

# EnergyWatch

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*"Facilitating the use of energy for economic, environmental and social sustainability"*

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## HOLIDAY EDITION

### Peak Chocolate

At Christmas time chocolate is consumed in vast quantities in all imaginable forms. This very versatile confectionery is a mainstay of gifts and novelties, particularly in the Northern hemisphere winter. The supply of chocolate depends on the crop of cocoa beans, which are grown in equatorial regions; primarily in Africa. However, the sustainability of cocoa farming is under great stress. The supply capability of the global cocoa industry and the demands of the global chocolate market are converging. One might call it a Chocolate Crunch.



As with any commodity, the market response to supply failing to match demand is an increase in price. What was a ubiquitous commodity becomes a high priced luxury. This is yet another example of the Peak Commodity syndrome.

When I rattle on to my wife about the dire consequences for our society of Peak Oil, Peak Gas etc. she tends to yawn and glaze over. She struggles to identify with the problem that is largely outside of her day to day experience. However, when I pointed out a press article about the problems of the global cocoa industry leading to the potential for a global shortage of chocolate in the future, her reaction was very different.

She was horrified by the idea of a world without an unlimited supply of real chocolate. The prospect of chocolate substitutes did not reassure her. The scenario of a world where chocolate is rationed (like in the post-war years) was unthinkable to her in the context of these days of plenty. Do those very different responses tell us something about how to engage ordinary people with the idea of the unsustainable nature of business-as-usual?

**The SEF management committee wish all SEF members and EnergyWatch readers a peaceful and enjoyable Christmas holiday and a sustainable New Year.**

In this issue we have perspectives on the inspirational Signs of Change e-conference, which gave us signs of hope to overcome the despair felt by many. This is a fitting theme for the Christmas season.

In this issue, we also include a guest article from Dave Kelly quantifying what we all suspect about the Kiwi's unsustainable relationship with his motor car.

There is discussion on the recent IEA World Energy Outlook report and the changing IEA position on Peak Oil.

Also check out the Wild Energy competition.

Finally for 2010, on a personal matter, I regret to advise you that my bid for election to the Northpower Electric Power Trust was unsuccessful. I was pleased to get strong support, but it was not enough to overcome the entrenched conservative element in the Whangarei electorate. I hope that the elected trustees will nonetheless recognise scope within the legitimate activities of a lines company to endow our infrastructure with more inventive ways to meet the needs of the community via distributed generation and smarter administration of electricity; perhaps with an NZ version of Feed-in Tariffs. ?

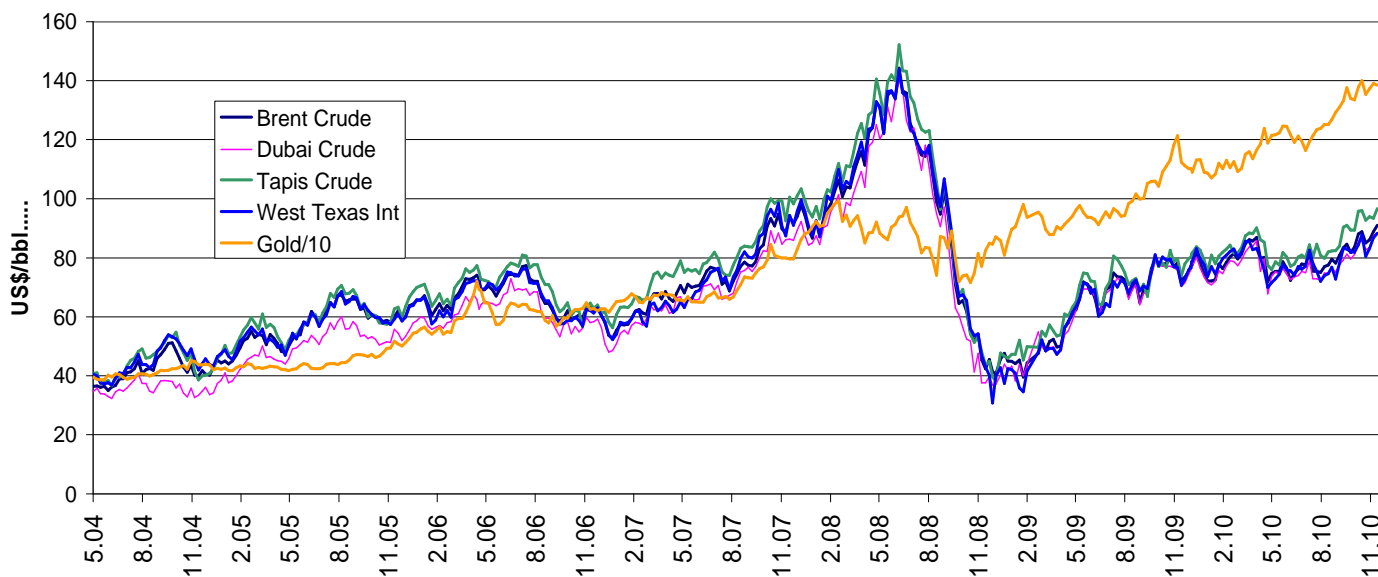
*Steve Goldthorpe, Editor*

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## Neil's Oil Price Chart

This chart, compiled by Neil Mander, tracks a basket of oil prices in comparison with the gold price. (Source NZ Herald). Over the last six month the oil price has increased from US\$72/barrel to over US\$80/barrel. In December it topped US\$90/barrel - attributed to a cold snap in Europe.



