



# EnergyWatch

*The Journal of the Sustainable Energy Forum*

“Facilitating the use of energy for economic, environmental and social sustainability”

ISSN 1173-5449

Issue 16, September 2000

Published by the Sustainable Energy Forum Inc, P O Box 11 152, Wellington

E-mail sefi@actrix.gen.nz

Editor: Kerry Wood

---

## What if?

### What if:

- The competition model is ultimately shown to be inappropriate for the electricity market in a country of less than 5, 10 or 50 million people?
- The Microsoft Syndrome is so dominant that collusion will always remain the preferred route to market dominance?
- The tax incentive for oil and gas exploration were available for capital investments in renewable energy?
- And for research?
- Or removed altogether from the fossil sector and transferred to renewable energy stakeholders?

### And what if:

- The Government implemented the Caygill recommendation that embedded generators should be paid the cost of avoided transmission, on the basis of arithmetic to be provided by the NZWEA and SEF?
- And used the mirror trust recommendation to enable trusts to become lead investors in embedded generation from non-fossil carbon?
- With the cap of 5 MW / 5% of local market then lifted?
- Or removed altogether, on the grounds that it has no logic?

### Further down the road, one might ask what if:

- The Government adopted Factor Four improvements as a goal?
- Then applied this to new automotive technology through incentives for import / assembly / registration of Hypercars?
- And penalized imports of old technology by requiring the life cycle carbon emissions to be taxed on the date of first registration in NZ?

### So that, when it comes to implementing the Kyoto Protocol commitment in 8 years time, we can also ask what if:

- All government activities and decisions became subject to a Kyoto audit, for consistency with the GHG reduction objective?
- And private sector stakeholders were asked to adopt the same criteria?
- With EECA able to disclose responses, publish the names of good corporate citizens?
- Perhaps also the names of the others?

Ken Piddington

Ralph Sims has been appointed to the EECA Board and has resigned as SEF Convenor because of a conflict of interest. He remains a member of the Forum. More details on pages 14 and 15.

Ralph: “We don’t want to lose you but we think you ought to go.” Best wishes, keep in touch.

EW

# Amory Lovins in New Zealand

## Making sense *and* making money

Kerry Wood

An Amory Lovins' presentation is hard to summarise: brilliant, inspiring, detailed, sparkling. Facts, quotes and ideas tumble over one another. The only brief and comprehensive summary possible is, "Read the book<sup>1</sup>."

Lovins' thesis is that improving energy efficiency and displacing carbon-based fuels is usually seen as a cost. This puts the focus onto business disadvantage and the reliability of the science. In fact energy efficiency is already profitable—often very profitable—but it is not happening. A major example comes from DuPont: their European plants face energy costs roughly twice as great as in North America, yet their European energy efficiency is much the same. Small companies on the other side of the world are no better; two examples from the *Target Zero* campaign in Christchurch are that bacon manufacturers Heller Tasty made a saving of \$ 11 000 a year for a 'capital' cost of \$ 100. They also saved 2.3 million litres of potable water a year (and themselves \$ 1640 in meter charges) by putting automatic shut-off valves on five hoses!

There are many barriers to making savings, and the best approach is to identify and dismantle them. The more important energy-savings strategies, with examples, are:

### Technology

*Improve end-use efficiency:*

Described by Lovins as the biggest prize of all. See the article on Hypercars opposite.

### Implementation

*Capital misallocation:*

Electricians use the thinnest safe wiring to reduce bid costs. Thicker wiring could (in the US) give a 169% after-tax return.

*Regulatory failures:*

Utilities are rewarded for selling more energy, and penalised for making energy savings.

*Informational failures:*

How much energy does *your* fridge use?

<sup>1</sup> Hawken, P, Lovins, L and Lovins, LH (1999). *Natural capitalism: creating the next industrial revolution*. New York: Little Brown & Co, ISBN 0 316 35316 7

*Value-chain risks:*

If they don't make (or stock) it, how can you buy it?

*Perverse incentives:*

The landlord pays for roof insulation but the tenant benefits.

*False or absent price signals:*

NZ has roading externalities of \$ 2.5 billion a year.

### Policy

*Barrier busting:*

Making sure the technology is understood and the implementation barriers are removed.

*Price signals:*

Surprisingly, these are not much help, except to kick-start other changes.

In contrast to Lovins' examples, some energy-use models find extremely high costs for energy savings. His explanation is that this is what they have assumed, and he attributes to Einstein the dictum that *problems cannot be solved within the mind-set that created them*. An example he gives is abatement of sulphur emissions in the US: in 1990, predicted abatement costs were \$ 250-350 a tonne by environmentalists, and \$ 1000-1500 by industry. By 1996 the market price was \$ 66.

Many of Lovins' solutions fall into two categories:

*Dump the myths:*

Climate-science uncertainties don't matter: profits dictate the same actions anyway. The greatest profits (and other benefits) will come from early action.

*Break down the barriers to energy efficiency:*

Methods include: appliance efficiency ratings; Building Codes; business practices; the Caygill report; education; the EECA awards; Electrical Regulations; eliminating inappropriate or unintended subsidies; the Energy Efficiency Act; roading design for safe cycling and walking; taxation reform; and tenancy legislation. Even price signals may have a part to play. And a great many other measures will be identified as the barrier-busting process gains momentum.

*Amory Lovins' visit to Wellington was coordinated by the Parliamentary Commissioner for the Environment. His Wellington lecture was arranged by the Energy Management Association and the Energy Efficiency and Conservation Authority (EECA).*

# The Hypercar and New Zealand

Kerry Wood

The Hypercar is a concept for a hyper-efficient car, developed by Amory Lovins and the Rocky Mountain Institute. They are not available commercially, but Car magazine has already ranked him the 22nd most powerful person in the global automotive industry. As Lovins puts it, "the Hypercar is putting the fear of Adam Smith," into the industry. Some US\$ 5 billion has been committed to development, by several manufacturers of conventional vehicles and potential power sources. Lovins' current prediction is that Hypercars will be on the market by 2005 and dominant by 2010. He illustrates the scope for improvement by pointing out that only about 1% of the fuel energy consumed by a typical present-day car is used to move the driver: Another 15-20% moves the car and the rest is lost. Hypercar fuel consumption is expected to be four to eight times lower than for an equivalent late-twentieth century car.

Clearly, the Hypercar is different: so different that New Zealand manufacture is a real possibility; not just uneconomic assembly from imported kits. This would help to reduce carbon dioxide emissions but also provide jobs; save foreign exchange (both vehicles and fuel); encourage technology transfer; and perhaps boost exports.

We may need the Hypercar. We seem to be heading towards a balance-of-payments crunch when the Maui gasfield closes in around 2010 (*and we report on page 16 a large drop in indigenous production: EW*). Closure will affect condensate feedstock to the Marsden Point refinery, and loss of gas feedstock will may end production of ethanol at Waitara and synthetic petrol at Motonui. In the mean time transport fuel use is growing at 2-3% a year. At current prices and under a business-as-usual scenario the effect will be to worsen NZ's balance of payments by perhaps \$ 1.5 billion a year for petroleum and another \$M 700 a year for vehicle imports. Presumably, new petroleum production will partially offset these figures, but it also presents another danger: too much local production may allow us to live in our fool's paradise for a bit longer, and make our energy crunch later but even bigger.

