

## Energy efficiency being left in the cold?

**D**R BLAKELEY'S ARTICLE suggests some fundamental requirements in the electricity industry reforms in relation to energy efficiency. The obvious question is will the reforms deliver?

While the Minister of Energy, John Luxton, stated at a recent Power Industry Conference in Wellington that electricity industry reforms were consistent with energy efficiency, Forest and Bird and other commentators have a different view.

John Collinge, Chairman of the Auckland Electric Power Board pointed out that the reforms have only looked at the generation side of the industry, not the demand side.

This is a fundamental flaw, as the efficient market solution Treasury and the Ministry of Commerce are so dearly attached to depends on efficiency existing on both the demand and supply sides of the industry. For example, investigations by Electricorp and the NZ Planning Council indicate cost effective energy efficiency could supply over 50 percent of New Zealand's electricity demand. This means the country could be wealthier, have higher employment and have less rivers dammed with the same level of energy services because investing in power stations is much more expensive than energy efficiency improvements. Efficiency measures can be installed for less than 3 cents a kilowatt hour. Building power stations would cost at least 15 cents a kilowatt hour.

Why consumers are neither being supplied with or demanding cost effective energy efficiency has to date not been considered in the electricity reform process. If it had been, perhaps we would all know how better to cope with looming electricity price rises! Electricity price increases are not such a hard thing to cope with if consumers can reduce the amount they use for the same level of comfort and at less cost. Consumers are presently being sent the wrong messages. There is much more information available on energy consumption than on energy efficiency and conservation. This situation needs to be reversed if New Zealand is to become an energy efficient, and thus economically efficient, country.

### Fixed charges

At the Power Industry Conference serious doubt was expressed by a number of people, both on and of the floor, about the application of fixed

charges for electricity distribution lines as opposed to variable charges for generation. The Ministry of Commerce's reply seemed removed from common sense, business reality and economic theory and augurs ill for energy efficiency.

Documents put out by the Ministry of Commerce in September increase concerns that fixed charges will be applied in a way that unfairly discriminates against energy efficiency and cogeneration fuels, such as gas. They have suggested that fixed charges could make up 50 to 75 percent of power bills, substantially reducing the incentive to apply energy efficiency techniques.

### Efficiency from competition

Energy Minister John Luxton claims there will be efficiency gains from the electricity reforms, especially the proposed share giveaway from electricity supply authorities. Yet energy trading by the ESAs only accounts for 3 percent of the costs of electricity. Not much room for cost cutting there. Forest and Bird believes the Minister has jumped the gun and is freeing up the energy sector before the proper guidelines have been set to ensure energy efficiency and conservation. These guidelines should be the subject of an energy policy statement under the Resource Management Act.

### Information disclosure

The Ministry of Commerce and Treasury are proposing mandatory information disclosure as part of the reforms, but are not specifying what form the disclosure will take. How can households make rational decisions about minimising the cost of energy services if the information disclosure regime does not result in standardised, easily read and widely available information on the comparative costs of different sources of energy services? (Be the sources other electricity supply companies, energy efficiency or other fuels?)

Ideally every household should have the type of meter supplied by Southpower in Christchurch, plus detailed information on how to save energy arriving with every power bill. Amongst other things, this would encourage electricity suppliers to stock energy efficient products, such as water cylinder wraps.

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and innovative financial arrangements such as futures markets, arbitrage and competitive bidding. Market forces could be a powerful promoter of energy efficiency providing the "playing field is level".

### New Zealand initiatives

There are impressive examples in New Zealand of companies successfully developing and applying energy-conscious technology to waste and other environmental problems. These include:

- Auckland Regional Council's \$15 million joint venture with the Auckland Electric Power Board to convert methane gas from landfills into electricity. Landfills being considered are Green Mount and Rosedale Road which together could generate enough electricity to supply 12,000 households.
- Electricorp's \$24 million re-injection system for the Wairakei power station to be spent over three years. Rather than releasing hot water containing some natural toxic chemicals into the Waikato River, water will be piped through reinjection wells back into the geothermal reservoir.
- The Ministry of Agriculture and Fisheries waste technology unit has developed anaerobic systems for meat and other processing plants. The system in place at the new Fortex Meat Processing plant, at Mosgiel, separates liquid waste and puts it into an anaerobic digester. The process produces gas, which is harnessed to run a dryer, and eight hours later the effluent is 90 percent pollution-free.
- FERNZ Corporation recently won the Arthur Mead Environment Award of the Auckland Branch of the Institution of Professional Engineers of New Zealand for a chemical plant at the NZFP pulp and paper plant at Kinleith which enables the bleaching process to achieve a ten times decrease in waste discharge.
- Auckland University recently upgraded its heating, ventilation and air conditioning plant. For a capital cost of \$73,000, a 50 percent saving in gas consumption (\$60,000pa) was achieved. The payback period was 14 months.
- Bay of Plenty Electricity developed an insulation blanket for CIP (clean in place) hot water units, used on dairy farms for rinsing the interior of bulk milk tanks after each milk collection by a dairy company tanker. For a capital cost of \$197 per unit, a 46 percent saving in energy use for the CIP unit was achieved. The payback period is 8.5 months.
- The Energy Management Group (of Ministry of Commerce) has calculated that \$220 million is spent annually by public sector agencies on energy within their own in-house operations. Of this total, savings of 10 to 20 percent are achievable simply by ensuring equipment maintenance and operations are optimised to reduce energy consumption.