

Issue 8

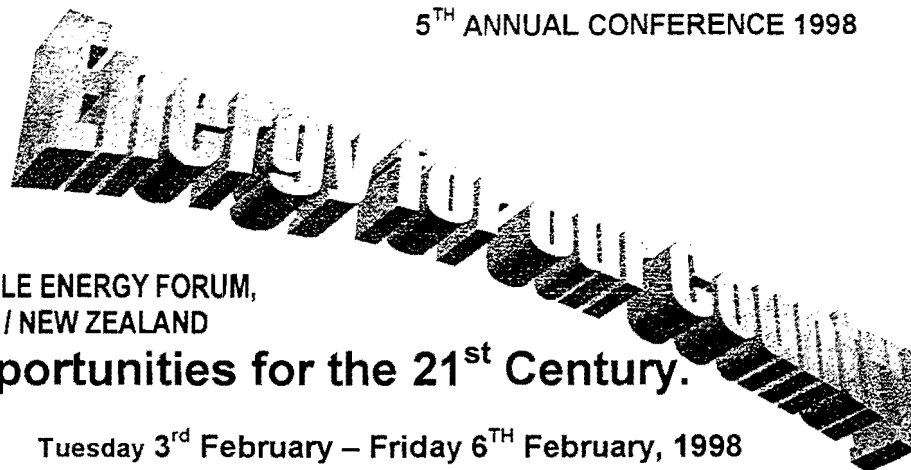
# ENERGYWATCH



THE SUSTAINABLE ENERGY FORUM

ISSN 1173-5449

5<sup>TH</sup> ANNUAL CONFERENCE 1998



SUSTAINABLE ENERGY FORUM,  
AOTEAROA / NEW ZEALAND

## Opportunities for the 21<sup>st</sup> Century.

Tuesday 3<sup>rd</sup> February – Friday 6<sup>TH</sup> February, 1998  
*Massey University, Palmerston North*

The objective of this event is to provide a platform for debating the future for Sustainable Energy in New Zealand following:

- the Climate Change conference in Kyoto;
- the release of the Land Transport Pricing Study outcomes;
- the continuing restructuring of the electricity industry;
- the advent of new technologies in the market;
- the changing of government policy makers;
- the social inequalities of energy use;
- the true cost of fossil fuel use.

The major theme will be based on the Rural Sector, with general sub-themes on:

- Financing of sustainable energy systems
- Security of electricity supply, transmission charges and independence
- Land transportation energy issues
- Kyoto conference – implications for urban and rural industries
- Sustaining rural communities

### A Choice of Field Trips - Trade Exhibits - Poster Papers Invited.

A novel feature (using the computer facilities at Massey), is to provide the hands-on opportunity for delegates to become energy policy makers in the country of "Ecotopia". With a population of 1 million currently dependent on coal-fired power and traditional transport fuels, the opportunities to impose energy efficiency and renewable energy technologies are apparent. But at what cost and for what savings in carbon dioxide emissions? The computer model provides the answers!

So please complete the registration form enclosed and return it immediately or contact SEF for more information. A final programme will be forwarded on registration.

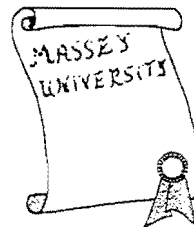
# SUSTAINABLE ENERGY SYSTEMS PAPERS

Massey University is again offering two Energy papers in 1998 for extramural students working by correspondence. **Sustainable Energy Systems** is an introductory undergraduate paper now in its 7<sup>th</sup> year. It covers current energy use in New Zealand and the rest of the world; environmental, social and economic implications from the use of traditional energy sources; energy efficiency and conservation techniques; and a wide range of the renewable energy technologies. A 40% personal project enables each student to place emphasis on his or her particular area of interest. No formal requirements are needed and as for many Massey papers, it is possible to enrol just for a single paper out of interest rather than commit to a formal degree or diploma programme. A 2 day course at the Palmerston North campus on 1-2 September is recommended but not essential. Student comments from the 1997 class of 65 emphasised that the course was "topical", "well managed" with a "clear and useful study guide".

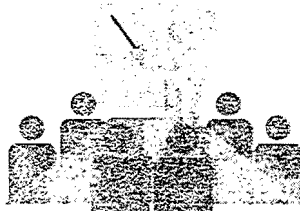
A more advanced paper, **Renewable Energy Resource Engineering** targets those working in the energy industry, those with a particular interest in sustainable energy issues, and postgraduate students. It examines the design

and operation of a wide range of technologies including wind, solar, biomass, tidal, wave, and hydro and analyses their environmental, social, and economic benefits and nonbenefits. No formal qualifications are required but anyone interested is advised to talk with the course controller. It is taught in Block Course mode which requires attendance at the Palmerston North campus on 20-22 July, 1-2 September, and October 5-7 1998. A personal project enables a student to emphasise an area of particular interest, perhaps relevant to their future career plans or place of work.