## The Hypercar concept

The concept the Hypercar is to reduce weight, drag and rolling resistance as much as possible. Instead

of focusing mainly on increasing the efficiency of the engine and drive train, the focus is also on reducing the energy that the drive train needs to supply. A key feature is the body, which is made from polymer composites, like a Grand Prix racing car or an America's Cup yacht. Composites combine lightness with strength in a way not obtainable with other materials. Safety is not compromised, as demonstrated by drivers surviving motor racing crashes at far higher speeds than on the roads. At present a composite body is much more expensive than a steel one, but for a Hypercar the difference is small, or might even favour composites:

- The extremely high capital cost of panel-forming dies and presses for a steel body is avoided.
- Large-scale use of high-cost materials will bring down the price.
- No painting is needed: the colour is in the outermost polymer layer.
- There is no body corrosion, so body life is indefinite and reusing old bodies in new vehicles is practicable.

A composite body makes streamlining of the underside of the car much easier, reducing drag, and new tyre designs reduce rolling resistance. Much of the improvement is achieved by 'compounding' the savings: for example, a lighter body can use a lighter engine, transmission, suspension, tyres—and a smaller fuel tank.

A first step towards a true Hypercar is the Toyota Prius, already in production and being evaluated for the New Zealand market. It retains the steel body and petrol engine of conventional technology, but uses a hybrid mechanical/electric drive to double fuel efficiency. The engine drives a generator, which in turn drives the wheels through electric motors. A battery absorbs excess power when demand is low, or gives a boost when high power is wanted. This allows a smaller and lighter engine. It is also more efficient: it can be optimised for average conditions because it does not have to meet maximum power demands.

Hypercars can use conventional engines, or even a gas turbine, but the preferred option is a fuel-cell, producing electricity with no moving parts and no noise. A great deal of effort is going into developing them for car use. They can use a range of liquid fuels, including alcohol from biomass—an attractive option from a Kyoto Protocol viewpoint. The ultimate fuel is hydrogen,

which allows a fuel cell to produce only electricity and hot water.

### **New Zealand manufacture**

Small-plant production of Hypercars is justifiable or even preferable; it minimises inventory and run-out problems. The very high capital costs for tooling-up a conventional plant are avoided, and the materials can be easily imported—or made locally. Hypercars have high capital costs for development (although this will fall as the technologies are developed), but low costs for setting up production. Labour costs are higher than for conventional car plants. The result is that New Zealand manufacture is a real possibility, without either subsidies or tariffs, although a tax-break for efficient vehicles might be justified.

The potential advantages of New Zealand manufacture of Hypercars include:

- Early introduction to the market—instead of late introduction as conventional cars are dumped here—contributing directly to emission reductions.
- Foreign exchange savings.
- Jobs created locally.
- Comparatively easy introduction, in a small country with rapid take-up of new technologies and already available skills in using composites for boat-building.
- Early production offers the possibility of spin-off development or manufacturing for export. Electronics and composite fabrication could be key areas here.

### **Costs and risks**

Costs and risks are unknown, but may well be lower than they seem. Plant costs are low, market size is adequate and many skills are already available. (Remember that staying with conventional technology is not risk-free either: another manufacturer—or country—might produce Hypercars)

A known risk of Hypercars is that they will reduce driving costs, thus encouraging congestion. Other measures will be needed to offset this problem, such as using land use planning to encourage what Lovins calls ‘negatrips’.

It seems to be worth a look.

## **Amory Lovins on Markets**

From *Natural Capitalism*

‘Natural Capitalism’ includes the following notes on the assumptions of market economics and their limitations:

- 1 *All participants have perfect information about the future*  
Perfect information about the future? If anyone had it, he or she’d be barred from elections or stock markets—and probably not given any credence by the rest of us.
- 2 *There is perfect competition*  
Competition is so imperfect that exceptional profits are commonly earned by exploiting either one’s own oligopolistic power or other’s oversights, omissions and mistakes.
- 3 *Prices are absolutely accurate and up to date*  
Markets know everything about prices and nothing about costs.
- 4 *Price signals completely reflect every cost to society: there are no externalities*  
Most harm to natural capital isn’t priced, and the best things in life are priceless.
- 5 *There is no monopoly (sole seller)*  
No monopolies? Microsoft, airline’s fortress hubs and your managed health-care come close (including ACC?)
- 6 *There is no monopsony (sole buyer)*  
No monopsonies? Consider your utility, the peanut Marketing Board and the Federal Aviation Administration.
- 7 *No individual transaction can move the market, affecting wider price patterns*  
No market-movers? What about Warren Buffet and the Hunt Brothers?
- 8 *No resource is unemployed or underemployed*  
Thirty percent of the world’s people have no work or too little work. (Economists justify this by calling them ‘unemployable’—at least at the wages they seek)
- 9 *There is absolutely nothing that can’t be readily bought and sold (no unmarketed assets)—not even, as science-fiction author Robert Heinman put it, “A Senator’s robes with the Senator inside.”*  
Most of the natural capital on which all life depends can be destroyed but neither bought nor sold.  
Many drugs are bought and sold in a pretty

effective free market, but doing either can jail you for life.

- 10 *Any deal can be done without 'friction' (no transaction costs)*  
The hassle factor is the main reason that many things worth doing don't get done.
- 11 *All deals are instantaneous (no transaction lags)*  
Does your insurance company always reimburse your medical bills promptly? Does your credit-card company credit your payments immediately?
- 12 *No subsidies or other distortions exist*  
Worldwide subsidies exceed \$NZ 3 trillion annually. For example, the US's 1972 Mining Act sells mineral-bearing public land for as little as \$ 2.50 an acre and charges no royalties.
- 13 *No barriers to market entry or exit exist*  
It is hard to start up the next Microsoft, Boeing or GM—or to get out of tobacco.
- 14 *There is no regulation*  
The world's regulations, put on a bookshelf, would extend for miles.
- 15 *There is no taxation (or if there is, it doesn't distort resource allocations in any way)*  
The Internal Revenue code exists.
- 16 *All investments are completely divisible and fungible—they can be traded and exchanged in sufficiently uniform and standardised chunks*  
You can't buy a single grape at the supermarket, nor an old-fashioned front porch in most housing developments.
- 17 *At the appropriate risk-adjusted interest rate, unlimited capital is available to everyone*  
Many people are redlined, must resort to loan sharks, or have no access to capital at any price.
- 18 *Everyone is motivated solely by maximising personal 'utility,' often measured by wealth or income*  
So why does anyone fall in love, do good or have kids, and why do three-fifths of Americans attend weekly worship services?

The mind-set of the present capitalist system might be summarised as follows:

- Economic progress can best occur in the free-market systems of production and distribution where reinvested profits make labour and capital increasingly productive.

- Competitive advantage is gained where bigger, more efficient plants manufacture more products for sale to expanding markets.
- Growth in total output (GDP) maximises human wellbeing.
- Concerns for a healthy environment are important but must be balanced against the requirements of economic growth, if a high standard of living is to be maintained.
- Free enterprise and market forces will allocate people and resources to their highest and best uses.

## SustainableEnergy e-mail group

Paid-up Forum members on e-mail should have received an invitation to join the SustainableEnergy group, an email group hosted by eGroups. Membership is free to SEF members.

The group is intended to allow members to post items of interest on sustainable energy related issues to all other members. However we do not want this facility abused, and it must not be used for spam or junk.

Members who give us an e-mail address will be invited to join as they renew membership. If you have not been invited, check whether you have paid, or give us your e-mail address, or e-mail <sefi@atrix.gen.nz> if we have slipped up.

You have to choose to be listed and you can unsubscribe at any time.

