of the risks involved. Energy technology solutions to New Zealand's energy needs will emerge from science and technology, and we must invest in it to benefit from the emergence of what will be a "technology sellers" market. New Zealand needs to follow examples being established in Europe, North America, and elsewhere and better utilize the resources we have, such as wind power, solar power, biofuels and wave/tidal power.

Urgent Investment Needed

A major new energy policy needs to be put in place to focus on making the changes required in our complex and constrained energy system. We know that we will need new energy development and innovation, demonstration of new and improved energy conversion technologies and their rapid deployment. International collaboration and leveraging and supporting industrial R&D investment will be key factors. However, we will need creative thinking and innovation to implement options that can balance availability of finite resources with health and well-being. We also need to understand the uptake of existing technology and behavioural change, including the drivers and time-scales of land-use changes.

The Benefits

New Zealand is making major investments in our energy infrastructure. Understanding our energy system is required to ensure these investments will be productive, flexible, and resilient to changes over their lifespan.

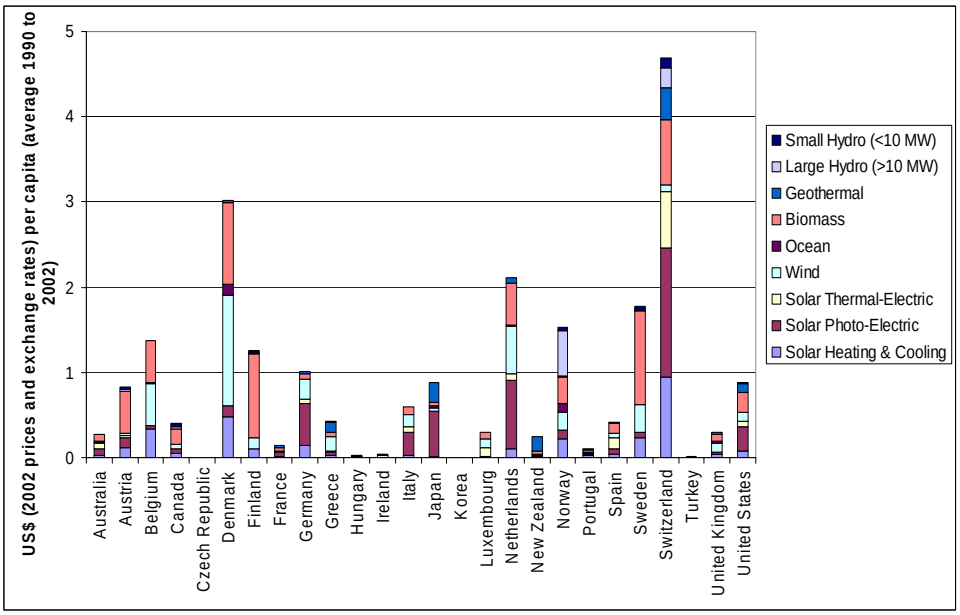
A sustainable energy industry is vital for our economy to be able to support the well-being of New Zealanders and provide new alternatives for primary production and land use. Without this, energy insecurity will lead to economic depression, social deprivation and the erosion of our national security. No-one else will do these things for us. This must be the inheritance we leave for future generations of New Zealanders.

Panel Members

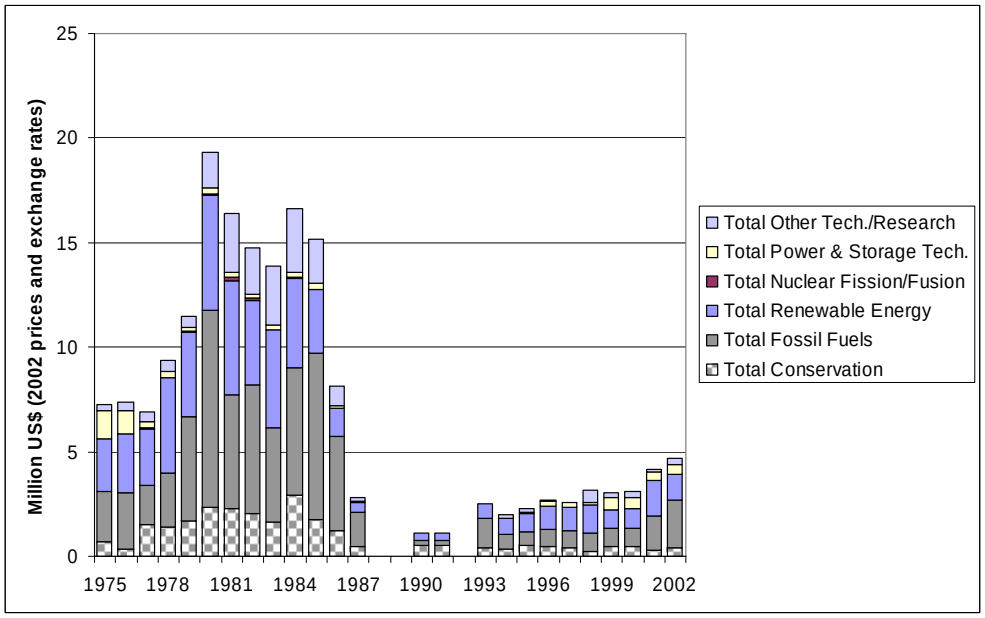
Chair: Dr Jim Watson, President of the Royal Society of New Zealand.

Sir Ian Axford	Professor Tom Barnes
Professor Gerry Carrington	Dr Richard Forster
Dr John Huckerby	Assoc. Professor Hicham Idriss
Dr Susan Krumdieck	Dr Ian Maxwell
Dr Mike Packer	Dr Jim Salinger
Professor Ralph Sims	Professor John Buckeridge
George Jones	Professor Caroline Saunders
Paul White	

Per capita R&D investment on renewable energy sources:



History of energy research investment in NZ:



23rd November 2005