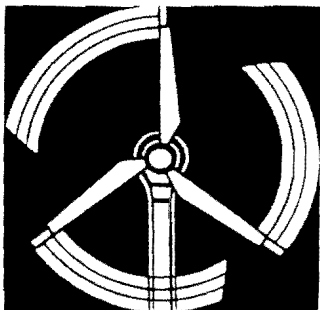


# ENERGYWATCH

The Newsletter of the Sustainable Energy Forum - P O Box 11 152, Wellington, Phone/fax: 04 499 8668.  
"Facilitating the use of energy for economic, environmental and social sustainability."  
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## THE FLEDGELING FORUM FINALLY FLIES

*Ken Piddington, Convener of the Forum*



Enga mana, e nga reo, e  
nga iwi katoa — tena  
koutou!

Greetings! We are  
glad to have you as a  
reader of the first issue  
of the new 'Energy-  
Watch'.\*

This is the official  
newsletter of the  
Sustainable Energy  
Forum (Incorporated) of

Aotearoa New Zealand. We are now legally in existence — the Department of Justice notified our registration as a non profit-making society on 6 June. And on 8 June Government announced its long-delayed decision on the structure of the electricity market...

It is almost two years since a large group of people involved in energy issues gathered at Heretaunga near Wellington. The theme of the Conference was "Sustainable Energy for New Zealand: How Do We Make It Happen?" Our inspiration (and the idea of a "Forum") came from Bill Moxon — sadly for everyone in the Forum Bill died suddenly just a year ago. We dedicate this issue to his memory, and to his vision.

In 1993, we were able to attract community and environmental groups, people in major industry, local government and tertiary institutions, as well as officials from the Ministries of Commerce and the Environment and other experts. Our membership continues to represent this broad spectrum of views on energy.

Over two days of intensive discussion, the Heretaunga Seminar quickly reached consensus on two things. One, a transition to sustainable patterns of energy production and use in New Zealand was desirable immediately (on both economic and environmental grounds). Two, a national energy policy was needed to fill a yawning gap in the Resource Management Act.

A follow-up conference took place at Te Rapa in April 1994, when the decision to set up the Forum was taken, with a strong emphasis on equity as a dimension of sustainability. It was not on for low income groups to be denied access to energy at a reasonable price. It was not

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on for iwi authorities to have more natural resources exploited by others without any partnership or share in the benefits. There should be social criteria for sustainable energy, because in modern society energy = welfare.

But there was no rush to set up another organization, with structure, membership, finances, and all that these entail. Participants at Te Rapa argued for a cautious approach in developing the Forum as a national body. And it was not until the 1995 Conference was held in Christchurch in February that the definitive moves were taken — adoption of draft rules, a charter, and a decision to become legally incorporated.

So here we are...what do we do? Since there is no support from Government for a national energy policy (and that is an understatement) our membership has also established additional targets. A major focus of the Christchurch Conference was the pursuit of local and regional initiatives, particularly in the transport area.

Much else can be done by way of disseminating information, exploring technology (as we did with EECA in a 1994 workshop on wind power) or laying out issues and options (as with Massey University in May, when the topic was 'Trees as Carbon Sinks'). Above all, the Forum needs to win a reputation for impartial (and fearless) analysis: we will seek funding for specific projects which will give us a track record. Having done the work, we will then be in a position to influence outcomes and make workable policy recommendations.

What tone of voice will we adopt? In the weeks since the Government announcement of the ECNZ split-up, it has become clear that what SEF's role could be is as a

\* EnergyWatch has taken a lengthy recess since it was last issued in 1987 by energy analyst Molly Melhuish. Most readers will remember its track record in singling out key issues and key information during the 70's and 80's. Molly is now on the Management Committee of the Forum representing 'Power for our Future' and has gifted the title and goodwill of this publication to the Forum. It will appear initially as a quarterly newsletter - see page 2 for membership details.

# WELCOME

CONTINUED FROM PAGE 1

watchdog with detailed knowledge of the energy sector focusing on public and environmental interest. The transition to a functional market is not straightforward. Games will be played and the interests of the domestic consumer and the environment will (as always) be a residual.

The Forum's monitoring role (see page 10) will help a number of groups, such as Consumer Coalition, Grey Power, Federated Farmers, who are not direct players in the current industry manoeuvring. And through Power For Our Future (a participating member) we have direct links to community networks and to a tradition of activism that saved Manapouri (and will if need be save it again and again...)

Does this watchdog have any bite? First of all, the Forum is (like a marae and like its Roman origins) no more than a meeting place for different interests. Over time however it will produce a common approach, an ethos, which all participants support —to some extent this is already happening. It certainly happened at Christchurch when we debated the Stratford Power Station decision. Then it can certainly bark, and occasionally bite (say, if investment in nuclear power ever gets floated by the international corporates).

So will we be just another bunch of lobbyists? Again the answer is "not very often". There is of course a grey area between pushing relevant information (e.g. all renewables are getting significantly cheaper) and direct lobbying. We are bound to be lobbyists for sustainability. There is the Resource Management Act to back us up in this. But when you open this newsletter you will not find another negative diatribe. We are into solutions and opportunities and we have a lot of active New Zealanders with ideas that will work (look at solar architecture in Christchurch, for example).