If you have any concerns please email Ian Shearer at SEF, on <sefi@atrix.gen.nz>

Ian Shearer for SEF

**SPECIAL NOTE FROM eGroups:**  
Because eGroups values your privacy, it is a violation of our service rules for moderators to abuse our invitation service. If you feel this has happened, please notify us at [abuse@egroups.com](mailto:abuse@egroups.com)

# The Government's transport strategy

*An edited version of Minister of Transport Mark Gosche's speech to the Bus and Coach Association in mid-July. Bracketed numbers refer to the commentary on page 8.*

This Government wants to build a sustainable transport system. By that we mean a system:

- In which passengers, workers and those coming into contact with transport operations can expect a high level of personal safety.
- That meets the needs of its customers, in a timely and cost effective manner.
- In which investors and shareholders can expect a reasonable return on their investments.
- That carefully manages its impacts on our air, water and land resources.
- That provides both mobility and accessibility opportunities to all those who live in the society in which it operates.

None of these goals can exist in isolation. We must balance the interests of safety, customer needs, investment, the environment and equity.

## Safety

Our most immediate task is to improve our road safety record, which is well below the best results achieved by similar countries. From early next year, 225 extra police officers will be working exclusively on road safety on the State Highways. These officers will staff the new Highway Patrol, which is designed to provide a high profile police presence on the most highly used part of the road system. Other short-term measures include:

- More money to community road safety initiatives, with particular emphasis on initiatives coming from the Maori and Pacific Island communities.
- Additional resources for breath testing campaigns, especially in rural areas.
- Tighter tolerances in speed limit enforcement.
- Joining the Australian road vehicle crash test programme, so that consumers can have a

better understanding of the safety record of vehicles they buy.

We are also considering a long term road safety strategy, to 2010, which I plan to release for discussion soon. Two key questions will be:

*What do we want the road toll to be in ten years' time?*

If we adopt world best practice as our goal, then we are looking at a reduction from just over 500 deaths a year to 280. (1)

*How do we achieve our chosen road safety goal?*

Possible options range from substantial increases in enforcement standards and activity through enhanced and improved education programmes to a massive programme of road rebuilding and improved ways of managing road infrastructure. Each option has its costs, both social and financial, and I will be seeking wide community input before setting a long term direction.

## Delivering services

The Government wants to see a commercial transport sector that is innovative in delivering products and services, responsive to its clients, and competitive. We want to see investment in the future, to support future growth.

The aviation, maritime, rail and road transport sectors are an important element in economic growth. This Government wants to support their success, and sees no need for further fundamental changes to the structure of these sectors. (2)

It is a different story on our roads, which are becoming inadequate for their task. The most visible sign is the traffic congestion in our major cities—one estimate is that Auckland's congestion alone costs some \$ 800 million a year.

Road traffic in New Zealand is growing at 4% a year, equivalent to doubling in 18 years. Some regional networks are having difficulty keeping pace with the demands of a growing and changing economy and society—dairying in Southland, forestry in Marlborough and tourism in Coromandel or Northland put pressures on our roads that local communities struggle to meet. The need to upgrade and enlarge our road system is evident, yet some of our systems for road charging are reaching their limits.

## Road infrastructure solutions

Many people believe that we need better ways of charging for road use, and new management

structures. I believe that there is a consensus for progress this year in three main areas:

- Put in place systems to manage the external impacts of the roads, including improving safety and environmental management and our public transport system. Road corridors are for a wide variety of users, including pedestrians and cyclists. They, just as much as motorists, have a right to use road corridors in safety. (3)
- Look at charging for roads. New technology allows us to consider a wider range of options within the present Road User Charges system. We also need to consider whether the present funding system can be made simpler, while retaining its basic principle of cost effectiveness.
- Consider whether management structures can be improved, without generating any more of the upheavals that have characterised reforms in the past.

It is not just a matter of a few high profile road projects. We need a management package that leads us to sensible investment and management decisions without the constant air of impending crisis that too often seems to characterise land transport investment. I believe that we have an excellent opportunity to do that this year.

### **Environment**

New Zealand relies heavily on its 'clean green' image. Improving the reality to match the image is a high priority, and the transport sector will play an important part. Before the end of this year, we expect to put in place new emission standards for all vehicles arriving in New Zealand for the first time. We need to make sure that all imported vehicles—new or used—meet the best international practice for air emissions. We are also working on new rules to govern smoky road vehicles. We need to review those sections of the Resource Management Act that deal with land transport. I can see no valid reason why roads and railways should be exempt from the air emissions requirements of that Act.

We are moving to improve public passenger transport in our major cities, recognising that an important benefit of such an improvement can be a reduction in vehicle emissions.

### **Kyoto Protocol**

The Government has decided to ratify the Kyoto Protocol in 2002. Currently the transport sector generates about 15% of New Zealand's total

greenhouse gas emissions, mainly carbon dioxide, so we are going to have to make a serious effort to improve road vehicle fuel efficiency.

We need to ensure that our vehicle fleet reflects the latest propulsion technologies as soon as they are available. We will also have to make a major effort to reduce traffic congestion in our major cities. Congestion is not only expensive in terms of slow deliveries or lengthy travel times—it is also our most inefficient use of fuel. If we reduce congestion we not only get a more efficient economy—we also reduce the emission impacts on the environment and cut the production of greenhouse gases. (4) (5)

### **Social equity**

Transport is about accessibility as well as mobility. If the system excludes significant numbers of New Zealanders from access to social and economic opportunities, then it is unsustainable. Freight transport generally provides an appropriate service throughout New Zealand, but passenger transport does not. We are second only to the United States in terms of cars per person. Yet we often forget that many New Zealanders still rely on a public transport system that has been running down for the last fifty years. We have to have a better public transport system. I have already announced a series of immediate improvement measures: (6)

- The artificial limits on public transport spending have been abolished.
- From October this year, we will pay Regional Councils in direct proportion to the patronage of public transport in their region. At this stage it seems likely that there will one rate for off peak passengers and another for peak travel.
- Transfund New Zealand is reviewing the financial assistance given to Regional Councils.

We estimate that if Regional Councils seize these opportunities, passenger transport funding from the National Roothing Programme will rise from \$46 million last year to \$93 million in 2003, with large benefits in terms of accessibility in our major cities. There are major accessibility issues in our large cities which I want to see tackled as soon as possible and I want both Regional Councils and operators to see this as a major opportunity for action. (7)

The Government is also reviewing the future of other elements of passenger transport funding, including the Total Mobility scheme. I am

particularly concerned that we focus on the actual needs of people in society. Taxis and shuttles provide a crucial door to door service service to many in our community, in a way that buses, trains and ferries will never be able to do. I want to ensure that we make better use of such services.

## Conclusion

If the transport sector is to support a positive future for New Zealand, then we have to work towards a sustainable system. We are committed to the complex exercise of uniting all the elements into a comprehensive package that sets a clear path for the whole transport sector. We will have to set long term directions for safety, environmental performance and accessibility. It will emphasise that the core issues of investment and innovation will depend on a commercially focused transport and distribution sector that will thrive by providing high quality service to all its users.

There is a lot to do. I firmly believe that change is necessary in a number of key areas in the transport sector. I also believe that any change must be progressive rather than an upheaval, and that evolutionary change can only work if people talk to each other to find pragmatic solutions.

## Comments on Mark Gosche's speech

Kerry Wood

*Paragraph numbers refer to the bracketed numbers against paragraphs in the Transport Minister Mark Gosche's speech, above.*

1 The Minister is helpful in drawing attention to our very poor crash record, but makes the mistake of focusing on the 'road toll'. This sanitises the problem in two ways: by abstracting the reality of road crashes—which are very largely caused by bad driving—and by aggregating deaths and injuries. Would an intelligent Martian guess from the safety measures in our cities that over a quarter of the urban 'road toll' is to pedestrians? Or that cycle helmets are only designed for a fall of 1.5 m, equivalent to an impact speed of 20 km/h? They should be called 'bump caps,' not crash helmets.