# Can we afford fuel-efficient cars?

by Dave Kelly, Canterbury University

EnergyWatch 58 had useful information about looming crises in energy supply and climate change. It suggested that we are “asleep at the wheel” in terms of responses, which sounds like a fair summary of the situation in New Zealand.



The Government seems to be inactive because (it says) it hopes that technology and individual choices will reduce CO<sub>2</sub> emissions generally, and transport emissions in particular, without regulation. Last year Transport Minister Steven Joyce abandoned work on national vehicle fleet fuel economy standards, saying that modern vehicles were becoming more efficient without intervention. It is also sometimes said that if too-stringent fuel economy standards are set, people won't be able to afford the cars, and the less well-off will suffer.

However it seemed to me these claims were not consistent with the data. This article reviews trends in fuel economy and asks

whether we can afford to convert to more fuel-efficient cars, or, more accurately, whether we can afford not to.

The first noteworthy point is that typical cars are not noticeably more fuel-efficient now than in the past. I collated information for popular “family” cars in New Zealand at about 15-year intervals since the 1930s. The cars since the Cortina are the best-selling car models for that year. I could not find sales figures before 1970 that but I know the Ford Anglia and the Morris 8 were common cars in their day.

In 2006 the most common model of car was essentially a three-way tie between the Corolla, the Commodore and the Ford Falcon (which is very similar in size to the Commodore), so I have biased the table downwards, by listing the most efficient of the three (Toyota Corolla). In 2009 the Commodore took the top spot, so I show that too. Note that the Commodore specs are for the least-powerful and most fuel-efficient model in the range (the least-efficient uses 14.5 L/100 km). Also note that top speeds are not really officially listed any more as they have all become ludicrously illegal.

Year	Car	Weight kg	Length m	Engine cc	Power kW	Top speed km/h	Litres/100 km
1935	Morris 8	790	3.65	920	22	93	8.1
1959	Ford Anglia	800	3.80	950	29	117	7.4
1976	Ford Cortina	1012	4.34	1600	54	148	10.8
1992	Toyota Corolla	1076	4.29	1600	84	188	7.8
2006	Toyota Corolla	1160	4.37	1800	93	195	7.5
2009	Holden Commodore	1696	4.89	3000	190	220	9.3

Obviously there have been major trends in cars, but these are to get bigger, heavier, and especially faster (more powerful). Fuel economy is either unchanged or a bit worse – the most fuel-efficient car in the table is the 1959 Anglia. So without regulation, technology will probably continue to create larger, faster cars, not more fuel efficient ones. Technological tricks that increase efficiency are not quite keeping up with the drain of more weight, more power-hungry accessories such as air conditioning, and more acceleration.

This is probably because people are getting richer (in relative terms), so they are using their extra wealth to buy a larger car. Any look at older cars shows that what was once thought a good sized family car would now be thought by many to be ridiculously small. A good example is the current BMW Mini (3.65 m, 1130 kg, 1400-1600 cc) which by modern standards is considered very small despite being substantially bigger than the original 1959 Mini (3.05 m long, 650 kg, 850 cc engine). And sports cars from the 1960s which were relatively fast then are often slower than today's modest commuter cars; let alone performance cars.

That might explain why people can afford ever-larger vehicles, but not why people want them. One possibility is perceived greater safety (of which more below). But given that most cars are used most of the time to commute to work with 1.5 passengers, it is hard to see why people value the greater size so much. Families are getting smaller, not larger, so we are probably not carrying more children. Perhaps it's just that big fast cars are well advertised, or that they appeal to some baser instinct. In any case, in New Zealand, technology alone is not giving us more fuel efficient vehicles.

The same trends – increasing weight and size, static or worsening fuel efficiency – are seen overseas anywhere that vehicle weights or

fuel efficiency are not subject to government regulation, as shown in an International Energy Agency report (IEA Information Paper by Takao Onoda, 2008, Review of International Policies for Vehicle Fuel Efficiency. ([www.iea.org/papers/2008/Vehicle\\_Fuel.pdf](http://www.iea.org/papers/2008/Vehicle_Fuel.pdf))) Onoda's paper includes graphs of trends in vehicle weight and fuel efficiency in Europe, the USA and Japan since 1980 and shows that the only decreases in mean weights occurred when regulations forced better fuel economy. This review concluded that voluntary measures have usually failed to meet their targets, whereas regulations can be very effective.