Above all, we want individuals and communities to speak for themselves. There will always be a section in 'EnergyWatch' for opinion, and contributions are welcomed from any quarter.

All of which will enable the Forum to promote what New Zealand does best. The America's Cup was won with a wind machine. We can be lead players in a world-wide shift to renewable energy and efficient technologies. Polluting vehicles and resource-hungry equipment can be removed from New Zealand early in the next century. There is no need to delay the revolution.

Your membership and your support will greatly help in this.

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## THE FORUM'S MANAGEMENT COMMITTEE

The Forum is unique in bringing together such a wide range of interests under one umbrella. To give an indication of some of the areas members cover we thought it may be useful for prospective members to see who was on the Forum's Management Committee. Members on the MC carry out and initiate policy and are elected for a rotational period. Current members are:

Ken Piddington - Adviser on Environmental Policy

Molly Melhuish - Analyst

Kerry Wood - Transport Consultant

Mark Hannagan - Marketing Manager, Wairarapa Electricity

Heidi Mardon - Environmental Designer

Jim Ritchie - Emeritus Professor

Mary Dillon - Chair, Tauranga Electricity; Deputy Mayor Tauranga District Council

Mark Bachels - Canterbury Regional Council, Energy & Transport

Jack Woodward - Emeritus Professor in Electrical Engineering

Fiona Weightman - Environmentalist

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## MEMBERSHIP RATES

We would urge you or your company to consider joining the Sustainable Energy Forum and being part of this unique opportunity to express, exchange and challenge ideas on sustainable energy use. The Forum can only be as effective as its members and we need your support to continue our work. The rates are as follows

Corporate/Public Sector \$800

Small Business (less than 50 staff)/iwi authority/  
community or public interest group \$200

Individual \$40

Unwaged or Student \$10

Please either contact the SEF Office or forward the enclosed membership form.

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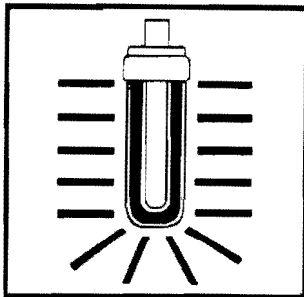
The Sustainable Energy Forum is a non profit making incorporated society. The Forum uses sponsorship as a funding source but insists on independence and impartiality on all policy and production issues.

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While every effort is made to ensure the accuracy of information contained in this publication, SEF, its Management Committee and editorial staff accept no liability for any errors and omissions. Views and opinions expressed in this publication do not necessarily represent the policy or opinions of SEF or its member bodies.

# SUSTAINABLE ENERGY MANAGEMENT

*Guest Article by Helen R Hughes -  
Parliamentary Commissioner for the  
Environment*



The time is right for Government to prepare a comprehensive energy management policy which could be a national policy statement under the Resource Management Act 1991. This policy would set the framework for the future development of the energy industry. It would

remove some of the current uncertainty about investment decisions and ensure sustainable energy management well into the 21st century.

In 1992 I noted that the lack of an adequate Government policy for sustainable energy management had significant implications in the context of restructuring of the energy industry. In particular, I urged Government to provide direction on energy efficiency, renewable energy, transition to substitutes for Maui Gas, and greater encouragement of public transport.

Factors to be considered for sustainable transportation, which were identified by my Office in 1990, included safety, efficiency, land use, fuel use and time saving. I recognised that traffic congestion problems on arterial routes and inner city areas are not always recognised as self-inflicted by car owners.

Factors to be considered for sustainable energy policy included national energy efficiency goals as well as removing the barriers to energy efficiency which were related in part to pricing structures and lack of affordable technology in the local market. In addition there was a need to encourage research and development in energy and ensure public access to information on energy.

The overriding factor governing transport behaviour and use of energy by the general public is convenience - a convenience that people are prepared to pay for. However,

when prices do not accurately reflect environmental costs, environmentally unsound decisions are likely to be made.

So, what has happened in New Zealand over the past five years that would encourage us to believe sustainable management is a realisable goal?

The establishment of the Energy Efficiency and Conservation Authority (EECA) has resulted in energy efficiency goals being formulated and greater information being produced to offset barriers to energy efficiency.

EECA has received funding for implementing the energy efficiency strategy. In this coming year it received additional funding to focus on production processes, commercial lighting and domestic hot water use. An \$18 million fund over five years will promote residential energy efficiency as part of the 1995 electricity industry reform measures.

The Government announcement of measures to encourage competition in electricity generation may encourage new generators and thereby indirectly encourage efficiencies in the electricity sector. However, if this does not occur, improved energy efficiency and reduced risk of environmental damage are very uncertain. There is some progress being made by energy generators to look at other forms of generation but so far environmental and social costs have not been incorporated in pricing policies by generators or distributors. The useful progress made in energy efficiency is focused at energy use rather than energy supply and hardly represents a comprehensive energy policy.

The record for sustainable transportation management is abysmal. We are still arguing as to who pays for public transport and new roads, and private cars still dominate the system.