A more helpful approach would be to look at road user's risk. This would reveal, for example, that a teenager has a lower cost of risk—on a kilometre basis—when riding a cycle than when driving a car.

2 Exempting air and road freight transport from 'fundamental change' might be too

generous—depending on what is thought to be fundamental. Taxation of aviation fuels, for example, or 3% annual growth in road energy use. Another problem which might hide behind the word 'fundamental' is massive and systematic undercharging for road use, including pollution costs, capital charges, congestion, 'free' parking and perhaps crash costs. More accurate charging would encourage road freight transfer to rail or coastal shipping, or pipeline, with substantially lower energy use. It might also slow the drift of industry to Auckland: centralised 'just in time' manufacturing tends to look more efficient than it really is, because it assumes underpriced transport.

3 Stating that all road users deserve equal rights is an excellent principle—but implementation will be more difficult!

4 This looks like a welcome nod towards the Hypercar: see page 3.

5 Gosche seems to have been sold the argument that *reducing congestion will protect the environment*. This assumes that faster traffic will have no effect on traffic levels, land use or public transport use: in other words, that traffic demand is independent of price (which includes travel time). Really? Possibly the worst thing that Gosche could do would be to reform decision-making and funding (with provision for borrowing against future income), while allowing this dangerous canard to stand. Another symptom that he has bought into the argument is the reference to annual congestion costs of \$ 800 million in Auckland, with the implication that this justifies road building. Comparison with other cities suggests that the potential savings are even bigger than this, but that they will not be achieved by more aggressive pursuit of the same failed policies.

6 In urban planning the more usual meaning of 'accessibility' is that destinations can be reached without a car, not that they cannot be reached because no car is available. To miss the difference is to misunderstand the role of public transport.

7 Gosche says that public transport can reduce total emissions (and presumably also traffic: top of page 7), but then gives the opposite impression by discussing it under the heading *social equity*. Public transport is the most promising key to reducing New Zealand's very high urban transport costs, but not while it is seen as a crutch for people too poor to travel in the usual and proper way—by single-occupant car on permanently uncongested streets.



## Global warming makes sea levels fall

Global warming may be raising sea levels in the rest of the world, but the waters of the Mediterranean are falling—and fast. New research shows the Mediterranean has lowered by about three to five centimetres in the past 40 years. Dr Michael Tsimplis, of the Southampton Oceanography Centre, UK, says different climate effects and dam building are increasing the salinity of the water. This makes its density go up and its volume go down. Tsimplis said: “The fall is in the range of one to 1.4 millimetres per year,” which has returned the sea to levels not seen since the early 19th century.

The research is based on data from tide-gauge stations. There are less than ten stations in the Mediterranean with long and reliable records, and most of these are in the north west of the region and the north Adriatic. Different land movements on either side of the sea also complicate the data. Nevertheless, Tsimplis says, the downward trend is clear. “It is even more dramatic if one considers the control stations which are located in the Atlantic and the Black Sea. The Black Sea continues to go up by approximately 2 mm a year and the Atlantic still goes up by 1.2 mm a year.”

Tsimplis believes the North Atlantic Oscillation may be at play. This is a natural and recurring pressure pattern that has a profound impact on the weather experienced in the North Atlantic region and surrounding continents. He says this could have led to increased evaporation over the Mediterranean area, which in turn increased the salinity of the water. More dam building in the region after 1960, which has reduced the amount of fresh water running into the sea, may also have exacerbated the trend.

BBC/New Scientist

## Energy efficiency boost to the Building Code

Energy Minister Pete Hodgson has announced changes to the building code to improve the energy efficiency of New Zealand houses and commercial buildings.

Hodgson said the changes to the code will help reduce the national demand for energy, defer the need for new energy generation capacity and reduce greenhouse gas emissions.

“The new requirements will generate energy cost savings of around \$ 800 000 from new houses built each year, and these savings will increase annually,” Hodgson said. “The savings would be up to \$400 a year per house.”

The building code sets mandatory minimum performance standards for new construction. The changes are to clause H1 of the code, which deals with energy efficiency issues. Currently 20% of new homes are still being built to the old energy-inefficient 1977 standard. Key changes to the clause will:

- Improve minimum insulation levels in houses in cooler areas of the country; the South Island and the central North Island volcanic plateau.
- Introduce specific limits on heat loss and lighting energy levels for commercial buildings
- Set maximum heat loss requirements for storage water heaters and pipe work in new domestic hot water systems.

“The slight increase in cost from meeting the new insulation standards is more than offset by savings in heating costs,” Hodgson said. “Add to that the value of extra comfort and warmth and this is an investment that will rapidly pay for itself.”

In commercial buildings there are unlikely to be any significant effects on capital costs. Any extra costs for insulation are expected to be more than off-set by the improved lighting design requirement which—on average—will reduce the number of light fittings installed.

There will be a six month lead-in period before new buildings must comply with the new clause H1, although builders will be encouraged to comply earlier.

EECA and the Building Industry Authority will run information and education seminars over the next six months to brief the building industry and local authorities on the changes and their implications.

EECA will also be developing and promoting measures for best practice above the ‘acceptable minimum’ standards of clause H1.

Newsroom

# Local government and climate change

The Local Government and Environment Committee of Parliament has decided to conduct an inquiry into the role of local government in meeting New Zealand's climate change target.

The terms of reference are:

In conducting its inquiry, the committee will examine:

- The contribution local government can make to reducing greenhouse gas emissions through the exercise of planning and regulatory functions, and also through its own actions, with regard to matters such as:
  - land use and subdivision consents
  - biodiversity conservation
  - transport planning and traffic management
  - operation of vehicles
  - building consent processing
  - management of buildings
  - water and waste water
  - landfill management and waste management generally.
- Any obstacles to local government playing this role, including:
  - legislative impediments in the above areas
  - information co-ordination problems at local government level, for example the appropriate roles of regional and territorial authorities in relation to land use and transportation issues
- Any central government actions that could:
  - assist local government in its role in reducing greenhouse gas emissions, including whether there is need for a national policy statement or guidelines or standards under the Resource Management Act 1991, or other legislative change, or other policy initiatives
  - improve co-ordination and synergies between central and local government efforts to reduce greenhouse gas emissions.

# Its Kyoto time again

*This article is based mainly on a position statement prepared by the EU Greens coalition in Strasbourg, looking forward to the COP-6 conference. It was kindly provided by Gianluca Solera of the European Greens, who visited New Zealand in August.*

In November 2000, the sixth Conference of the Parties to the United National Framework Convention on Climate Change will be held in The Hague. Thankfully, there is an acronym: CoP-6. It is hoped that CoP-6 will clear the final barriers to the European Union (EU) ratifying the Kyoto Protocol. However, if no agreement is reached there is a real danger that the protocol will fail.

During the last two years of negotiations on the protocol three blocks have emerged, with opposing policy positions and different interests. This is in part due to the lack of rules and the remaining uncertainties over the interpretation of the rules within the protocol. CoP-6 will need a constructive dialogue between these three blocks:

## **First block:**

The USA and their allies (Canada, Australia, Norway, NZ and Japan) are asking developing countries on their own to start domestic emission reduction measures. This block wants to minimise the role of domestic measures, such as energy-efficiency requirements for buildings, and maximise the opportunity for international measures, such as carbon dioxide trading, where one country with excessive emissions buys the right to pollute from a country with low emissions. The US particularly wants to take full advantage of the possibility of tradable emission rights, and is investigating sequestration methods such as pumping liquid carbon dioxide into old oil fields. Japan has just announced its intention to achieve more than half of its emission reduction by forest sequestration.