Details of the courses are available from Assoc. Prof. Ralph E H Sims (Ph. 06 350 5288; Fax. 06 350 5640; E-mail. R.E.Sims@massey.ac.nz. Enrolment details can be obtained from Centre for University Extramural Studies, Massey University, Private Bag 11555, Palmerston North Ph. Help Desk 06 350 5267 or 0900 44 100;



- 12-15 February 1998. *Social Responsibility: whose agenda? Choices for the future*. Massey University, Albany Campus, Auckland. This follows the "Beyond Poverty" conference in March 1997 and the intended themes will include social issues concerning energy availability. Contact Ph. 09 302 2496, Fax 09 377 4804.
- 8-11 June 1998. *Biomass Energy and the Environment*. 10<sup>th</sup> European Biomass Energy conference and technological trade fair. Wurzburg, Germany.
- 20- 25 September 1998. *World Renewable Energy Congress V; Energy Efficiency, Policy and the Environment*, Florence, Italy. Low energy architecture is one major theme but all renewable energy technologies and related policies are included in parallel sessions. Abstracts to Prof Ali Sayigh, Fax: 0044 118 961 1365. Information: Ralph Sims, Massey University. Fax: 06 3505640.



# SEF Snippets

- ❖ The **SEF AGM** was held in Wellington on 27<sup>th</sup> August 1997 with 13 members present and 2 more on conference phone link. Key points were: re-election of Ken Piddington as convenor (unopposed); committee membership of Fiona Weightman (EECA), Brian Farrell (WEL), Kerry Wood, Mohammad Afzal (Manukau City Council), Richard Ball (Christchurch Regional Council), and Ralph Sims (Massey University). Mark Bachels and Jack Woodward were unavailable for re-election and both thanked for their significant contribution to the endeavours of SEF.
- ❖ It is hoped the **SEF Renewable Energy Scenarios**, worked on by Andy Beer before he left his management position in the SEF office to return to the UK, will be completed and presented at the SEF conference. The initial work showed that if the right policies are introduced to encourage the uptake of renewables, any energy gap following the depletion of the natural gas reserves could be filled by a combination of energy efficiency measures, wind, biomass, and other renewables.
- ❖ SEF currently supplies an office/administration service to **NZWEA** (the NZ Wind Energy Association) under the management of Ian Shearer. The **new SEF offices** are at 191, Thorndon Quay, Wellington with the same mail address PO Box 11152, phone 04 473 0615 and Fax 04 473 0613.
- ❖ Following an invitation to this exclusive gathering, Ken Piddington represented SEF at the **Aspen Round Table on Energy and Environment** in Colorado in September 1997. (An account appears elsewhere in the newsletter). The Willi Fels Memorial Trust provided a generous grant to cover his expenses. Ken is currently in Kyoto for the Climate Change talks and is assisting Convertech Ltd there which was the only New Zealand organisation invited to attend. (We hope to receive an update before going to press but Ken will also report back to the February Conference).
- ❖ The **Electrical Development Association (EDA)** was voluntarily wound up recently due to reduced support from the fewer power distribution companies. This will mean a loss of training courses, information services and technology transfer seminars that EDA regularly organised, unless any of these products are purchased by other organisations.
- ❖ SEF put in a submission to the **Land Transport Pricing Study** with support from Tranz Rail. It was anticipated the results of the study would be released in December but current political change might delay this. SEF is to invite Mrs Shipley, the Transport Minister, to address the February conference on the results of the study if her new Prime Ministerial role permits.
- ❖ Triway, a small Southland company, has designed a domestic size **solid fuel burner** claimed to meet the recent stringent submissions imposed by the Canterbury Regional Council. The emissions of particle matter per kg of fuel were measured by Coal Research Ltd to be close to those from cigarettes and well within the new limits! The company has an interest in bioenergy combustion too.
- ❖ The Ministry for Environment's national environmental Audit *State of the Environment* makes depressing reading regarding **energy issues**. Our average energy consumption per person is 3 times the world average and increasing; use of public transport has fallen dramatically; and CO<sub>2</sub> output per person is double world average. Each person also generates around 900kgs of waste for landfills per year; (400kg domestic and 500kg from industry) which is also increasing. Are we really an environmentally aware nation or locked into our consumer-driven lifestyles?
- ❖ A **heliostat** machine, using flat mirrors to concentrate solar energy on to PV cells, has been developed by Colin Johnson and is successfully undergoing trials at the Montana Winery in Blenheim. Supported by ECNZ and IRL, it is producing

electricity for below \$20,000 /kW as well as around 10kW of "free" heat!

- ❖ Land subsidence concerns as evident in existing **geothermal power developments** have caused Environment Waikato and Taupo residents to suggest Contact Energy ( 50MW and 20MW plants) and Trustpower (a 60MW plant proposal) should amalgamate their competing plans for new power stations and go for one less ambitious joint project of around 40MW.
- ❖ The average domestic power bill has risen over 22% in the last 4 years to \$856 a year. The average unit price was 10.97 c/kWh whereas the industrial price had fallen slightly to 7.79 c/kWh. Average electricity bills account for less than 2% of annual household spending being less than tobacco or alcohol. Power companies meanwhile raised profits by 22% in the last year.
- ❖ Carter Holt Harvey's pulp and paper plant at Kinleith finally has its **wood-fired 34MW cogeneration plant** operating using 65 tonnes of wood process residues per hour. It is currently undergoing final monitoring trials before handover to the plant owner, ECNZ. The contract was signed over 2 years ago with the developers, Rolls-Royce Industrial Power (NZ) Ltd, which includes boiler maker John Thompson.
- ❖ Eminent US climate change scientist Wallace Broecker wrote in a recent paper in *Science*, that a build up of greenhouse gases could cause catastrophic effects to deep water ocean circulating currents leading to widespread starvation. The solution he proposed is to separate hydrogen atoms from fossil fuels by reacting them with steam. The hydrogen would be used in fuel cells and the

leftover CO<sub>2</sub> injected far below the sea floor.