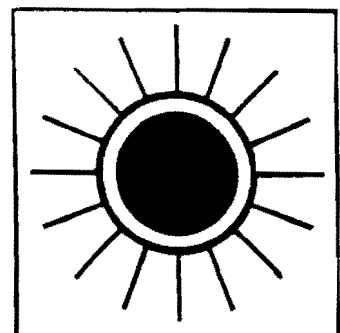
To date the public has not been given the opportunity to debate the future direction of transportation in a meaningful way. In fact the public of New Zealand has not been given the opportunity to debate the future direction of a comprehensive energy management policy. This is too important an issue to leave in a vacuum. We need such a policy and we need it now. The Sustainable Energy Forum will undoubtedly contribute to its formulation.

## SOLAR ACTION - WATCHING THE "WATCHDOG"

Solar Action wishes to congratulate SEF on its successful incorporation and the launch of this newsletter. Solar Action supports SEF's role toward "facilitating" further debate on sustainable energy issues in New Zealand.

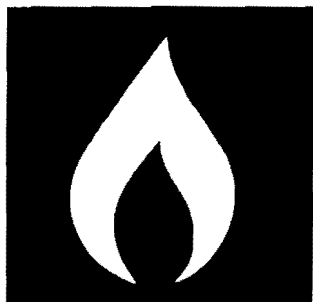
We envision a strong link between the organisations, particularly as SEF develops its objective and analytical base, enabling organisations like Solar Action a venue for sharing ideas and ensuring a lively debate unfolds on

a number of energy related issues. Don't worry Solar Action will be watching the "SEF watchdog" to see when it barks!



# ELECTRICITY STATISTICS DELAYED AND RESTRICTED

*Molly Melhuish*



Government introduced power board reform with a 1991 discussion document which promised that information disclosure requirements would enable cost and price comparison yardsticks to be laid over the sector.

However, the Electricity Statistics have not yet appeared (though consultants to electricity suppliers have had the source information for eight months); for the first time ever, the statistics will not publish figures for "income per kWh sold" (average power price) for each power company - only aggregate figures for the North and South Islands; and CitiPower (Nelson) and The Power Company (Southland) refused to supply any information (and could not be required to because the passage of the 1992 Electricity Act made the old regulations invalid).

New Electricity Regulations on Information Disclosure have been given priority over those for Electricity Statistics. The former are designed to monitor performance of the companies and give costs as well as prices for lines businesses. After consulting with a wide range of companies on the sensitivities involved, the Ministry of Commerce decided it is no longer appropriate to publish individual company information on trading activities. The Electricity Statistics are to monitor the performance of the electricity sector compared to other sectors of the economy, and cover trading as well as lines.

Many local power companies argue that information on competitive activities, which include energy trading, should remain a commercial secret. The Ministry accepted this argument despite the fact that its Information Disclosure background paper notes that local power companies are dominant (rather than competitive) in retail markets with usually 100% market share. Yet these very companies are delighted at the extensive disclosure of information which EMCO (the Electricity Market Company) has persuaded ECNZ to release. Good markets require good information on prices, quantities and quality - rumour and insider information can only be bad for an efficient market.

Industry sources have said for many months that the six privatised power companies (now merged into five) were charging higher prices than others. During the takeover/merger battles, local shareholders' associations were unable to confirm this rumour. This information was also wanted by those concerned about possible privatisation of small pieces of ECNZ. The rumour has been confirmed by the little-known 1995 statistics publication of the Electricity Supply Association. The six privatised companies charged on average 10.13 c/kWh, compared to the non-privatised figure of 9.73 c/kWh. (see 'Monitor' page 10).

A new Information Disclosure publication planned by the Ministry of Commerce will include a price per kWh for a "typical" domestic customer, based on an economic model. However models are of little interest to consumers - it is outcomes (the actual dollars received) which will show whether the company was making excessive profits from the domestic sector.

The developing electricity market will lead to special tariffs in which the actual income/kWh sold (average power bill for a customer class) is influenced by the consumer behaviour. Statistics will show whether this is beneficial or costly to consumers. For example:

- Tariffs could have a low base price but include penalty payments for every kWh used when costly oil-fired generation is needed. Consumers could save dollars and companies could save costs. If this works it would show up in statistics as lower income/kWh sold in most years, lower sales in dry years, lower supply costs, and higher profits.

- Severe penalties may be set for large users who fail to meet power factor requirements. This cuts line losses, but if customers do not adapt, it could lead to higher income/kWh sold and higher profits.

Successful market developments could drastically reduce the need for new power stations, and reduce environmental impacts. In the UK, for example, the market was expected to cut peak loads by 200 MW, it actually cut peak loads by 2000 MW!

Consumers will want to know if special tariffs are working to their advantage or their company's. Until competition is fully effective, surely disclosure of actual income/kWh sold is not too much to ask?

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## ENERGYWATCH - THE RELAUNCH

*Fiona Weightman - Editor*

We hope you find this first copy of the relaunched EnergyWatch of interest. As this is the first issue I would like to appeal for any feedback to be forwarded to me at the SEF office, there is always room for incorporating new ideas on content and layout. In particular we would like input on the following

- Articles/Letters to the Editor from members. Central to our role as a Forum is the wish to network ideas and events. If you are interested in contributing an article to a future issue of EnergyWatch please contact me with a brief outline (either by phone or writing). There is an indication of our objectives and style in the 'Welcome' article. We hope to continue to cover a wide spectrum of contributors within the space available.