## **Second block:**

The EU (and the future accession countries from Central and Eastern Europe) is prepared to to implement an active climate policy and achieve the target of an 8% reduction by 2010. The Union wants to use trading measures such as emission rights for no more than half of the reduction needed. The other half will be met by domestic measures. The EU aims to use fossil-free energy sources and has set up programmes to promote renewable energy and to achieve a higher degree of energy efficiency. The EU also encourages a

number of developing countries (Argentina and Mexico) to volunteer for emission reductions.

### Third block:

The developing countries refuse to reduce their emissions because of the perceived effects on their own economic development (*maybe somebody should read Natural Capitalism: see page 2—EW*). These countries are afraid of the overwhelming emphasis placed by the USA on the so called flexible mechanisms (see below). China and India are also arguing strongly for equity. This ideal is strongly opposed by the United States. On the other side, the flexible mechanisms of the Kyoto Protocol could also become an opportunity for the developing countries to attract investments on new technologies.

The EU will have a special responsibility in The Hague, if a sensible compromise is to be reached: CoP-6 will be under the French Presidency and with the Netherlands as a host. A compromise proposal—as seen by the EU Greens—might be:

- The first world blocks pay full attention to domestic measures, mainly in the fields of renewable energy, energy efficiency and transport.
- Nuclear energy and large hydro are not included in the framework of the flexible mechanisms or other mechanisms for reductions in emissions.
- As a second step, when the protocol is renegotiated in 2012, developing countries should agree on emissions reductions, based on the equity principle (see below).

The EU also needs to take a leading role over bringing the protocol into force. This will need ratification by at least 55 independent countries—including developing countries—together producing at least 55% of global emissions. The second requirement makes the EU, USA and Japan so dominant that at least two of them must ratify before the treaty comes into force. At present, only 22 countries have ratified; mostly Pacific island states, like Fiji, Tuvalu and Palau, that will be hit by the first rise in sea levels.

If the EU agrees to ratify, on the basis of CoP-6, it may also be able to persuade the Russian Federation, the Ukraine, the accession countries (EU wanabees) and Japan. Such a grouping may also include countries like Argentina, Kazakstan, Costa Rica, South-Korea, Mexico and Brazil, as these countries have announced their intention to play a leading role in the coming negotiations. This

group is responsible for 57.5% of carbon dioxide emissions—enough to bring the protocol into force. It is expected that this will be during the Rio Plus 10 conference in 2002.

### Equity

Industrialised countries, especially the USA, believe that greenhouse gas reductions have to be achieved by every country, including developing countries. Developing countries completely disagree with this point of view because of the fear that their economic development would be blocked. Some figures illustrate the problem: annual carbon dioxide emissions per head of population are 2.2 tonnes in China, 11 t in The Netherlands and 24 t in the USA, but to stabilise atmospheric levels needs a world average of 1.7 t. To achieve a sustainable average emission level, American society has to reduce emissions by 93%, while many developing countries should be allowed to increase their emissions. Developing countries do not want to pay for a problem that is mainly caused by Northern countries. The negotiations show that only some developing countries (like Mexico and Argentina) are prepared to accept reduction commitments. However, the figures show that even China already exceeds the sustainable maximum, so it is obvious that developing countries should accept commitments for reductions after 2012.

### Flexible mechanisms

The problem of reducing emissions has stimulated some innovative solutions. Broadly, all use the same idea: that a country can meet its own reduction targets by financing reduced emissions in another country. Typical costs of reducing carbon dioxide are about ten times lower in developing countries than in the EU, and twenty times lower than in the US. In principle these instruments are defensible, provided that the equity principle is used. If this is not the case, then these instruments can be considered as a neo-colonial policy towards the transition and developing countries, through which inequality would increase. The rules for the application of the flexible mechanisms have to be clearly defined at CoP-6, including the difficult issues of monitoring of emissions and the control of emission trading.

*(New Scientist for 26 August describes forest sequestration as a 'cheat's charter' that could make the Kyoto Protocol unworkable. It points out that "annual carbon fluxes between the biosphere and the atmosphere over Russia are roughly ten times as large as human emissions."*

*(Details on [www.iiasa.ac.at](http://www.iiasa.ac.at) EW)*

## Time for changes in Japanese energy policy

Putting pressure on the government's commitment to nuclear power, electric power companies have begun to say the economics of nuclear power stations just don't justify more stations. This new position adds to a growing list of factors that have brought the nation's atomic energy policy to a major turning point. Until recently, the power companies toed the line on government policy. Now the challenges to that policy are growing. For one, the myth of nuclear power safety has crumbled because of the disastrous Tokaimura nuclear accident in Ibaraki Prefecture. At the same time, the difficulty of acquiring land for new nuclear power stations is growing.

Germany, meanwhile, has decided to phase out nuclear power altogether. Other European countries are also reducing their reliance on nuclear power.

The Japanese power firms' change of heart apparently accompanied the liberalization of the power industry in late March. The liberalization took the form of giving corporations other than power companies the right to sell electricity to major consumers. With that, the power firms—long protected by regional monopolies—were forced into an era of competition.

The result is that they can no longer hope for a significant increase in sales. To beat out their rivals, they will have to reduce costs. Building a 1000 MW nuclear power reactor would take a massive investment of 300 - 400 billion yen (NZ\$ 6 - 8 billion) and would be a major factor pushing up costs.

Also stacking up against nuclear power is the fear of accidents. For these reasons, differences of opinion have been growing between the power firms and the Ministry of International Trade and Industry (MITI), the ministry primarily responsible for promoting nuclear power. Last December, MITI released its estimates showing that nuclear power is the most economical form of generating electricity, even when the costs of reprocessing spent nuclear fuel and disposing of radioactive waste are factored in.

According to the estimates, nuclear power costs NZ 12 c/kWh, compared to 13 c for electricity from coal, 121 c from crude oil, and 28 c for hydroelectric power. The power companies openly objected to these estimates. One reason was that

MITI had extended the life of a nuclear power reactor from 16 years to 40, without factoring in the extra costs of repairs.

"You start reaping the economic benefits of nuclear power 10-20 years after putting a reactor into operation," said an executive at a power company, "but the age of free competition has made it unaffordable for us to think that far ahead." Also missing from the MITI estimate was the generous public financial assistance that goes to sparsely populated areas where most nuclear power stations are located. The heavy spending, ostensibly for local economic development, has been the price paid by the government and power firms to secure consent for new nuclear power stations.

Thanks, in large part, to this 'purchased consent,' nuclear power has grown to account for one-third of the nation's power supply. Most of the money comes from a special account designed to finance 'measures to promote the development of power sources.' About 20 different kinds of grants and subsidies are paid out from the special account to local governments. Their names are so confusing there is no telling exactly what it is the money is for. It seems that their use is entirely at the discretion of MITI officials, making it difficult for anyone outside the ministry to check on the propriety of the program.

As its revenue source, the special account is funded by a 'tax for promoting the development of power sources,' collected through a surcharge of about 2% on electricity bills. The fact that it is collected along with electricity rates—unlike the consumption tax—makes it difficult for taxpayers to sense the burden.

Liberalization of the power industry is expected to spur small-scale power generation in areas where electricity is in heavy demand. If nuclear power is replaced with electricity from fossil fuels, carbon dioxide emissions will increase. Studies have been initiated to introduce a carbon tax or environmental protection tax, but a review of the existing 2% surcharge is essential before asking people to pay a new tax. The time has come to change the direction of the nation's energy policy on the basis of wide-ranging Diet discussion, instead of allowing it to remain under the stewardship of MITI.

Asahi Shimbun

## September 21 is International Car-Free Day: Where is the USA?

JH Crawford

Except for Boulder, Colorado, the USA is observing International Carfree Day by ignoring it. While more than 700 cities around the globe are observing, even celebrating, International Carfree Day, the USA and Canada are studiously ignoring it, even in the face of skyrocketing oil prices and grave concerns about energy supplies for the coming winter.