- ❖ A 160 year old **hydro power dam** in Maine, USA is to be removed to restore fish life in a 20km stretch of river. Whilst only a small power generator, there is concern it could lead to other similar decisions being made by the Federal Energy Regulatory Commission.
- ❖ **Contact Energy** has taken a 27.7% stake in the Australian hydro generation company Southern Hydro and another 16% stake in a smaller Australian power project. ECNZ has invested in a 10% share of an Indonesian geothermal project and also signed a 17 year supply deal with Fletcher Energy for gas. (Other SOE's such as NZ Post have had their investment plans blocked by government.)
- ❖ The NZ Dairy Group are to build a **gas-fired cogeneration plant** (maybe up to 150 MW) on its Te Rapa site in partnership with Contact Energy who will fund and construct the plant subject to appeals over environmental consents.
- ❖ The 26 MW **Mangahao hydro power station** has been sold to a King Country Energy/Todd Energy consortium after a strong bid by five local iwi together with local companies CentralPower and Electra. The iwi are now to pursue options through the Treaty of Waitangi claims process.
- ❖ Shell International have announced a 5 year \$775 million investment into a new core business, **Shell International Renewables**, to tap an explosion in demand for environmentally friendly power. Oil companies are rapidly becoming "energy companies" it seems!

❖ **If you are not a member of SEF why not join now?**

**See page 9 for details.**

## WIND IN THE WORLD

The IEA wind activity recently held their international meeting in New Zealand with Dinesh Chand from ECNZ being the local representative. Based around this event the NZ Wind Energy Association, supported by ECNZ, held a one day conference attended by around 70 delegates including 25 from overseas. From the presentations it was clear that although implementation of wind power installations is increasing rapidly world wide, they are virtually all receiving some form of financial support to compete with traditional forms of electricity generation.

With no such support in New Zealand likely, the industry is only moving ahead relatively slowly. This is in spite of the excellent wind resource here as demonstrated by NZWEA chair Paul van Lieshout who showed the

amazing Wellington wind speed readings taken over the 45 days before the conference. The main hope for greater uptake of wind energy in NZ lies with reducing the capital costs of the imported turbines. The Danish delegate was optimistic this would occur by 2005. With both Europe and USA recently advocating huge increases in R D and D and ambitious targets for uptake of renewable energy technologies, it could well be that new designs and increased markets (resulting in anticipated cheaper mass production techniques) will enable the wind generation price to drop. Currently around 6-8c/kWh at present, it needs to reach closer to the wholesale electricity price, which might even drop to below 4c/kWh according to some industry sources. Certainly this differentiation will be discussed at the SEF conference.

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## A BURNING ISSUE FOR CHRISTCHURCH

Christchurch's wintertime air quality problems have been recognised for over 50 years but there has been a lack of political will to tackle the issue head on. The Canterbury Regional Council has undertaken extensive scientific investigations of the problem over the last three years. This research has revealed that the principle contaminant is fine suspended particulate (PM10) from domestic heating. It has been estimated that up to 29 premature deaths and over 80,000 reduced activity days can be attributed to PM10 in Christchurch each year. During peak periods over 90 percent of PM10 comes from the burning of coal and wood for domestic heating. Emissions from industry make up 6 percent of total emissions while the remaining 4 percent come from motor vehicles.

Armed with this research the Regional Council took the issue to the people through an extensive public awareness campaign last winter. This has resulted in extensive public and political support for decisive policy action, although there has also been some strong resistance. The CRC has proposed that the use of coal for domestic heating be prohibited from September 1998, that the use of open

fires be banned from 2001 and that enclosed burners with emissions higher than 1.5 g/kg be phased out from 2002. In addition, the Christchurch City Council has announced that it will offer financial incentives for the removal of open fires and coal burning appliances. This initiative is also being linked to an energy efficiency programme aimed at accessing ECCA's Energy Saver Fund. Industry has also come to the party with support from both the Canterbury Development Corporation and the Employers Chamber of Commerce - Although the Coal Producers Federation has been less enthusiastic. The expected result from these actions is an 84 percent reduction in PM10 emissions from domestic heating sources by 2007. Further policies are being developed to reduce or minimise emissions from industry and transport sources.

Policies for other pollutants, such as CO, NOx and SOx will also be developed in the future. This work is being co-ordinated with work such as the Ministry of Transport's Vehicle Fleet Emission Control Strategy.

