



The future for the Southland countryside? If present rates of power consumption continue without corresponding energy efficiency or conservation measures being introduced, unsightly open cast lignite coal mines such as this may soon dot the southern landscape.

This path is not without problems. It involves valuing our resources to reflect the social costs of their use rather than pricing them at the cost of extraction. It requires energy suppliers to make difficult changes to corporate goals. Profits must be decoupled from energy sales, and sought instead from cost savings through increased efficiency. The total power tariff might be higher than before, but the customer's power bill will be less.

The focus of development must move from doing more with more to doing more with less. Although challenging, these problems are certainly more manageable than those which are likely to result from pursuing "business as usual".

The Potential For Energy Efficiency

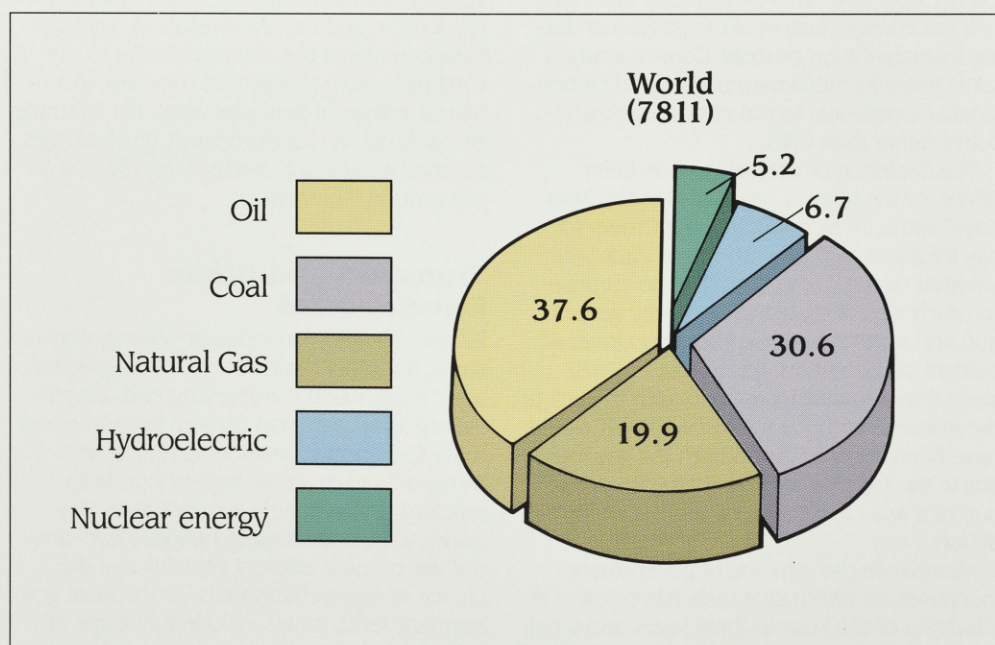
Energy efficiency is like eating a lobster, Lovins told New Zealand audiences. Almost half of it comes in large chunks; the other half in little pieces that are just as nice. Energy efficiency can be marketed, just like energy, but perhaps by different sellers. Lovins advocates that markets be set up to sell "negawatts" – watts saved because energy-efficient equipment is sold – in competition with megawatts.

Some negawatts cost less than nothing, for example long-life fluorescent light bulbs which use a quarter to a sixth the energy and last up to 12 times as long as ordinary incandescent bulbs. In commercial buildings, they save more than their capital cost by eliminating the need for frequent bulb replacements.

We do not yet know the full potential of the energy efficiency resource. Despite the hundreds of millions of dollars spent on exploration and assessing the megawatts available from energy resources, relatively little has been spent on assessing the "negawatts" available in our homes, offices, industries and transport. What has emerged from a few New Zealand studies and a growing base of overseas research indicates that negawatts are becoming cheaper and better every year, rather like personal computers.

Avoid Fuel Conversions

One of the best ways to improve the energy efficiency of the economy is avoid unnecessary fuel conversions. For example, using natural gas directly for space and water heating is twice as efficient as generating electricity for the same purposes. Even though gas appliances are less efficient than electrical ones, the loss of energy in generation (about two thirds) and distribution (about 10 percent) far outweighs the appliance losses.



Percentage consumption by fuel in 1987 (million tonnes oil equivalent)