The future for continued automobility on the scale to which we have grown accustomed is not rosy. Oil production is not ever going to increase substantially above its current very high level, yet demand is continuing to rise even in the face of concerns about global warming caused by the burning of fossil fuels. We are now at the peak of global oil production, or so close to it as not to matter.

A carfree day gives the public a chance to witness the changes that occur in a city when the traffic disappears. The improvement in the quality of life that follows heavy urban traffic is a large gain, one that more than offsets the loss of convenience of being able to drive everywhere. Public transport can easily replace the lost mobility, and can do it at social, ecological, and economic costs that are far lower than even the current low cost of driving.

Given that we are eventually going to have to reduce our level of driving anyway, the carfree day is a wonderful opportunity to show the public the good effects that this will bring. The sooner we start making the change to carfree cities, the longer we will have to accomplish this difficult task, and the less painful will be the economic dislocations that are going to follow the end of cheap oil.

Why, then, has the USA simply decided not to join International Carfree Day?

*(EnergyWatch was tempted to substitute 'NZ' for 'USA' in this article, but in the end printed it unedited)*

For more information on carfree cities, visit <http://www.carfree.com/> See also *Carfree Cities* by JH Crawford (International Books, 2000)

## Emission cuts will not hurt the Canadian economy

Tackling the climate-change problem will only result in a minor cooling of what is expected to be a red-hot economy over the next 10 years, two new studies prepared for the Canadian federal government have found. The two reports—one by the Department of Finance, the other by Ottawa-based think tank Informetrica Ltd—concluded that slashing the country's greenhouse gas emissions will shave around 0.6 - 3% from a gross domestic product that is expected to grow roughly 30% in the next decade. Overhauling the economy to meet Canada's target of a 6% reduction in greenhouse gas emissions from 1990 levels by 2010 will provide an initial economic stimulus as money is spent on new technology, the studies say, but will retard growth in the long run. Some industries, specifically those in the resource sector, will be hit disproportionately hard.

However, Informetrica (which predicts a larger economic slowdown than the Finance study) concludes that in the long run, cutting emissions will have "little negative effect" on economic output for real incomes or the country as a whole. The numbers are some of the most optimistic produced to measure the impact of what federal cabinet documents refer to as "the greatest economic challenge since the Second World War." The reports are also seen as two of the most significant and comprehensive studies produced.

The studies—based on analyses of 16 stakeholder group reports conducted over the past two years—are some of the final numbers Ottawa will look at before deciding its negotiating position for the November climate-change summit in The Hague.

The two studies—especially the Finance Department's, which suggests Canada could achieve a 31% cut in emissions by 2010 while losing only 0.6% of GDP—give ammunition to those who say Canada should cast its lot at The Hague with the EU, rather than the United States. The macroeconomic figures, however, hide some grim news for specific sectors of the Canadian economy. Informetrica predicts a 4 - 8% hit for the resources sector, with the coal industry taking the brunt of the blow. "The coal industry is the one industry that unambiguously faces a dim future. The size of the industry is reduced by from one-third to one-half" by 2015, the report reads.

Alan Johnson, president of the Coal Association of Canada, dismissed Informetrica's report as out of touch with the reality that more than half of all

electricity in the United States is generated by coal. He also said the report doesn't take into account that a zero-emission coal is being developed, although it may not be in place to meet the Kyoto deadlines, which he says are arbitrary.

Globe and Mail, Canada

*(Does anybody know what zero-emission coal is? — it sounds a bit like a zero-conflict war. Maybe they will use the ash to fertilise a carbon-sink forest? More (or less) plausible suggestions are welcome. EW)*

## Electricity trading in Germany

Germany will introduce by next July an electricity trading system to encourage the use of relatively clean co-generation. The system sets a minimum amount of electricity that grid operators must buy from CHP producers, starting at 12% of their total purchase and increasing to 20-25% by 2010. Grid operators with under or over-filled quotas will be able to buy and sell voucher-like certificates on the stock market.

This new action follows the passing of the Cogeneration Law on May 18, to protect existing CHP plants from competition by setting a minimum price of 0.09 marks/kWh (NZ\$ 0.09) for electricity from the plants, which is above market levels. Local suppliers can recoup 0.03 marks/kWh from the minimum price from grid operators, decreasing to zero by 2004. The association representing municipal utilities VKU backs the quota system as a means of precluding this decrease. Germany has around 16 GW of installed CHP capacity, 12% of total electricity production.

But the associations representing grid operators VdV and the umbrella association for electricity suppliers VDEW say the cogeneration plan is anti-competitive. The cogeneration law follows one on electricity produced from renewable energy passed earlier in the year, that targets a 12% market share for such electricity by 2010. "The consequence (of both laws) will be that one third of Germany's electricity production—some 170 tWh—is regulated by a subsidy," VdV Managing Director Friedrich Kienle told Reuters.

Reuters

## New EECA Board Announced

On August 10, Energy Minister Pete Hodgson announced the appointment of eight members to make up the Energy Efficiency and Conservation Authority (EECA):

- Mr Mike Underhill (Chairperson) is chief executive of WEL Energy Group and a former executive director of TransAlta NZ. He has had 28 years experience in most aspects of the electricity and gas industries. He has served on the advisory board of EECA since October 1995. He has taken an active part in the energy reform process including being a member of the original Government Electricity Task Force. He has a keen interest in energy efficiency and chaired the Centre for Advanced Engineering multi-disciplinary task force on energy efficiency. Mr Underhill has qualifications in engineering and commerce.
- Ms Geraldine Baumann (Deputy chairperson) is a consultant for Bell Gully Buddle Weir. She has a strong legal, and commercial background in the energy industry. She is a past company secretary and legal advisor to Transpower NZ and ECNZ, and was a solicitor and policy advisor at the Ministry of Energy. She has been involved in regulatory reform of the electricity industry, providing advice to the government on changes to the Electricity Act 1968, Electricity Reform Act 1998 and the SOE Act 1986. Ms Baumann has extensive experience working with government in particular with the Parliamentary Counsel Office and Select Committees.
- Ms Judy Bischoff is a farmer and permaculture expert in Waiuku, South Auckland, an environmental consultant, and a director of EnviroWaste Services Ltd. She was elected to the Auckland Regional Services Trust in 1995 and then served on Infrastructure Auckland. She has a background in community organizations and public sector governance and management.
- Dr Pare Keiha is an associate professor and head of the Faculty of Maori Development at the Auckland University of Technology. He is a director of Metro Water Ltd, Waitemata Health Ltd and Auckland City Holdings Ltd. His business experience covers strategic and business planning, project planning and marketing. He holds degrees in Chemistry,

Chemical Engineering, Business Administration and Commercial Law. His tribal affiliations lie with the principal tribes of Tauranga.