*Richard Ball*

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## ALL GO FOR RENEWABLE ENERGY IN EUROPE

Greenpeace has obtained a copy of the European's Commission's Renewable Energy White Paper which categorically states that a significant switch to renewables and cuts in greenhouse gases are totally feasible. The White Paper - which outlines a specific EU Renewable Energy Action Plan - is due to be formally adopted by the Commission before the UN Climate Summit at Kyoto. It follows debate on the Green Paper as reported in Energy Wise News (EECA Issue 54, 6-18). If the proposals are implemented, Renewable Energy in the EU will be able to deliver around a third of the total CO<sub>2</sub> emissions reductions necessary to meet a 15% reduction in CO<sub>2</sub> and other greenhouse gases by 2010.

The White Paper proposes to double the use of Renewable Energies within the EU to 12% of primary energy consumption by 2010. The paper states that this would reduce CO<sub>2</sub> emissions by 400 million tonnes per year; it would create between 850,000 and 1.25 million new jobs; and result in an additional billion annual export business. The 12% target will require an extra total net investment of US\$6.3 billion per year which is

less than half of the US\$13.8 billion that the EU currently gives away to the fossil fuels and nuclear power industries from the public purse. The Commission has calculated that public funds of only US\$330 million a year would be needed to implement the "Campaign for take off", designed to assist large scale penetration of renewables and make progress towards the objective.

The paper calls for a "half million solar panels on roofs programme" in Europe by 2010 and for a half million solar home systems to be installed in the developing world.

The Commission blueprint will give total credibility to the EU's negotiating position in Kyoto. It proves that the EU has the practical capacity to cut greenhouse gases by switching to Renewable Energy technologies and shows precisely how this can be done. The paper gives the green light for the EU to hold firm onto its Kyoto target proposals and puts Europe in a win-win position on both the environment and the economy.

*Greenpeace*

### EECA REVIEW

Following EECA's establishment in 1992, the Minister of Energy recently sought an independent review of its effectiveness by the NZ Institute of Economic Research. There is no doubt that as a result of its programmes, significant energy savings have resulted and CO<sub>2</sub> emissions reduced substantially to what they would otherwise have been. In addition an increased awareness of the value of energy by New Zealand society will no doubt result in future behavioural changes, though this is harder to measure. Under the new leadership of Mr Godfrey Bridger, SEF wishes EECA well for the future following what is hopefully a positive outcome from the review process and looks forward to further collaboration.

### SOLAR '98 IN CHRISTCHURCH

A major conference on renewable energy is being organised in Christchurch. It is the Annual Conference of the Australia and New Zealand Solar Energy Society (ANZSES) and will be held at the University of Canterbury on the 25-27 November 1998. The theme of the meeting will be "Creating the Right Climate". There will be international and local speakers and workshops covering technology, commerce, education and other policy areas. For further information, contact Richard Ball, telephone (03) 365 3828, fax 365 3194 or email: richb@crc.govt.nz.

## STOP PRESS: AUSTRALIA ANNOUNCES RENEWABLE ENERGY TARGETS.

Prime Minister Howard in a statement to parliament on 20 November announced a \$A180M package in response to climate change. Although still seeking a fair outcome in Kyoto and maintaining the need to protect Australian jobs and industry, he accepted the need to reduce greenhouse gases.

As well as a series of energy efficiency measures, support for Renewable Energy was the major thrust with \$A65M invested to increase their share of energy supplies. A Renewable Energy innovation investment fund will provide venture capital; a loans and grant programme for the development and commercialisation of the Renewable Energy industry; and support is provided for "leading edge" technologies in areas such as tidal power, solar thermal power, and photovoltaics. An ethanol from wood pilot plant is also to be constructed.

A further key policy is to set a mandatory target for electricity retailers to source an additional 2% of their electricity from Renewable Resources by 2010. A full copy of the 15 page statement is available on request.

### AUCKLAND ENERGY INITIATIVES

An energy group has been established recently under the "Auckland Regional Monitoring Forum". The group consists of people from the Auckland Regional Council, local councils, EECA, MfE, consultants, and electricity and gas companies and has the following objectives.

- To discuss energy related issues which affect the region.
- To promote the collection and exchange of regional energy data and information including the development and promotion of standards for monitoring and data collection.
- To promote a better understanding amongst regional decision makers and the general public of energy issues which affect sustainable development in the region.

*Mohammed Afzal, Manukau City Council*

### BNNZ organise conference with IEA

Biomass production, harvesting and supply, Task XII of the International Energy Agency's Bioenergy Agreement, (IEA, BA) is to hold its final meeting in Australasia in March 1998. This is partly to encourage Australia to join the IEA BA in one or more of its 15 new tasks of which New Zealand, through the Forest Research Institute, will join 4. The delegates will be coming to NZ for part of their meeting so the Bioenergy Network of NZ, with the assistance of EECA, is using the opportunity to run a one day seminar on March 10<sup>th</sup>. There will be 10 or more international speakers and 4 or 5 from the FRI. Details will be available in the new year but note the date now.

