Towards ENERGY SUSTAINABILITY in New Zealand

by Bill Brander and Molly Melhuish

ENERGY IS THE LIFEBLOOD of modern society, which would collapse without a continuous supply of oil, gas, coal and electricity. It has long been recognised that our voracious appetite for finite reserves of fossil fuels would never last. The message of recent years is that the waste products of excessive energy use will place a much earlier limit on the use of fossil fuels than will resource depletion.

Fossil carbon which took up to 200 million years to accumulate is being discharged into the planet's atmosphere, which is no thicker, in proportion, than a film of dew on an apple. The buildup of carbon dioxide and other gases now threaten to destroy the very land and life support systems on which humans and many other species depend.

NZ Energy Options

We New Zealanders, although lucky to have significant hydro and geothermal resources, rely on fossil fuels for the balance of our electricity, almost all our transportation, and most of our heating requirements in commerce and industry.

In the last 20 years New Zealand's primary energy consumption has more than doubled, and electricity generation has grown by a factor of 2.3. During this period we have become increasingly dependent on fossil fuels, particularly Maui gas. Spurred on by Electricorp's advertising, electricity consumption grew by 2.5 percent in 1988-89, compared to an average of 2.0 percent per year in the previous three years. If this trend continues unchecked, new power stations will need to be built, leading to price rises as well as adverse environmental impacts.

New Zealand is one of the few OECD countries which has continued to increase its energy intensity (that is, to use more energy to produce a dollar of Gross Domestic Product (GDP). Over 15 years our energy intensity rose 16 percent, as a result of the "think big" projects and the substitution of cheap energy for labour, while the OECD's decreased 20 percent.

We are now at a crossroad. We could take the "business as usual" path, which would lock us into unavoidable dependence on new energy projects or imports at a time when the low-cost sources are running out. North Island open cast coal would be depleted early next century. The Maui field may be depleted within 15 years under the present gas allocation regime, if the reserves are at the low end of current estimates. In a decade or two this route will lead inevitably to giant coal mines in the Waikato and possibly Southland and Taranaki. Promoters of big industry would undoubtedly renew the call to develop nuclear power.

The other path, described as the "soft path" by American energy efficiency expert Amory Lovins, is marked by different signs, blindly ignored by mining and power engineers. The signs mark the needs which energy provides – warmth, hot water, light, mobility. The path is the route of least resistance – the cheapest way to meet those needs. It recognises energy efficiency as a fuel in its own right – an alternative to new power stations, oil wells and pipelines. A fuel that reduces pollution, protects the environment from further development projects, and can generate jobs and extra disposable income wherever energy is consumed.

Such a path lengthens the lifetime of our fossil fuels, makes the most of our existing hydro electricity, and permits an orderly transition to renewable resources. The path recognises not only the social cost of damaging the environment but also the cost of denying to our descendants the fossil fuels and unpolluted atmosphere that we have enjoyed.