So if regulations forced higher fuel economy on the New Zealand vehicle fleet, would we be able to afford cars that met the standards? The example that may spring to mind is the hybrid petrol/electric car, which is reputed to be more fuel efficient but costs a lot more than the same sized non-hybrid car. But is this a general trend? To find out I used the data for all models of new car sold in New Zealand listed in the winter 2009 issue of the Automobile Association magazine. The result, in the Figure, is surprising. It shows that you have to SPEND more money to use more fuel (note that price is on a logarithmic scale). The cheapest cars are usually among the most fuel efficient, whereas expensive ones use more and more fuel (I left a Ferrari off the graph that costs over \$500,000 and uses more than 20 litres/100 km). For every one litre/100 km you save off the fuel consumption of an average car, the purchase price goes DOWN 15%. (For the statisticians among you, this relationship is highly significant).

So what we can see are two facts.

Firstly, people have been buying larger, faster vehicles with more accessories, so that fuel efficiency has been static or worsening, perhaps because people are getting richer.

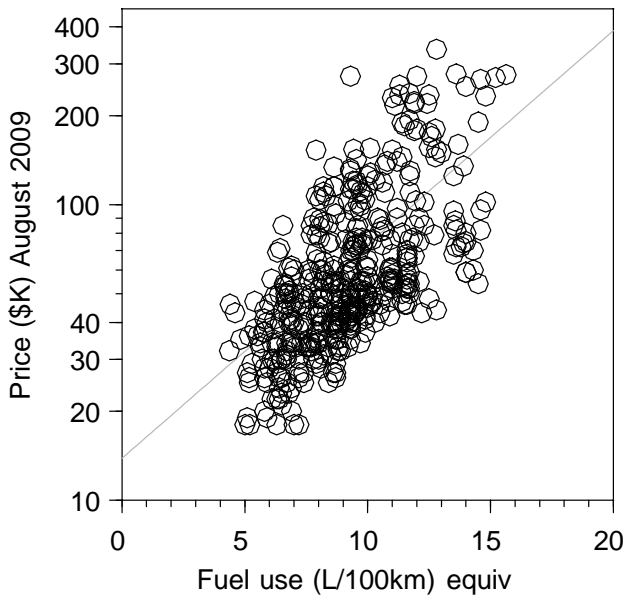


Figure 1. List price and ADR overall fuel economy ratings for 447 models of new car listed for sale in New Zealand in winter 2009. Note that these are “petrol-equivalent” litres/100 km ratings, i.e. to allow for the higher CO<sub>2</sub> emissions per litre of fuel used, diesel figures have been multiplied by 1.15.

Secondly, the issue is not that we can’t afford fuel-efficient vehicles, but that we value size and acceleration ahead of fuel efficiency. This is important, because it sounds much less noble to say “we can’t have more fuel efficient vehicles because we think it’s more important to have cars that are big and fast” than what the politicians have actually said, i.e. that “we can’t have more fuel efficient vehicles because the poor would be left unable to afford a vehicle”. It appears that for most people, fuel efficiency comes lower in the order of priorities than size, performance and price. Unfortunately, if you fix the size, performance and price of a car, the fuel economy is basically already determined too.

In fact, the question is not “can we afford fuel-efficient cars” but “how can we afford to go on buying such fuel-inefficient cars?” The Government’s inaction is clearly not based on

any evidence that market forces in the absence of regulation will produce greater fuel efficiency. And Government inaction is not because poorer people would suffer. It is because the Government don’t want to annoy people who prefer fast large vehicles and don’t care about fuel efficiency.

Thus, fuel use could be halved (halved!) if the “typical” Holden Commodore-type large saloon car (around 11 L/100 km, depending on model) was replaced with a highly efficient smaller (not “small”) car like a Honda Jazz (5.8 L/100 km). Both cars have five seats and a big boot. And you would save at least \$20,000 by shifting to the Honda. Mind you, I’d not like to be the person to suggest this to a Commodore owner, which does help to focus the mind on why we are not already buying very fuel efficient cars.

Interestingly, the Onoda report for the IEA examines whether reducing vehicle size (and weight) would be bad for safety. The report’s short answer is that the real problem is having a mix of vehicle sizes on the roads. Small cars can be quite safe if hit by another small car, but less so if hit by a large heavy one. So safety can be improved initially by concentrating on the outliers, i.e. reducing the mass of the largest vehicles like SUVs. (Not quite sure how heavy goods vehicles fit into this picture, but still). That allows both fuel economy and safety to be improved.

So the next time someone says we can’t afford to save fuel, ask how come we can so clearly afford to waste it right now on cars that are larger, and especially faster, than anyone logically needs.

Dave Kelly

Dave is a professor of ecology at the University of Canterbury, with a side interest in cars, technology, and human impacts on the environment.