## MfE MEETS BNNZ OVER GHG

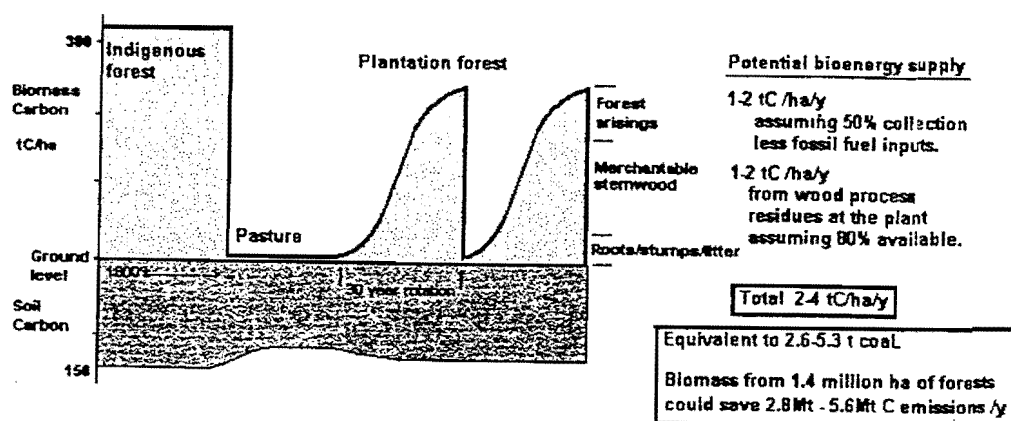
On the initiative of the Biomass Network of New Zealand supported by EECA, Murray Ward of the Ministry for the Environment was recently invited to present the New Zealand carbon policy at a Wellington seminar. He outlined the argument for forests to be included as carbon sinks to the BNNZ members and foresters present, which will be presented by the Minister in Kyoto. In response, the opportunities for carbon mitigation using biomass and bioenergy were covered by BNNZ representatives.

(continued on page 8)

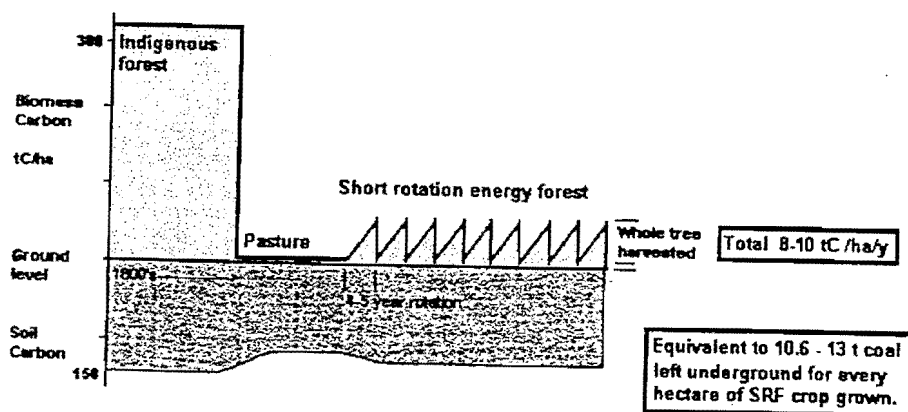
Murray illustrated a carbon budget over five year periods based on gross CO<sub>2</sub> emissions, net removal by forests, and the consequent emissions by difference released to the atmosphere. He made the point that if reference was rated to a historical base such as 1990, that mitigation based on net emissions would be a real disadvantage for New Zealand since deforesting countries would benefit. Using targets based solely on gross emissions would also be unfair. So he argued for the discrediting of absolute gross emissions but also for giving credit for absorption by absolute carbon stocks. He noted energy reduction measures would still be warranted.

Complicating factors include the varying time release of carbon from the wide range of wood products and also the question of whose inventory should be debited, the country which produced the trees (eg New Zealand), or the country which consumes them (eg Korea importing New Zealand logs)? This latter question also applies to oil exporting and importing countries.

The BNNZ presentation outlined how credit should be given for forest residues or other biomass resources where they are used to displace fossil fuels. Ralph Sims presented the varying roles of "Trees as Carbon Sinks" based on a seminar held at Massey University in 1994. He showed how biomass carbon levels per hectare of land had been affected when going from indigenous forests, to pasture, and then to plantation forests. (Note the diagram is only a simplified illustration).



Plantation forests could save the use of 2.6 – 5.3 t of coal / y for every hectare planted if the available forest arisings (left after stemwood harvest and extraction) and wood process residues (left after processing at the factory or port) were to be utilised for energy purposes. SRF if planted and harvested exclusively for energy could displace 10.6 – 13 t of coal for every hectare grown.



The needs for further R and D in woody bioenergy to help better understand the carbon opportunities were identified by George Hooper. He described the current collaborative FRST research project between the NZ Forest Research Institute, Coal Research Ltd, Massey and Lincoln universities on the characterisation and use of wood process residues and SRF. He then outlined the objectives of the follow-up research proposal submitted to FRST by a similar group which included evaluations of forest arisings, municipal green waste and gasification technologies. It is supported by an industry consortium. He noted that the EECA/CAE 1996 report *New and Emerging Renewable Energy Opportunities* showed that biomass already



contributes around 30PJ (5%) of New Zealand's primary energy supply and this is likely to double in the next ten years as the forest estate matures. Interestingly this exceeds the anticipated total contribution from all solar, wind and small (<10MW) hydro projects by a factor of ten.