- EnergyWatch Logo. We would like to see a new logo for the newsletter. If you know of anyone who would have the talent and enthusiasm to put some time into this, please let us know.

## ROADS GENERATE TRAFFIC - IT'S OFFICIAL

*Kerry Wood*

In Britain the \$NZ 45 billion road building programme has received devastating criticism that has been accepted by the Department of Transport and will have a huge effect on British transport policy. It can only be a matter of time before Transit New Zealand accepts changes too.

Evidence that roads generate traffic has been around for half a century. In 1938 the UK transport minister said, "the experience of my department is that the construction of a new road tends to result in a greater increase in traffic, not only on the new road but also on the old one which it was built to supersede." This has been officially denied for decades, but is now confirmed by an official policy advisory group, the Standing Advisory Committee on Trunk Road Assessment (SACTRA).

SACTRA looked at a range of arguments, from submissions, common sense, published research and driver surveys. They concluded that, "These studies demonstrate convincingly that the economic value of a scheme can be overestimated by the omission of even a small amount of induced traffic. We consider that this matter is of profound importance to the value for money assessment of the Road Programme".

One submission, by the Freight Transport Association, stated that "FTA rejects the argument that building new roads simply generates more traffic", but then went on to give examples of new traffic. These included changes in the location of factories to take advantage of improved travel times (fewer warehouses, longer trips), and the introduction of new services such as next-day parcel services and intercity coach services.

In New Zealand traffic growth is greater in Auckland than in Wellington (because of all those motorways) and Auckland's transport energy use is already 40% higher than Wellington's. In Sydney a \$550 million harbour tunnel was supposed to speed up traffic but the advantage lasted only two years because of more journeys.

The implications are enormous. As SACTRA concluded, city bypasses, urban motorways and new commuter roads can be assumed to induce new traffic, creating the problems they were supposed to solve. Demand management and passenger transport priority schemes will be much more attractive. When Transit New Zealand catches up with the new reality, urban schemes will be almost impossible to justify.

## NUCLEAR PRIVATISATION IMPACT

*Fiona Weightman*

On 9 May the UK Government published its 'Nuclear Review' concluding there was no commercial case for construction of a new nuclear reactor in either the public or private sector. However the Government also decided to move towards privatisation by selling the newer AGR and PWR Nuclear Stations (the money may be put towards tax cuts rather than decommissioning), which will leave the ageing Magnox reactors in the public sector. In addition with the publicity surrounding the upcoming Public Inquiry into the controversial first stage of a nuclear waste dump in Cumbria, the progression of the UK's nuclear waste disposal plan is far from resolved.

It has also been confirmed that the UK's Fossil Fuel

Levy will be dramatically reduced in 1996 as promised. The Nuclear Industry currently receives 95% of the levy (NZ \$2.8 billion per annum) which was always intended for decommissioning but has been partially used to build the new Sizewell B nuclear station. The existing commitment to support 1500MW of new renewable energy by the year 2000 will continue to be supported by 5% of the Fossil Fuel Levy. The UK Government expects the withdrawal of the support for the nuclear industry to be channelled into price reductions which could result in an 8% fall in the price of electricity. This price reduction (and the possible resultant effect of increased use of electricity) has been linked to the Department of the Environment's announcement that it will make an additional 25 million pounds available for the Energy Saving Trust's programme of energy efficiency measures.

## ENERGY CONSERVATION BILL

On 8 June the 'Home Energy Conservation Bill' successfully passed through Parliament and is expected to come into force in April 1996. After a long and stormy history an amalgamation of groups led by Friends of the Earth, Help the Aged and the Association for the Conservation of Energy have now steered this Private Members Bill through both Houses. The Bill requires local authorities to assess the energy efficiency of all homes in their area and draw up local energy conservation plans. The Minister for Energy Efficiency (Robert Jones) gave assurances during the passage of the bill that the target for councils would be 30% energy savings.

## COMMUNITY WINDFARM

The UK's first 'community owned' windfarm has been granted planning permission by Cumbria Council. The 5 wind turbine proposal was submitted by Wind Company UK, a subsidiary of Vindkompaniert in Sweden which has already progressed several windfarms by this process. Wind Company UK (having received a NFFO contract in December) is guaranteed a premium price and a protected market, and along with other successful NFFO projects has been subsequently applying for planning permission. When the windfarm is up and running Cumbrian residents will be able to purchase shares equal to their electricity consumption. As well as providing returns for its shareholders, Wind Company expects profits from the windfarm to fund local energy conservation schemes.

## GAS BILL

The UK Gas Bill is moving through its Standing Committee phase and due to progress to its third reading in the House of Commons in late June. This Bill encapsulates the Government's proposals to move towards a more open and competitive UK Gas Market. However there is little focus in the Bill on the role energy efficiency could play in this new market. Consequently amendments have been tabled calling for companies to consider the role of energy efficiency in line with the Government's position on Sustainable Development, also that there should be a levy (E-Factor) to fund the Energy Saving Trust and other energy efficiency measures.