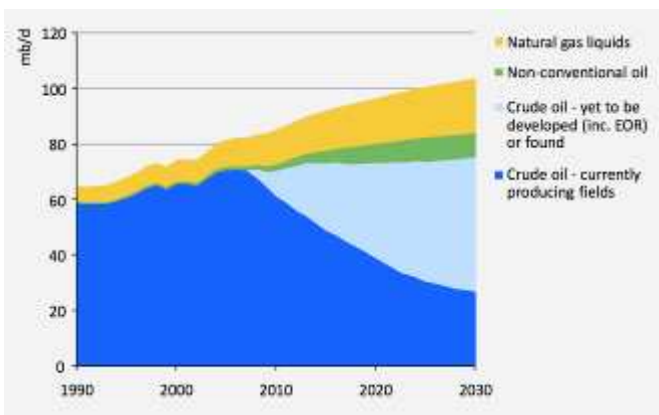
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# PEAK OIL

## IEA World Energy Outlook

SEF member Peter Olorenshaw compared the oil outlook from the recent IEA World Energy Outlook 2010 with a similar chart produced 2 years ago by the IEA. He observed that the current chart shows conventional crude oil production peaked in 2006 & 2008 has gone down from that now and the IEA suggests it will flat-line to 2035. He noted that the 2008 World Energy Outlook showed continually increasing crude oil production to 2030.

### IEA WEO 2008 Reference Scenario



*64 mb/d of gross capacity needs to be installed between 2007 & 2030 – six times the current capacity of Saudi Arabia – to meet demand growth & offset decline.*

N.B. The order of the plotted data differs between the two charts

The IEA outlook for global gross oil production (before own use) from all sources in 2030 was 103 mb/d in the 2008 Reference scenario and is 94 mb/d under the 2010 New Policies scenario. This outlook is consistent with the resource chart that was reproduced on Page 12 of EnergyWatch 58. That chart showed that the earth's crust contains sufficient captured carbon in theory to keep the world supplied with fossil derived liquid fuel for many decades; albeit with dire greenhouse consequences. However, the IEA charts show that the expected rates of exploitation of those resources are limited and that the potential contribution from unconventional sources are small in comparison from the extra delivery that would be required from new conventional oil production facilities to meet a meagre annual 0.5% growth in global oil production for the next quarter century.

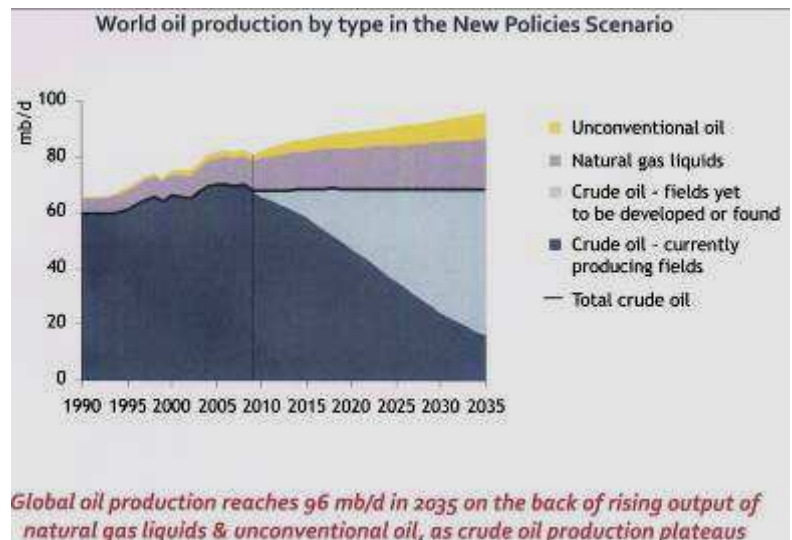
It can be observed that the drop in oil supplied over the last two years correlates with the global recession. That is consistent with a cyclic pattern of supply crunches leading to price spikes and recessions followed by recoveries leading to supply crunches, suggested in the recent Parliamentary Library report, discussed on page 3 of EW58. Whilst the IEA outlook indicates a flat line, the NZ economic analysis suggests more of a roller-coaster ride into our common energy future. *Editor.*

Also the amount of oil still coming from currently producing fields in 2030 has reduced from around 30 million barrels/day (mb/d) estimated in 2008 to 20 mb/d estimated in the 2010 report.

And there is still the huge wedge allocated to crude oil yet to be found or developed.

Peter suggests that “The IEA now indicating that we have passed Peak Oil is hugely significant. It wasn't very long ago they were saying it would peak out in the never-never - 2035 or beyond.”

### IEA WEO 2010 New Policies Scenario



[http://www.worldenergyoutlook.org/docs/weo2010/weo2010\\_london\\_nov9.pdf](http://www.worldenergyoutlook.org/docs/weo2010/weo2010_london_nov9.pdf)



## Comments from Ralph Sims

Professor Ralph Sims, recently returned to NZ from working with the IEA in Paris, contributed the following discussion points on SEFnews.

“This is just to clarify a couple of points about the IEA analyses of future oil supplies (I was involved with working on WEO 2008 450/550 policy scenarios when the guys in the IEA Oil Market division analysed >700 existing oil wells to get the data shown in that graph you allude to).