Justin Ford-Robertson then outlined the IEA's activity on carbon sequestration and showed that 1 tonne of C recycled in biomass avoids releasing 0.6 t of C locked up in fossil fuels. He described the NZ forest energy resource; the issues involved in its collection and utilisation; and identified the need for more research on CO<sub>2</sub> life cycle analysis. As a result of the seminar it was evident that a full understanding of how best to realise the benefits from using biomass energy supplies was yet to be developed. There is opportunity for the embryonic bioenergy industry to sense future energy constraints and look to further commercialise its role.

## ELECTRIC FUTURE

The Energy and Environmental Programme of the Royal Institute of International Affairs (RIIA) is pleased to announce the publication of ELECTRIC FUTURE: POINTERS AND POSSIBILITIES Working Papers on Transforming Electricity

It is the first publication from the RIIA project on the future of world electricity, led by Walt Patterson, Senior Research Fellow in the Energy and Environmental Programme and can be found on RIIA's Internet web site <www.riia.org>. This series of five papers appears exclusively on the Internet.

The titles are:

- Electricity: International Futures (WP1)
- Electricity: Liberal Futures (WP2)
- Electricity: Decentralized Futures (WP3)
- Electricity: Network Futures (WP4)
- Electricity: Business Futures (WP5)

WP1 is now available on the Internet, at <www.riia.org/eeppwp.html>. WP2 through WP5 will follow in sequence over the coming week and will be followed in 1998 by the full-length book TRANSFORMING ELECTRICITY by Walt Patterson

### ENERGYWATCH

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## RENEWABLE ENERGY INFORMATION LEAFLETS

EECA has recently published a series of leaflets on Renewable Energy topics aimed at answering general enquiries from students, schools, and interested members of the public. For each topic the 4 page leaflet provides a description of the latest technologies, the current status in New Zealand, environmental issues, and economic constraints to implementation. The topics are solar water heating; photovoltaics; waves, tidal and ocean currents; wind; biomass; woody biomass; energy crops; biogas and landfill gas; and small hydro power. The 10 leaflets are available at no charge from Geoff Kelly at EECA, Wellington (Ph. 04 470 2214).

## IF YOU ARE NOT CURRENTLY A MEMBER OF THE SUSTAINABLE ENERGY FORUM AND YOU WOULD LIKE TO JOIN:

- \$40 – INDIVIDUAL MEMBERSHIP
- \$10 – RETIRED, STUDENT, LOW INCOME EARNER
- \$800 – CORPORATE MEMBER- LARGE COMPANY
- \$200 – CORPORATE MEMBER SMALL COMPANY

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# NATIONAL LAND TRANSPORT STRATEGY- an update

As reported in the June 1997 edition of EnergyWatch, the Ministry of Transport (MoT) has been hosting a Transport Strategy Group (TSG) to develop a land transport strategy. The Ministry has now published a discussion document *National Land Transport Strategy Draft*. Submissions close on 19 December 1997.

Unfortunately there are some important differences between the TSG's document and the MoT draft. The TSG thrashed around with a mission statement as only a committee can, finally coming up with:

*Safe, sustainable land transport systems at reasonable cost, whereas the MoT version is: A land transport system that meets the demands of people, business and communities at reasonable cost.*

Not the same at all! The committee deliberately fudged the difference between needs and wants. The MoT version sounds like a road-builder's charter at a time when it is becoming more and more obvious that most road building is unsustainable in its appetite for funding; in creating social problems (noise, severance, deaths and injuries all increasing exponentially); and in use of non-renewable resources. Another difference is that one objective of the TSG was reduction of risk. A measurable target was: *People are protected from unreasonable risks imposed by others, both within and between land transport modes....*

This is an important sustainability issue because it requires roading authorities to provide reasonable protection (that is, protection at reasonable cost) to pedestrians and cyclists. The closest that the MoT

comes is to say that as long as society's willingness to pay for a risk reduction exceeds the costs, the risk reduction should be attempted. The difference would matter less if pedestrians had a clearer right to cross the road, or cyclists had rights

beyond being a slow and vulnerable vehicle in amongst fast and relatively invulnerable vehicles.

Also missing from the MoT document is the development of a safety culture; surely an essential element of effective risk reduction. Much of the TSG's work has entered the MoT document without too much change, but some of the differences remain disappointing.

*Kerry Wood, Transport Consultant,  
Wellington*

## SUSTAINABLE ENERGY TARGETS FOR AUSTRALIA

Australia's response to Climate Change revolves around Sustainable Energy initiatives

Prime Minister John Howard presented a policy document to parliament in late November which, although maintaining the "obligation to defend and protect Australian interests, jobs and industry" argued the need to play a role in the reduction in greenhouse gases.

Consequently an exciting \$A180 M package of new initiatives was announced which, as well as encouraging expanding existing energy efficiency measures, concentrated on new support for Renewables. This included \$A21 M venture capital towards a specialist Renewable Energy innovation investment fund; a \$A30 M loans and grants programme for commercialisation of the Renewables industry and creation of new jobs; and \$A10 M for some leading edge projects in areas of tidal power, solar thermal power and photovoltaics. In addition an ethanol from wood pilot plant is to be built.