(For future editions this will be the 'International News' section. Please forward any information you feel may be of interest)

# THE ENERGY DECISION

Molly Melhuish

**The media version of the Government's recent decision to split ECNZ tells the following story;**

- The decision was mainly about power prices. High prices - set at the cost of power from a new power station (long run marginal price, or LRMC) - are economically efficient
- The alternative had been to set prices politically. This would have meant subsidised prices, which would be bad for energy efficiency and delay the new power stations we need
- Government therefore will allow the ECNZs to set prices without political interference.

**The story is plausible but misleading. In fact;**

- The decision was mainly about profits. It will enable EC1 able to set prices; EC2 will match them, not undercut them. LRMC pricing is efficient only where a market is fully competitive.
- The alternative would have been regulation designed to facilitate widespread competition. To set the ECNZs free to set prices "without interference" will condone monopoly behaviour through "duopoly pricing", leading inevitably to price regulation later on.
- Price regulation could lead to political pricing in its worst form.

The media story omits the punch line - where the profits will go: LRMC pricing will give new windfall profits to owners of low running-cost assets, at the expense of consumers. Government, who will own both ECNZs, will take the profits both as an income stream, and as lump sums as each ECNZ station is sold. The electricity market will allow local power companies to capture some of these profits by driving down prices for the new electricity contracts. Unless the companies are somehow made to invest these profits in energy efficiency wherever that is cheaper than new power stations, engineering enthusiasm is likely to override common sense and public opinion.

Higher power prices from this decision will not help energy efficiency, even where efficiency is cheaper than new supply: Firstly, competition will drive suppliers to promote sales. Secondly, ECNZ's price hikes allow more expensive generation to be economic, but the price signal for energy efficiency is diluted because TransPower and distribution charges to the end consumer stay the same. Most importantly, the financial strength of the suppliers will be augmented by the actions of companies such as the UK giant National Power, which intends to finance Stratford off its balance sheet. The balance will not be restored by Government spending on residential energy efficiency, which starts at \$0.5 million and rises to \$5 million in its fifth and last year. A new surplus of power capacity is likely; this will drive spot prices down, further disadvantaging energy efficiency. The less-competitive consumers - domestic and other small consumers - will pay for the new power stations.

LRMC pricing is not economically efficient in the absence of fully effective competition: Demand-side options (demand reduction and energy efficiency) need to be put into this equation. In many countries, regulation requires suppliers to consider demand side options before investing in new supply. New Zealand has chosen 'self-regulation' for the electricity market, and a mere 'threat of regulation' for power pricing. Government is relying entirely on an open, transparent and fair market place to allow consumers choice (but expects self-regulation plus the invisible hand to achieve this). It has not yet devised instruments to put environmental factors into energy decision-making.

One move which could offset the excessive power of local suppliers would be to require the lines businesses to form separate companies from the energy trading businesses, so monopoly rents cannot cross-subsidise competitive trading. The Sustainable Energy Forum will be monitoring developments to ensure sustainability is not compromised.

## NZ NEWS

### NZ'S FIRST WINDFARMS?

Two windfarms are currently progressing through the planning stages - one being Energy Direct's proposal for up to 47 wind turbines at Baring Head in Lower Hutt, the other Wairarapa Electricity Limited's proposed 3MW windfarm (up to 10 turbines) at Haunui, 18 kilometres south of Martinborough.

There has been considerable discussion and consultation surrounding Energy Direct's proposal for Baring Head. The official resource consent application was lodged with the Hutt City Council and comments were being accepted until 26 June. Hearings should be called within 25 - 50 days (although a number of pre-hearings may be held). If the windfarm receives consent

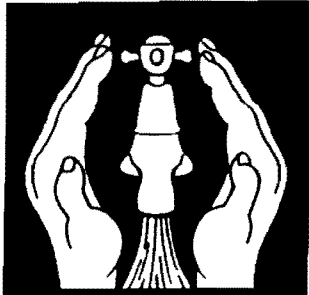
and there is no appeal, the project could be operating late 1996.

Wairarapa Electricity is currently conducting a full feasibility study for their proposal which includes consultation, putting the contract out to tender, land agreements, finance and putting in a resource consent application. If these are all progressed the windfarm proposal would expect to put to their Board for approval in mid-July. With resource consent and the Board's approval the windfarm could be up and running in May 1996.

**STOP PRESS! A resource consent was granted for the Haunui site on 3 July.**

# HOT WATER - FOR SAFETY, SAVINGS & SATISFACTION

*Mary Dillon*



Hot water is an essential commodity in every modern household. Yet in spite of all the benefits, hot water delivery in most homes is not as effective as it could be. Water temperatures are dangerous, energy is wasted, and comfort is compromised.

Tauranga Electricity Limited (TEL), a community owned power supply company and one of the smallest in New Zealand, undertook an eight month campaign advising residents on domestic hot water improvements. TEL contacted individual families and undertook a free hot water check.

The most common problem discovered was that water temperatures were excessively high and thermostats were not accurately controlling the temperature of the water. It was found that 45% of installations checked had water temperatures in excess of 65 degrees C and that of thermostats where the temperature exceeded the set point, 45% were more than 10 degrees C out.

65% of the hot water systems checked had room for improvement - whether this was as simple as replacing a thermostat or as complicated as upgrading the old system to a new A Grade efficient Water Mark.