“We have to take into account the oil fields not yet developed (as you mention) before we can get to defining “peak oil”. Many of these are known reserves and are just coming on stream e.g. Brazil sans sal (below the salt offshore fields). Others are yet to be discovered but some, for sure, will prove positive from all the exploration activities – albeit harder to find. Enhanced oil recovery from existing fields due to improved extraction technologies also adds to future total supplies.

“The chances of going back to “cheap conventional oil” are unlikely is the IEA key message.

“That means other liquid fuels start to compete (including oil shales, tar sands, biofuels, heavy oils and coal to liquids – even NZ Solid Energy’s lignite to liquids!).

“So the industry says we’re not at a true peak as yet as current crude oil supplies (~70 Mb/d<sup>1</sup> of total 84 Mb/d) may plateau around this current annual extraction rate for some time rather than decline.

So in essence, we may have passed the peak of cheap conventional oil and will eventually reach the peak of more costly conventional oil- but not yet. We will not reach peak liquid fuel availability for decades to come.

<sup>1</sup> \* Mb/d = Millions of barrels of oil per day

“Of course many of these non-conventional liquid fuels result in higher GHG emissions per km travelled and have major environmental impacts. So whether or not we should use them is another debate.

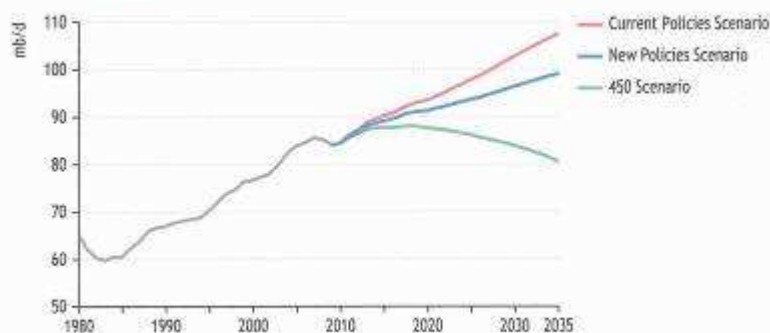
“Finally, be careful when comparing the “New Policies Scenario” of WEO 2010 (that assumes many new policies will be developed going forward) with the baseline “Reference Scenario” of WEO 2008, (which is based on assuming only the energy policies that were actually in place when written in mid 2008 will continue.)

“The former assumes increased energy efficiency, change of transport modes, more electric vehicles etc. by 2035, and therefore gives a lower oil demand and hence a lower oil price than the baseline “Current Policies scenario”. [See chart below. *Ed*]

“The main difference is that oil price forecasts under the business-as-usual baseline Reference scenario have been adjusted since 2008. In the Current Policy Scenario WEO 2010 (which is the old Reference Scenario) they are now thought likely to be higher than was assumed in WEO 2008. But because there is so much game-playing going on within OPEC as well as many other oil producing nations – who knows?

*Ralph Sims*

Figure 3.1 World primary oil demand by scenario



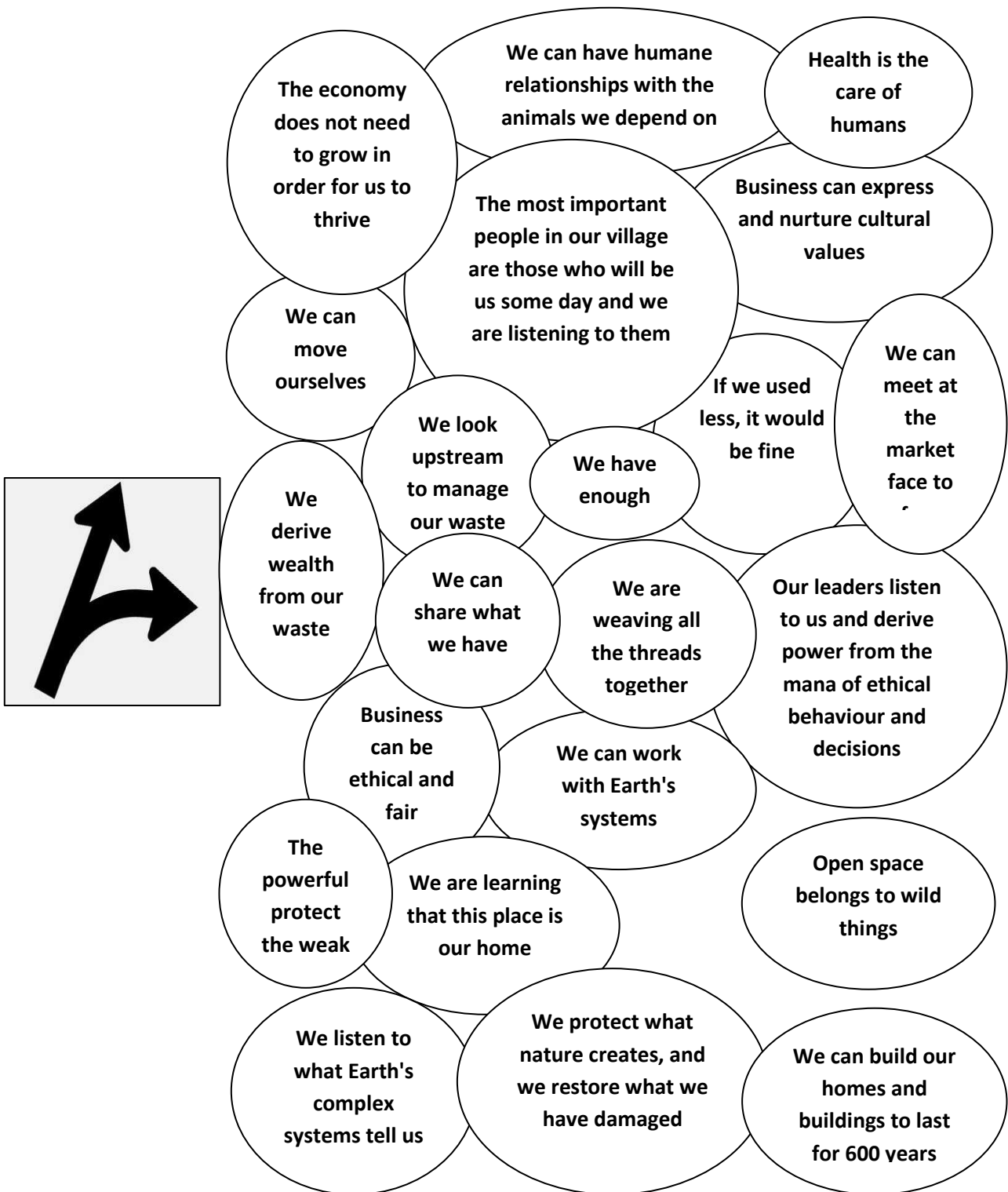
Note: Oil does not include biofuels derived from biomass.