- Mr Gerard Ryan is a professional electrical engineer, and currently a senior consultant at Power Systems Group, Beca Carter Hollings & Ferner Ltd. He has worked as a consultant for Design Power New Zealand Ltd and has undertaken work for Parsons Brinkerhoff, Genesis and Power Solutions.
- Mr Ralph Sims is an associate professor at Massey University, the Director of the Centre for Energy Research and an expert in renewable energy. His work has received international recognition (in particular by the Inter-Governmental Panel on Climate Change) and he has well established links with the NZ science community. He has consulted internationally on renewable energy to clients including Shell International and the Australian Greenhouse Office. He is also Convenor of the Sustainable Energy Forum.  
*(Unfortunately that should now read 'was convenor' – see Ralph's note on the next page EW)*
- Mr Richard Thompson is a resources and environmental consultant. He has qualifications in horticulture and business, and provides environmental, social policy and strategic planning consultancy services. He is the president of the Ecologic Foundation (formerly the Maruia Society). He has served on the advisory board of EECA since November 1995. His experience with energy and environmental issues includes advising on ECNZ's Home Energy Rating Options scheme and membership of the Cement Industry Energy Management Association. Mr Thompson was recently appointed to the Waste Minimisation and Management Working Group, a joint initiative of the Ministry for the Environment and Local Government New Zealand.
- Dr Jan Wright is a researcher on energy efficiency, who undertook seminal work on supply curves of conserved energy in California and New Zealand. She has a PhD in Public Policy from Harvard University and a Masters degree in Energy and Resources from the University of California, Berkeley. She has extensive experience in projects for government agencies.

Mr Hodgson said there had been a good response to the public call for nominations, and he was extremely pleased with the quality of the

nominees. The strategy to be developed by the Authority will be the first step to getting New Zealanders to think about how to get more out of our energy resources and the way we use them in our homes, offices, farms and factories.

#### **Ralph Sims adds:**

It is certainly with mixed feelings, that I confess that I was indeed nominated for the EECA Board and have recently learned I have been appointed as one of the six new Board members, along with Mike Underhill (Chair) and Richard Thompson from the previous Board.

Obviously I am pleased to be given the opportunity to take on this role, and will certainly give it 'my best shot'. Initially we will all be closely involved with nurturing the forthcoming National Energy Efficiency and Conservation Strategy and the consultation process that goes with it. This will be a challenge in itself in order to meet the tight deadlines as well as to bring industry along with it.

Unfortunately the Board appointment does produce one or two conflicts of interest that I had declared prior to appointment. A major one is the Convenor's role for SEF from which I must therefore resign as of 10 August 2000.

This is particularly disappointing as I have not really been able to contribute anything much during the last 6 months (though I did state this would be the case at the time of nomination). So Ken, thank you very much for continuing to carry the load over that period. I will continue to be a member of SEF of course and look forward to continuing the liaison and friendships with all of you. I am sure that I will be staying in close touch with all the SEF colleagues through the NEECS consultation process.

I wish SEF continuing success in driving down the barriers to a sustainable energy future for New Zealand.

Ralph Sims

#### **John Blakeley**

As EnergyWatch went to press, John Blakeley accepted the Management Committee's nomination to be co-opted as Convenor, at the committee meeting on 22 September. John said that while he was honoured and delighted to accept the challenge, he expressed some doubts about working from outside Wellington (Christchurch at present, Auckland later in the year), and it was agreed that committee responsibilities can be revisited as needed.

# National Energy Efficiency Strategy Workshops

EECA, in conjunction with MfE, is preparing the draft of the Government's first national energy efficiency and conservation strategy—as mandated under the new Energy Efficiency and Conservation Act (2000). The draft strategy will be released for public submissions in April 2001.

They are running a series of workshops—free of charge—in October, to develop input to the draft strategy. This is your opportunity to:

- Comment on sectoral issues.
- Give your views on what the scope of the strategy should be.
- Suggest priorities for areas to focus on to improve energy efficiency, energy conservation and renewable energy in New Zealand.

An agenda and background paper will be e-mailed to those who are registered ten days before each workshop.

These documents and further information on the national strategy will be updated regularly on the EECA website:

<http://www.eeca.govt.nz>  
(follow the Strategy signpost).

You can also input to the strategy by sending your views by email, to [strategy@eeca.govt.nz](mailto:strategy@eeca.govt.nz)

Please register to: [strategy@eeca.govt.nz](mailto:strategy@eeca.govt.nz)  
to attend the relevant workshop(s)

**Energy Supply** 4 October 2000  
Wellington, Copthorne Plimmer Towers

**Transport** 11 October 2000  
Wellington, Copthorne Plimmer Towers

**Industry and Commerce** 18 October 2000  
Auckland, Waipuna Conference Centre

**Community & Household** 19 October 2000  
Auckland, Waipuna Conference Centre

**Community & Household** 25 October 2000  
Christchurch, Copthorne Durham St

Please identify yourself as a member of the Forum if you attend any of these meetings.

## NZ energy use

New Zealand's total energy use and fossil fuel consumption are still growing steadily. The latest Energy Data File shows that:

- Total energy consumption increased by 0.7% in calendar 1999 to 438.4 petajoules. Over the past ten calendar years (1990 to 1999) consumption growth has averaged 1.7% a year. Primary energy supply has grown by an average of 3.1% a year over the same period.
- Total petrol consumption in the year to March 2000 increased by 2.4%. Consumption of fuel oil and diesel also increased, while consumption of aviation fuel and LPG decreased.
- Net crude oil imports in the year to March 2000 increased by 25% on the previous year, while NZ production decreased by 18%. New Zealand's self-sufficiency in oil declined to 36% from 44% the preceding year.
- Coal production in the year to March 2000 was 3.6 million tonnes, an increase of 8.8% on the previous year. Consumption increased by 8.4%.
- New Zealand gas production in the year to March 2000 rose by 7.5%, with 75% coming from the Maui field. About 41% was used for petrochemical production, 41% for electricity generation and 18% for commercial and domestic purposes.
- National average electricity prices the year to March 1999 were 1.4% less in real terms than for March year 1998. This came from decreases in real average electricity prices for residential users (2.1%) and commercial users (3.7%), offset by an increase in prices (1.2%) for industrial customers. (More recent price increases for domestic consumers are not included in the data).

Mr Hodgson said the statistics showed the new Government faced a major task in making New Zealand more energy efficient, with less reliance on fossil fuels. "In the past decade, and particularly the last two or three years, almost all energy statistics have been heading in the wrong direction. We are becoming more reliant on fossil fuels and the growth in use of transport fuels is significant."



## Emissions taxes fail to control transport energy use

Pollution from greenhouse gases generated by UK road transport rose by 9% between 1991 and 1998, despite a sharp rise in fuel taxes, introduced to help combat pollution. According to the Office for National Statistics, overall national emissions of greenhouse gases fell by 7% over the period, due to a fall in emissions from business and industry, especially electricity generation. Greenhouse gas emissions from households remained roughly constant. But emissions from road transport rose steadily, despite a doubling in fuel taxes between 1991 and 1998. Over the period, total road traffic grew by 11.6%, suggesting that there was only a small improvement in the overall fuel-efficiency of vehicles. Motoring bodies said the figures showed that rising fuel taxes were a poor way of controlling pollution. Road vehicles account for 17% of Britain's greenhouse emissions.

However, Chris Hewett of the Institute for Public Policy Research argued that without the fuel tax 'escalator' the rise in emissions might have been even higher. "The long-term policy of any government has to be to slowly increase the real cost of motoring," he said. "If the price of oil falls, then the heat will go out of the argument, and the government may be able to raise taxes again."

Financial Times

## Government response to the Electricity Inquiry

Government's intentions on electricity regulation have finally appeared in print, and confirm our worst concerns—that self-regulation may be left to 'govern' the industry—with networks, generation, and retail all coming under the same umbrella.

The report said fixed charges should be no more than 25% of a power bill of an 8000 kWh/year consumer; double the actual figure last year. Already the industry has begun its response—TransAlta has hiked fixed charges beyond the 25% guideline, and in Waitemata very small households will now pay an energy charge three times as high as very large households. Industry pressure for deregulation and high fixed charges is being pitted against Labour's commitment to low fixed charges and environmental sustainability. The likely outcome of this struggle is not clear.