A range of targets were also outlined such as a 15% transport fuel efficiency improvement and mandatory electricity purchase of an additional 2% of green electricity by retail companies by 2010.

Whilst still arguing for Australia to be given international dispensation to produce an increase in emissions, this package would at least reduce their growth from 28% to 18%. New Zealand could ultimately benefit from the technology development so should collaborate where appropriate.

# A STRATEGY AND ACTION PLAN FOR THE PROMOTION OF RENEWABLE ENERGY SOURCE

The European Commission has adopted a White Paper, which sets out a comprehensive Strategy and Action Plan. It is designed to achieve an ambitious but realistic goal of doubling from 6% to 12% the share of renewable energies in the total energy demand of the European Union by 2010. The benefits will be considerable in terms of CO<sub>2</sub> emission reductions, scientific and industrial development in a high technology sector, employment creation, avoided fuel costs, increased security of supply, local and regional development and exports to third countries. The strategy will involve the reinforcement of policies which will affect the penetration of renewable energies including agriculture and rural policy, the regional policy and internal market measures in the regulatory and fiscal areas. The strengthening of co-operation between Member States is proposed, as well as co-ordinated support measures to facilitate investment and enhance dissemination and information on renewable energy sources. An important element of the strategy and the action plan is the "Campaign for Take Off", involving the key photovoltaic, wind energy and biomass sectors, aiming towards a significant increase in renewables penetration in the market.

Commissioner Christos Papoutsis said: *"Today, we are sending a clear message that we are determined to follow an ambitious and realistic policy to promote the use of energy sources which enhance our security of supplies, contribute to the creation of jobs and help us protect the environment. It is important that Member States play their role in promoting renewables"*.

## The Strategy and Action Plan

A central aim of the Strategy and Action Plan is to ensure that the need to promote renewable energy sources is integrated in new policy initiatives, as well as in the full

implementation of a wide range of policies. These include: energy, environment, employment, taxation, competition, research, agriculture, regional, external relations policies and technological development and demonstration,

The Strategy and Action Plan aims to provide fair market opportunities for renewable energies without excessive financial burdens. It proposes a list of priority measures and actions aimed at overcoming obstacles and redressing the balance in favour of renewables. It also proposes better and fairer access of renewable energy generating electricity to the network market;

- fiscal and finance measures;
- new bioenergy initiatives for transport, heat and electricity (such as the promotion of biofuels, biogas and biomass); and
- improved building regulations to promote the use of renewables, by introducing solar energy for heating and cooling.

It proposes support measures, such as the targeted promotion, consumer informations, improved access to finance a renewables network of regions, islands and cities aiming at a 100% supply from renewables, and the twinning of cities, schools, farms, etc. using renewables.

## The Campaign for Take-off

In order to assist a large scale penetration of Renewables and make progress towards the objective of doubling their share by 2010, a coordinated campaign for a real take-off will be planned over a number of years in order to promote the implementation of large-scale projects.

Key actions of the campaign are as follows:

- Installation of 500,000 photovoltaic roof and facade systems in the domestic market (schools, public buildings and tourism, sport and recreational facilities).
- An export initiative for 500,000 village solar systems to help start decentralisation in developing countries. The total investment is estimated at 3,000 million for the period 1997-2010.
- The installation of large wind farms, 10,000 MW, in locations with favourable conditions. The wind farms will represent 25% of the feasible overall wind energy penetration by 2010. The total investment for the period until 2010 is estimated to be in the order of \$10,000 million.
- Biomass installations for combined heat and power plants, which will range in scale from a few hundred kW to 30-40MW and will combine different technologies. These bioenergy installations, totalling 10,000MW will represent 1/6 of the total estimated contribution which biomass could make by 2010, for a total cost of \$5,000 million.
- The integration of Renewables in 100 communities, in order to use these energies in integrated systems for local power supply or in dispersed schemes for regional power supply. A number of pilot communities, regions, cities and islands will be selected from those which can reasonably aim at 100% power supply from Renewables. The cost of this could be in the order of \$2,500 million.

#### Cost and benefits

For the period 1997-2010, the net investment to implement the Strategy and Action Plan is estimated at \$95,000 million, leading to the creation of a significant number of new jobs and the saving of a total of \$21,000 million in fuel costs. CO<sub>2</sub> emissions are estimated to be reduced by 402 million tonnes/year by 2010. Another important economic benefit is the potential growth of the European renewable energy technologies industry in international markets. European industry in this field is second to none in its ability to provide the equipment and technical, financial and planning services required for market growth. The Strategy and

Action Plan will be flexible and updated over time in the light of the experience gained and new developments.

## KYOTO AND THE NEW ENERGY OPTIONS

SEF convenor Ken Piddington recently visited the USA to contribute to the Aspen Round Table on Energy and Environment; visit the Energy and Environment Centre at Princeton University and attend a conference on Ecologically and Socially sustainable Development at World Bank headquarters. A four page report is available on request but the key points are:

- The scientific debate on climate change is accepted;
- Industries including oil majors now have more flexible views on climate change, as has the insurance industry for some years;
- Investors are supporting getting new energy technologies into the market place;
- Financial mechanisms to achieve this have many new ideas and it could be timely for SEF to target financial experts in New Zealand on risk management of new energy technologies;
- Developing a credible action plan for reducing greenhouse gas emissions internationally is receiving much attention.