*From IEA World Energy Outlook 2010. p.102*

# STATEMENT OF CHANGE

The path of Business-as-Usual does not go where we want to go. We believe there is a better way to go.

**L e t   t h e   p e o p l e   s a y...**



[www.signsofchange.org.nz](http://www.signsofchange.org.nz)



# SIGNS OF CHANGE E-CONFERENCE

## Keynote presentation

**My own journey to this new path starts in the past and the grief I have felt for what has been lost. But I am a thinking person, and I can choose a new way.**

I am shocked by too much of the history of my people - the way people, land, and other creatures have been treated.

Unbelievably, it once seemed like a grand idea to mill every Kauri, kill every whale, and enslave other people as servants.

My normal day is carried out in denial of the impossibility of the Business as Usual that is my lifestyle. I want to be a good person, so I bargain for the future with solar panels, wind turbines and compact fluorescent light bulbs. I feel guilty that I have participated in a system that does so much harm.

I feel anger at the people who profit the most from the way things are, and the leaders who are beholden to them.

I have struggled with the depressing prospects of failure, for how can so many things possibly change in time? But I also accept that I can't change the past, and I can't save the world with 10 consumer choices.

I have discovered hope where the world least expects it - in myself. I have seen the light of hope in others here.

We have the ability to move on to a new path because we have an inner compass.

I know what is right, and I exercise the freedom to choose a divergent path.

I claim the honour of being a heretic.

*Susan Krumdieck*

## Perspectives on the

## Signs of Change e-conference

It was inspirational, constructive and empowering.

*Liezel Jahnke*

It was fabulous from our perspective in Invercargill to be able to participate, enjoy the expertise of everyone, be part of a bigger vision and have our own regional conversations - even being able to say "yes we are doing that or something similar here" - affirming and helping us continue to hope!

You have paved the way for me to be bold and get others to move forward on this!

If it had been in Dunedin only 2 of us would have been able to attend - at great expense.

I feel very encouraged and hopeful that the grass roots movement has momentum to move us forward in the face of huge challenges - making a difference.

Nou to rourou, naku to rourou, ka ora te iwi - from your food basket and my food basket there is sufficient for everyone. *Jenny Campbell*

Uplifting in so many ways, and I really like your manifesto for change. By the way, I also think that the computer that lasts 60 years is mostly resolved by using linux. *Tom Bennion*

SEF and ESR conferences have always had the over-arching agenda of being pioneering. This Signs of Change e-conference fitted in handsomely with that concept, in several ways.

The first was the use of high-grade audio and video links to connect five venues, with two more linked by audio only. This considerably reduced the costs in travel and accommodation and of energy use and the CO<sub>2</sub> footprint. Many more people participated than would have been the case for a traditional single-venue conference.

The second was in the wide variety of topics presented, all of which reported the experience of people who had tried and tested ways of living and working more sustainably. Scenarios ranged from student flats, through medical general practices, bicycle use, renewable energy use, improving energy efficiency of office buildings, the implementation of the Reduce, Re-use and Recycle principles at the industrial level, and reduction of waste at the metropolitan level. Other papers presented described Farmers' Markets, more durable housing, local renewable generation of electricity, the development of rail as sustainable transport, and sustainable electricity generation and distribution.