TEL accepted that it had a role in community education and, on the basis of a growing interest expressed by health professionals working in the area of hot water

safety, the company decided to host a seminar in late May. The two day seminar entitled 'Hot Water Improvements - Education, Engineering and Enforcement' attracted 55 delegates including representatives from ACC, CHES, Plunket, the Ministry of Health, NZ Burn Support Charitable Trust, Council of NZ Senior Citizens, RSA, local bodies, power and gas companies, Electrical Development Association, Energy Efficiency and Conservation Authority, plumbers, manufacturers and merchants.

In NZ the risk of scalding at the point of delivery is significant, particularly for the young and the elderly. From 1978 to 1987, 11 children under 15 years of age died from contact with a hot water tap. In both the young and the aged, their skin is more sensitive and with reduced mobility they are less able to react immediately to a hot water hazard.

While safety is a prime consideration, economics are as well; 14% of New Zealand's total electricity demand is for domestic hot water - about 40% of each family's power account.

Water heating is important to the power industry through controls which enable it to restrict supply at times of peak demand in the morning and late afternoon. This assists with the deferral of capital investment in generating plant and transmission lines which are close to reaching their load capacity.

Reducing the temperature of stored water wherever possible without compromising the effectiveness of service will make New Zealand homes safer and less wasteful of energy.

Full proceedings will be published in due course. Contact Ken Gibb on 07 577 0650.

## ELECTRIC CARS IN NEW ZEALAND

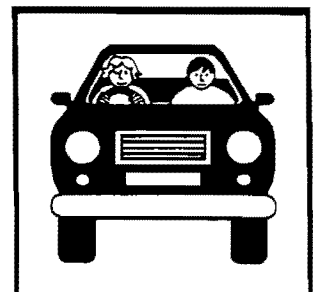
Healthy competition is emerging in the market to supply the first commercially available electric vehicles.

Close on the heels of the Daihatsu Mira conversions undertaken by ECNZ comes SolarTek of Hamilton converting several Toyota Starlet cars to order, one of which has been ordered by the Canterbury Regional Council. Stewart Lister who operates SolarTek is well known for his successes with his wife Vivianne in their Solar Kiwi entries in the World Solar Challenge endurance race of 3000 kilometres across Australia.

PowerCo Ltd of Wanganui are about to launch a fibreglass bodied City car. The first prototype was completed following successful testing last year. Unlike a conversion of an existing internal combustion vehicle, this is a purpose-built electric car and is a joint venture with Heron Developments who manufacture the body. PowerCo had previously converted a Daihatsu Hijet van for their own use to use for appliance deliveries. It has covered a trouble-free 10,000 km.

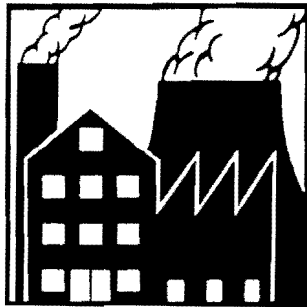
Pandect of Christchurch, in conjunction with Southpower, are developing a project to design and build a prototype car with the very latest in vehicle batteries and other technology. A Business Development Board Grant has been obtained and several companies and organisations have pledged support, including IRL and the University of Canterbury. The project is planned in two stages; the first is the rolling chassis followed by a second stage of body design, which may be in the form of a competition among designers.

For more information contact Ian Bywater at Southpower 03 363 9000.



# 'TREES AS CARBON SINKS' SEMINAR

Molly Melhuish



Some native forest land has lost carbon so rapidly from its vegetation and soils that it could be counted as a net emitter of carbon dioxide. This - through the impacts of deer, goats and possums - is indicated by research in the Ruahine ranges and parts of Westland.

Bill Fleury of the Department of Conservation, Whanganui, presented this information in an enlightening paper at a seminar, run jointly by Massey University and the Sustainable Energy Forum on 12 May 1995. His paper contained one of the many interesting proposals put forward on the controversial question of 'Trees as Carbon Sinks'.

Where forests have collapsed from the impacts of browsing animals, the carbon stored in plants and litter may have been reduced by as much as 400 tonnes per hectare, and where deer are frequent, at least a further 100 tonnes per hectare may have been lost from the soil. About half of the forest managed by the Department of Conservation has forest types susceptible to browsing - generally the broadleaved and podocarp-broadleaved forests. The Whanganui Conservancy alone manages some 200,000 ha of this type, and the potential loss of

carbon from this area, if it collapses, would be equivalent to the carbon released by 5 or 6 Stratford power stations operating for their design life. Already, these forests may have lost up to 50% of their stored carbon.

The bright side of the picture is that after 20 years of 'exclosures' in the Haurangi range (small areas where deer and goats are excluded) the main tree species have regenerated and 5-10 cm of humus has developed.

These estimates from Bill Fleury are based on data published by Kevin Tate from Landcare Research, and colleagues, to assess the likely impact of animal pests on forest carbon reservoirs.

Costs of possum control are estimated at around \$16-20 per hectare, about once every 10 years. Goat control costs about \$15-20 per hectare for an initial knockdown, followed by annual expenditure of about \$4 per hectare. While these costs will be significant over the large areas involved they are perhaps not great in comparison to the cost of alternative means of sequestering carbon.

Other papers covered both Plantation and Energy Forests with workshops examining issues including carbon uptake potential & land availability, economic impacts, monitoring carbon uptake and identifying possible biodiversity or environmental impacts.