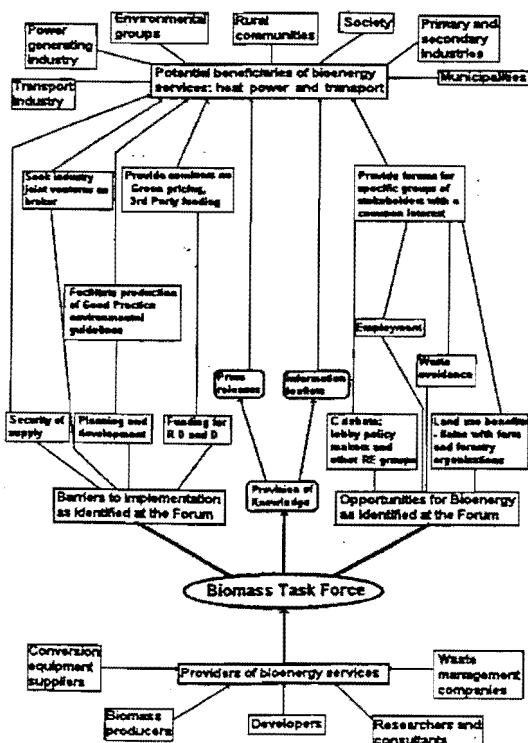
Ken summarises: "At no time since SEF was set up has it been more important to consider a strategic approach to future energy options for New Zealand."

"instead of basing our position at Kyoto as an assessment of threats, we should identify the *opportunities* which could generate – for employment, technological innovation and economic partnership in the Asia-Pacific region. Following the Kyoto conference we should then develop a strategy which will allow us to seize the opportunities with or without a Kyoto Protocol."

## AUSTRALIAN BIOMASS TASKFORCE

An industry seminar was held in early November in Canberra to help develop a strategic plan for the newly established Biomass Taskforce managed by Dr Stephen Schuck and funded by the Energy Research and Development Corporation along with other stakeholders.

Following presentation of five projects funded by ERDC, a workshop was held involving the 40+ industry delegates present. The resulting strategy outline developed by the NZ moderator, Ralph Sims, is shown below.



An outline of the anticipated benefits resulting from Australia joining the IEA Bioenergy Agreement was given by Dr Schuck from whom proceedings can be obtained.

### SPONSORSHIP OF THIS ISSUE

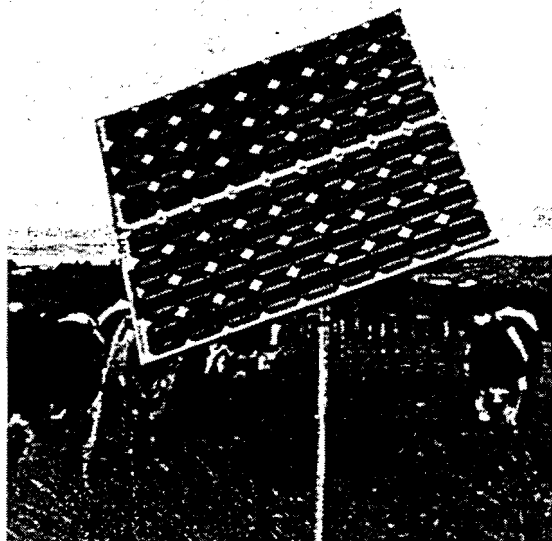
Unfortunately no sponsor had been secured by the time of publication in spite of strenuous efforts. Massey University is acknowledged for its support and SEF will provide the essential funding from its meagre reserves.

## PUBLIC POWER CAMPAIGN

Since deregulation and restructuring of the electricity industry has not benefited all consumers as originally promised, there is concern that further reforms will also fail to deliver either cheaper power to smaller consumers or encourage future "green energy" developments. As a result Molly Melhuish is leading a campaign to support public ownership of electricity assets; oppose the proposed further split of ECNZ; oppose new legislation to split power distribution into line and energy supply businesses and to lobby government accordingly. The fear is that power companies will only compete for the most profitable, high user contracts and that residential, small business and farmers will remain captive to their local monopoly power company.

SEF is one of several organisations supporting the campaign. Write to Public Power Campaign, PO Box 11152 Wellington for more information; or phone 04 473 0615; or fax 04 473 0613.

Solar powered cows?  
Learn more at the SEF  
conference at Massey!



**STOP PRESS****9<sup>th</sup> December 1997**

It was hoped that we would receive a summary of progress from SEF convenor Ken Piddington in Kyoto so this page had been saved accordingly. However we now need to go to the printers to disseminate the conference information. It seems Ken must be having trouble receiving and sending back information electronically from Japan. So we will have to wait for the SEF conference at Massey University in February to learn the details from him.

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The Convenor and Committee members of SEF take this opportunity to wish all Energy watchers a very Merry Christmas and look forward to 1998 being the year for Sustainable Energy.  
See you at the Massey conference

**THE SUSTAINABLE ENERGY FORUM****MASSEY  
UNIVERSITY**