The third was in the wide spread of age, experience and background of the participants, and their enthusiasm in finding and developing ways of reducing our collective adverse pressure on our planet's resources.

Congratulations are due to all those who worked strenuously to bring off this pioneering event.

*Neil Mander*

# The 'Wild Energy' Green Energy Design Competition

Press Release from Happyzine

## DEADLINE 31<sup>st</sup> JANUARY 2011

Wild Energy – an international green energy design competition intended to spark more creativity, fun and imagination amongst environmentalists – is open for entries. The competition was developed in response to the challenge New Zealand is currently facing to increase power supplies as demand grows, by the team at the Kiwi good news website [www.happyzine.co.nz](http://www.happyzine.co.nz)

Co-organiser Charlotte Squire says Wild Energy came about in response to plans to flood some of New Zealand's most pristine and wild rivers and valleys to create hydro-power dams.

“While hydro-power has its benefits, I would rather see our beautiful wild rivers and valleys (and the internationally significant species living within them) remain intact. Every day I see new sustainable design ideas online that amaze me on websites such as [www.inhabit.com](http://www.inhabit.com). This competition is an invitation to the designers and inventors of this world to share their ideas about green energy, so that we in New Zealand, and others facing similar energy demand issues world-wide, can face this challenge from a fresh, inspired perspective.

“I want to issue an invitation to inventors and green dreamers world-wide. I don't care how qualified, or experienced you are, what matters here is creativity and viability of ideas. We're challenging participants to come up with an idea that can be up-scaled or replicated small-scale to generate fifty percent or more of the power that the proposed Mokihinui hydro dam (on the west coast of New Zealand) would create<sup>2</sup>.”

The all Kiwi Wild Energy judges panel includes: Jeanette Fitzsimons (who has recently retired from her long held position as co-Leader of the Green Party),

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<sup>2</sup> i.e. 60-85 MW or 310-360 GWh per year

The other judges will be Tim Wigmore (a Wellington based designer), Steve Goldthorpe (a Waipu based energy analyst), Chris Heaslip (an Invercargill based engineer) and Geoff Henderson (CEO of Windflow Technology Ltd and recognised global wind energy expert).

A panel of NZ Politicians has also agreed to choose and comment upon their favourite three designs. They are: National MP Nicky Wagner, Labour MP Charles Chauvel and Green Party MP Kevin Hague.

### The winners of each section will receive:

- A Winner's Certificate of achievement from Happyzine, with glowing testimonials from the judges.
- A record of the amount of people who voted for their entry online.
- Mention and recognition in at least two press releases that will go out to hundreds of thousands of people world-wide.
- Official acknowledgment that they have contributed positively to the nationwide movement to save the Mokihinui River and all other wild rivers that are currently under consideration for damming.
- The overall winner will receive the inaugural Happyzine Wild Energy Trophy.
- Spot prizes will also be randomly given out to people who enter Wild Energy (see the sponsors of these spot prizes below)

### Wild Energy Guidelines

The Wild Energy competition was developed as Happyzine's response to the challenge we face as a global community, to produce more electricity in an environmentally sustainable manner.

Meridian Energy proposes the development of a hydro generation scheme on the Mokihinui

River (which is located on the west coast of the South Island of New Zealand). This would involve the construction of a dam, and the consequent flooding of part of the valley, and the disruption of many species of wildlife in the area.

We believe there must be other ways of generating or saving the energy that the proposed scheme would produce. This competition has been designed to spark creativity, and showcase the best ideas.

The New Zealand Electricity Commission reported in 2008 that the Mokihinui scheme would have a capacity of 60 to 85 MW, and produce an annual output of 310-360 GWh of energy. It would be wonderful if the (scaled up) entries to this competition were able to demonstrate the potential of either saving or generating at least fifty per cent of this figure. Of course, any alternatives have to be practical too. The same 2008 report estimated the generating cost at 9.82 cents / kWh (with an initial capital cost of some \$304 million). The competition judges will be using this information as part of their evaluation criteria for practicality of implementation.

### **How to Enter**

We want you to enter your ideas for either saving or generating electricity that would either be directly equivalent too, or could be scaled up to - the equivalent of half the output of the proposed Mokihinui project (see above).

### **Entries can be either:**

- Designs that generate stationary energy (that is, not transport fuel)
- Designs that reduce energy usage

You must (as part of the entry) include the likely energy generated (or saved) by your design, and the cost (both to implement, and to operate).

Your entry must include a description of the design (500 words maximum), plus relevant pictures (minimum three, maximum five) or video. An entry can be either conceptual (an idea), or an actual implementation – something you've tried, or are using.