At last, lobbying effort seems worth while. The Campaign's stance is:

- A much tighter 'cap' on fixed charges.
- An electricity industry regulator, to cover both lines and retail companies, though this does not necessarily mean prescriptive price regulation.
- Extensive disclosure of retail and network information.
- And above all, no self-regulation.

Please write to Pete Hodgson, Minister of Energy, or to your Members of Parliament, in support of equitable electricity pricing, and regulation in the public interest.

Power for our Future

## Letter to the editor

Dear Sir,

I had a nice letter from TransAlta this week, which told me that my electricity tariff was being restructured. My daily charge will go up by 85% and my unit charge will fall 26%. I am told that this better reflects the real costs. For me, with a large family, this will typically result in a 10% lower electricity bill, which must be good news. Isn't it? The other good news for me is that it provides all the incentive I need to put off indefinitely those energy saving projects, such as solar water heating and extra insulation. After all, their pay-back period has just increased by one third!

But what of the longer term advantages of energy saving? you say. Looking at the bigger picture of electricity generation in New Zealand, it is obvious that the greatest part of the costs of electricity supply relate to capital investment not operating costs. Therefore, following the logic of passing on real costs, I can expect the split between daily charge and unit charge to keep shifting further towards paying more for the provision of the essential service and less for direct consumption. Hence even more incentive to avoid getting on with those good energy saving projects.

But what about conserving resources? you say. Don't worry. Those nice people from TransAlta have an energy efficiency service with lots of helpful tips like filling my jug from the cold tap and checking thermostats. Their web site also tells me how much it costs to run my appliances; or at least, how much it would have cost me had they not just reduced their unit prices!

Yours sincerely

The Switched-On Kiwi

# Mini-Whats

## German PV Incentives

The combination of Germany's 100 000 solar roof programme, and new renewable energy law guaranteeing high feed-in rates for solar energy, has proved a potent mix, with the authorities overwhelmed by applications for loans for solar installations. according to reports, in the last two days of April lone applications received amounted to 20 MW of PV—about a fifth of this year's total projected European production, and twice as high as the demand that as being projected (a few months ago) for Germany for the whole of 2000. the incentives (intended as models for others elsewhere) are clearly having the desired effect, by creating demand for solar electricity and thus—it is hoped—stimulating further industrial growth, leading eventually to lower prices.

Renewable Energy World

## Target Zero

Christchurch City Council have set up a 'Target Zero Club' under the slogan *sustaining business and the environment*. They are putting out a monthly newsletter and arranging meetings. For example the April meeting was on *Product and process design for the environment* and *Eco-design and eco-labelling*. The newsletter gives web sites for these topics, [www.cfd.rmit.edu.au](http://www.cfd.rmit.edu.au) and [www.ianz.govt.nz](http://www.ianz.govt.nz). The Target Zero contact is [catherine.webb@ccc.govt.nz](mailto:catherine.webb@ccc.govt.nz).

## Transmission Gully

Wellington Regional Council is strongly supporting a new motorway in Transmission Gully, to bypass some 27 km the existing Highway 1 from McKay's Crossing to Tawa, and Wellington's *Evening Post* is running a major campaign in support. But...

- Why do all the options studied include the road whose viability is being tested, thus excluding the option of improving the existing road?
- How can the combination of a new road and an improved rail service result in fewer commuters?
- Why does the 'enhanced' rail option include light rail to some very unlikely places? (it is usually not viable if it replaces less than 60 buses an hour)
- Why have the benefits of building the road been counted twice—once as benefits to road users, and again as tolls and petrol tax? (Tolls and petrol tax are not a benefit in themselves: they are a benefit transfer from users, to compensate the road builders for

building a road that does not meet the usual economic criteria)

- Why go to the expense of collecting tolls, and then take part of the money from a regional petrol tax—paid by all drivers, whether they use Transmission Gully or not?
- Why is the *Evening Post* 'shroud waving,' when most crashes are caused by bad driving, and the existing road will still carry most of the existing traffic after Transmission Gully is built? (A congested road *increases* safety by forcing traffic to slow down)
- In a natural disaster, what will be the benefit of a road built along a major active fault line?

With these features in the analysis is it any wonder that the energy-hungry road option wins?

## Well, that's one way of sequestering it

New air-conditioning systems are being developed which use carbon dioxide as the working fluid. A century ago it was the refrigerant of choice, before it was replaced by man-made, ozone-damaging chemicals. Carbon dioxide is promising for systems that must be small and light-weight, such as automotive or portable air conditioners. Another advantage is that maintenance and repair is easy, because there is no need to use special equipment to recover the working fluid. More details at: <http://news.uns.purdue.edu/html4ever/0007.Gro11.CO2.html>

## Free accommodation

## Free accommodation

## Free accommodation

Free accommodation offered in exchange for help on rural small holding. You need a renewable energy interest. Suitable for a person who wants to "go bush." Send a note including a phone number to Peter Pinder, RD 5 Wellsford.

## SEF Policy papers

We have just published the first of an occasional series of policy papers:

*Sustainable options for transport policy development* by Kerry Wood

Copies are available from the Forum: send a stamped, addressed envelope to Box 11 152. Donations are optional.

Papers in this series will focus on sustainable energy issues, but do not necessarily represent the views of the Forum.

# Feedback

We don't get much feedback on EnergyWatch. This might be because you are totally satisfied; totally frustrated; don't read it; don't understand it; the dog chewed the bit with our address on it; or that your response somehow never got to the top of your priority list. Whatever the reason, now is your chance. What subjects do you find most interesting? least interesting? missing entirely?

We suggest ticks or crosses to show your approval or disapproval (more than one if you like), or use the blank spaces for a more open-ended response. Feel free to alter questions or write on the back.

## What subject areas should we cover?

- Bio-energy \_\_\_\_\_
- Carbon trading \_\_\_\_\_
- Climate change \_\_\_\_\_
- Electricity Reform \_\_\_\_\_
- Environment \_\_\_\_\_
- Greenwash and other hype \_\_\_\_\_
- Legislation and government \_\_\_\_\_
- Markets and market failure \_\_\_\_\_
- Monitor and reference articles \_\_\_\_\_
- Opinion \_\_\_\_\_
- Photovoltaics \_\_\_\_\_
- SEF Conference reports \_\_\_\_\_
- Sustainability \_\_\_\_\_
- Transport \_\_\_\_\_
- Wind energy \_\_\_\_\_
- Mini-Whats \_\_\_\_\_
- Watt else? \_\_\_\_\_

---

---

## What are we doing right/wrong (please say which!)

---

---

---

---

---

---

---

---

---

---

## Any suggestions (or offers) for articles?

---

---

---

---

## Anything else?

---

---

---

---

---

---

## Your name (optional)

---

Please mail to:  
EnergyWatch  
P O Box 11 152  
Wellington

(More on  
the back? \_\_\_\_\_)

## Forum Membership

Memberships are for the year ending 30 June and include at least four copies of EnergyWatch. Membership rates, including GST, are:

Unwaged/student	\$	22.50
Individual or Library	\$	45.00
Small corporate (less than 50 staff)	\$	250.00
Large corporate (more than 50 staff)	\$	900.00

Overseas rates: No unwaged/student rates, Individual/library rate \$NZ 55.00.

Mail the form opposite, with your payment or order, to Sustainable Energy Forum (Inc), P O Box 11 152, Wellington, New Zealand. A GST receipt or invoice will be sent on demand.

Cut or copy



Name: \_\_\_\_\_

Organisation: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_

H/W

E-mail: \_\_\_\_\_

Membership type: \_\_\_\_\_

Amount enclosed: \$ \_\_\_\_\_

SEF, P O Box 11 152, Wellington



EnergyWatch 15  
Return address P O Box 11 152 Wellington