Proceedings are available through the workshop chair Ralph Sims, Dept Agricultural Engineering, Massey Univ., Private Bag Palmerston North, tel 06-350-5288, fax 06-350-5640, e-mail 'r.e.sims@massey.ac.nz'. To cover costs the charge for proceedings in a written form is \$40 and \$50 on video cassette (two 3 hour tapes to be supplied).

## PUBLIC TRANSPORT IN CHRISTCHURCH

The Christchurch City Council is looking to redevelop Cathedral Square, including potential relocation of the public transport bus interchange area. For those of you unfamiliar with Christchurch, the "Big Red Bus" has been a longstanding city icon along with the Cathedral. Over the past few decades, as with other cities, patronage on public transport has declined; in the past two years there has been a leveling off and in fact an increase in patronage (the first in nearly a decade). Thus, the location of a bus interchange area is critical to future success of public transport in the city. As a result of a lengthy design process (starting at staff level in 1991 and progressing to a submissions phase in 1994), the City now appears to be reaching a final decision which supports public transport as a valuable city entity. The creation of a working party between the City and the Regional Council has provided a successful forum for exploring the wide range of issues involved in the relocation of the buses. After reasonably extensive analysis and discussion, there appears to be firm commitment by both local bodies to improve public transport including a review of traffic management measures which support public transport, providing an upgraded image for the interchange area and improving the transfer system between competing companies.

The City and Regional Councils recognise the potential benefits of improving the public transport system in Christchurch including reducing energy consumption, air pollution, traffic congestion and land use taken up by vehicle parking requirements.

For further information contact Mark Bachels, Canterbury Regional Council, ph (03) 365-3828 or email MARKB@CRC.GOV.NZ.

## MEMBERSHIP

Enclosed with this issue of EnergyWatch is an introductory leaflet on the Sustainable Energy Forum which includes a subscription form (details also on page 2). If you know of other people who may be interested in EnergyWatch of the Forum please forward details to the SEF office: P O Box 11 152 Wellington, ph/ fax 04 499 8668.



## **CYCLING STRATEGY**

The Christchurch City Council recently completed its Draft Cycle Strategy, relying upon the diligent efforts of a Cycle Steering Committee organised by the City to provide leadership and direction for the document. The Draft Strategy includes a number of recommendations for increasing cyclist's safety, mandating better integrated transport planning to include cyclist needs in traffic management and infrastructure development, and developing a more comprehensive cycle network which

would include 'green arteries'.

Currently cycling accounts for about 9% of work trips in Christchurch; the City is interested in increasing cycling as part of its push for more sustainable transport.

The Draft Cycle Strategy will be released shortly for public comment. If you would like a copy or have any questions please contact Jennifer Cook, Christchurch City Council, (03) 371-1472.

## **POWER COMPANIES**

*Molly Melhuish*

### **SOUTH ISLAND**

The South Island has largely rejected central Government's proposals for privatisation of local power boards. Marlborough Electric became a long-term consumer trust. A high-profile campaign in Timaru stymied a very determined move by the Government-appointed directors of the power board to privatise. The municipal electricity departments in Dunedin, Christchurch, and several smaller cities stayed 100% Council-owned. Invercargill City also reversed its proposal to privatise following a strong public campaign.

However, 'The Power Company' (rural Southland) is currently reconsidering its status and while Mainpower became a Community Trust, it plans to review its ownership in three years (see below).

### **NORTH CANTERBURY**

Mainpower, serving the Waimakariri, Hurunui and Kaikoura districts, is now a 100% Community Trust. David King, a Forum contact in the District, said "The community had been happy with the old power board and would have kept it if possible."

The main aim of the Trustees now is to keep the value of the business in the district. A cooperative was supported by many submissions, but experience of two of the Trustees convinced them that a cooperative would not sustain the value of the business. The other options being considered are ownership by the three district councils, or one of several proposals for non-tradeable shares plus a Charitable Trust.

"We don't mean soup kitchens", David said - "the idea would be that any future owner would have to swallow up the Trust complete with its objectives, along with the company's assets. It would have to dedicate part of the income of the company - like it or not - to those objectives." His suggestion of sustainable energy as an objective of the Charitable Trust has been well received.

### **SOUTHLAND**

The board of 'The Power Company' has been owned by central government since 1936, when the then NZ

Electricity Department took it over when the local power board faced financial problems. However 'The Power Company' is now pressing for privatisation by way of a share giveaway.

Southland's branch of 'Power for Our Future' has called for a 100% Community Trust ownership of the lines business alone. Spokesperson Alan Swallow says that the speculative ventures of The Power Company - ranging from hi-tech metering to gas exploration to refurbishing of transformer oil, plus a costly upgrade of the Monowai power station - should be split off from the core lines business. Alan considers the hearings of submissions to have been very unfriendly to the supporters of the community trust concept and to their expert witness who (after 10 hours travel time to attend the meeting), was given a mere 5 minutes to speak. Alan says that 'Power for Our Future Southland' wants any sell-down of shares (if eventually considered necessary to enforce commercially responsible behaviour) to be delayed by three years to give the 100% Community Trust concept a fair try, as any sell-down would be irreversible.