### **The small print**

1. All entries must be submitted by 11:59pm on 31st January, 2011 in order to be considered.
2. To enter, email the team ([wildenergy@happyzine.co.nz](mailto:wildenergy@happyzine.co.nz)), with a description and up to five photos (as jpegs) (and where relevant, link(s) to video hosted on either Youtube or Vimeo) of your clever, creative ideas about how to generate power in Aotearoa/New Zealand in a sustainable, intelligent, small-scale fashion.
3. You can not infringe on anyone's copyright or intellectual property with your design, and by entering the competition, you agree that your work is your own.
4. By sending us your entry you agree that you are allowing us to freely publish your material online.
5. Judging will be carried out by the Happyzine community (who can rate your entry out of five stars before 31st January, 11.59 pm) and by a panel of judges. The judges will score your design out of five. The winners will be announced in February 2011.
6. The judging criteria will be:
  - Feasibility– How practical is the idea? Include consideration of costs and energy generation or conservation.
  - Sustainability- How will the idea impact upon the planet? The potential to create positive change for the planet?
  - Creativity– How lateral thinking, and 'outside the square' has the designer been with the entry?
  - Imagination– Does the entry reuse old ideas in a new way? What is new about this concept?
  - Design– Properly designed objects fit their context so well that they are easy to use and beneficial to the user.
7. The Wild Energy categories will be: 0 – 11 year olds, 12 – 18 year olds and Adult. When you email us your entry, tell us which category you'd like to enter it into. Entry is free. You can enter as many times as you like (providing your entry was designed with integrity), provided that each entry includes a different design or concept.
8. For each category there will be a Viewers' Choice, a Judges' Choice and an Overall Winner. We will also be giving away spot-prizes to participants.
9. The winning entries will be decided upon and announced by 3rd February (Monday). They will be announced in the Happyzine ezine initially. The Overall Winner will be the entry with the highest Viewers' and Judges' ratings (which will both be rated out of five).
10. Happyzine withholds the right to decide not to enter any submitted design into the Wild Energy competition if we deem that it's not quite up to the quality or integrity of design we're seeking to promote or otherwise contravenes these rules.
11. In entering the competition the winners agree to work with us on up to two press releases to promote their designs via the world-wide media web, once their entries have been chosen. They also agree to refer to [www.happyzine.co.nz](http://www.happyzine.co.nz) during all publicity and interviews beyond Happyzine's scope for the next twelve months when discussing their winning entry.

## Join our sustainable energy news & discussion group

SEF Membership provides a copy of our quarterly EnergyWatch magazine. In addition, many members find the SEFnews email news and discussion facility an easy way to keep up to date with news and views as it happens. The discussion by the group of sustainable energy “experts” who have joined the service offers an interesting perspective.

Non-members are invited to join the SEFnews email news service for a trial. To do this send a blank email to: <SEFnews-subscribe@yahoogroups.com>. To help us stop spammers, non-members need to supply a name and contact details, and a brief statement of their interest and/or involvement in sustainable energy issues, before their trial is approved.

As with all Yahoo groups, SEFnews emails can be received “individually” (as they are sent) or as a “daily digest” (grouped into one email per day). If you have a Yahoo ID you can also switch emails on and off, or read the news on the web – a handy option for travelling Kiwis. YahooGroups saves all of our text emails for later reference, and there is a search function so that you can review the thousands already stored over the last 6 years.

Some busy people using a work address prefer to use the Rules function in their email software to automatically save SEFnews emails to a separate folder for later reading. If you do not want a Yahoo ID, the administrator <admin@sef.org.nz> can select the ‘daily-digest’ option for you.

For climate change news, join the Climate Defence Network email news group: [climatedefence-subscribe@yahoogroups.com](mailto:climatedefence-subscribe@yahoogroups.com)

### EnergyWatch

Permission is given for individuals and educational or not-for-profit organisations to reproduce material published here, provided that the author and EnergyWatch are acknowledged.

While every effort is made to maintain accuracy, the Sustainable Energy Forum and the editor cannot accept responsibility for errors. Opinions given are not necessarily those of the Forum.

Publication is normally four times a year, and EnergyWatch is posted on the SEF website ([www.energywatch.org.nz](http://www.energywatch.org.nz)) as a PDF file, two months after distribution to SEF members.

### Contributions Welcomed

Readers are invited to submit material for consideration for publication.

Contributions can be either in the form of Letters to the Editor or short articles addressing any energy-related matter (and especially on any topics which have recently been covered in EnergyWatch or SEFnews).

Material can be sent to the SEF Office, PO Box 11-152, Wellington 6142, or by email to [editor@sef.org.nz](mailto:editor@sef.org.nz), or by directly contacting the Editor, Steve Goldthorpe at PO Box 96, Waipu 0545.

### SEF membership

Memberships are for twelve months and include four copies of EnergyWatch.

Membership rates are:

Low income/student	\$30
Individual	\$50
Overseas	\$60
Library	\$65
Corporate	\$250

Mail the form below, with your payment or order, to The Sustainable Energy Forum Inc, P O Box 11-152, Wellington 6142. A receipt will be sent on request.

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