### **LOWER HUTT**

The Energy Shareholders Protection Association Inc, of Lower Hutt, has achieved some significant changes in the EnergyDirect Community Trust Annual Plan. Convenor Laurie Lennon said that it is clear the Trust is sensitive to community feeling, as was also shown when the Trust rejected the proposed merger/takeover by Power NZ, a company formed from the former Waitemata Power Board and Valley Power (Coromandel/Thames).

Lennon welcomed the Trust's proposed alternative of retaining EnergyDirect as an independent company, while exploring possibilities for a regional grouping based on Capital Power (Wellington) and EnergyDirect (Hutt) - a proposed arrangement of this kind was reported in the *Evening Post* on 27 June.

This could be through contractual arrangements rather than an actual merger, and would be facilitated by the common shareholding of Trans Alta, a Canadian company.

The trust also resolved it will only support proposals for the future ownership of EnergyDirect which make legally binding provision for several matters including direct Trust representation on the company's Board.

# COMPANY PERFORMANCE

*Molly Melhuish*

Power companies with majority private ownership charged higher prices on average, in 1993-94, than trusts, 'MEDs' owned by local councils, or 'others' (with approximately 50% private ownership or similarly mixed incentives). The tables below are derived from the Electricity Statistics, 1995, published by the Electricity Supply Association of NZ (ESANZ). They differ from statistics published by the Ministry of Commerce, as ESANZ statistics include only the electricity sold by local power companies, not direct sales to major users.

The publication notes that Dunedin Electricity and The Power Company (Southland) refused to supply some data and that next year commercial secrecy will lead to much less detailed data being published.

The last column in Table A comes from an excellent report on domestic fixed charges by the Ministry of

Commerce (April '94).

Low domestic prices were found not only in urban areas (eg Mercury Energy) but also in Alpine's statistics (which includes a large rural area in South Canterbury). Highest domestic prices were generally in rural areas, but included Waikato Energy which covers Hamilton. The Ministry of Commerce report notes that the highest domestic fixed charge was from Rotorua Electricity and the lowest from Southpower. The median fixed charge is about 30% of the average annual bill.

Why it matters: Performance standards of particular interest include average power prices and fixed charges. Tariffs are of less interest - some are barely used. Special domestic tariffs will become important as the market develops.

The Forum will be working to ensure detailed information on both prices and fixed charges continues to be released company by company.

From ESANZ statistics, for year ending March 1994

Table A: Income/kWh sold (av price); power co. type

type	overall pri	dom. price	nondom. pr.	dom. fixed c
M.E.D	9.62	9.97	9.65	207
private	10.13	10.50	10.24	226
trust	9.75	10.05	9.63	230
other	9.83	10.40	9.48	259

Table B: Lowest, highest domestic prices, fixed charges

type	highest dom	lowest dom pr	highest fixed	lowest fixed
M.E.D	electro (p.n.)	dunedin	taupo	southpower
private	wairarapa	waitemata	valley (thames)	waitemata
trust	wairoa	alpine (s cant)	wairoa	northpower
other	wei(waikato)	mercury energy	trustp (tauranga)	the power co

## RETAIL ELECTRICITY CHARGES

*Molly Melhuish*

One of the tariff options by Lower Hutt's Energy Direct has no fixed charge. Its 'PayGo' pre-pay meter is charged out at a fully variable rate (and includes GST), which depends on the consumer's demand:

14.46 c/kWh (3000-6000 kWh/yr)

13.00 c/kWh (6000-9000 kWh/yr)

12.45 c/kWh (more than 9000 kWh/yr)

These prices incorporate the 45c/day fixed charge into the price for each of the three consumption bands. The consumer who cuts electricity use saves the full 12 to 14 cents, instead of 10.81 cents for Energy Direct's other tariffs which include a separate fixed charge 45c/day.

Why it matters: Pre-pay meters are generally considered as a way of ensuring people in payment arrears are not cut off. But pre-pay meters have other benefits. People can check at any time how much power they have used, instead of being caught out a month or two later.

Several retail power companies offer these meters, but most include a standing (fixed) charge, usually as high or higher than the fixed charge charged in their other tariffs. EnergyDirect offers an important second benefit - no fixed charge.

Note: In the two years since privatisation, the annual power bill for an 8000 kWh/yr consumer has risen by 18%.

## GROWTH IN AUCKLAND RAIL

*Heidi Mardon*

Passenger surveys carried out by NZ Rail Ltd show that since October 1994 there has been a 49% increase in rail passengers on the Waitakere and Papakura lines in Auckland. It is evident to anyone driving here in Auckland that there are ever increasing numbers of cars on the road and 'rush hour' on the motorway is fast approaching being all day. It is therefore encouraging that one fifth of new rail passengers have switched from their cars to travel by train.

New rolling stock and improved timetables are given as two reasons why rail travel is on the increase. The things that passengers really like about rail travel are the helpful, friendly staff, the good journey time and the comfort of the trains. The main improvement requested is in the train station environment itself, followed by requests for more services and improved frequency.

Watch out in August for the results of a Transportation Study for the city centre. This will indicate the commitment by the council to promote public transport. Transport proposals in the new Auckland District Plan still give road development major funding but suggest a 'balance between spending on roading and public transport'.