



## EDITORIAL

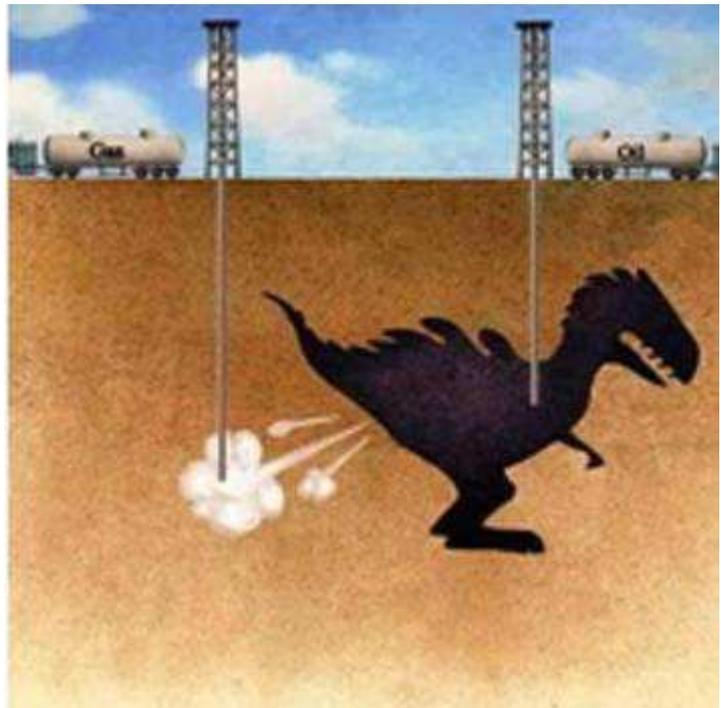
### Independent Assets Need Shared Infrastructure?

In recent weeks various articles have dropped in my inbox highlighting the need for a joined-up thinking approach to maintaining the efficiency of energy supply infrastructure. These overseas stories led me to wondering about some of the secondary issues might arise in New Zealand as the philosophy of independence of major energy assets is implemented.

The essence of common user facilities, such as transmission lines or pipelines or even roads or communication networks is that they work most efficiently when there is good overarching prediction and control of the traffic that the infrastructure will be obliged to carry.

For example, this simplified cartoon depiction of the oil and gas industry implies that the activities of the production of liquid oil from ancient fossil remains and the production of gas from that same source look like completely independent activities. In practice, however, crude oil comes out of the ground with associated gas and gas often comes out of the ground with associated liquid condensate. Thus both operations need both liquid and gas delivery infrastructure, albeit in different proportions, to deliver their products to the market. If the gas industry is not obliged to accept and transport relatively small amounts of associated gas produced with oil, regardless of location, then that gas becomes a worthless stranded resource, which would have to be wastefully flared in order to enable production of valuable oil.

One of the overseas stories relates to gas storage in Canada, where gas is stockpiled in underground formations in the summer for use in the following winter heating season. High productivity from independent gas producers is filling up storage much earlier in this summer season than in previous years. Without storage infrastructure, which cannot be expanded quickly, the producer gas price will fall, perhaps to zero, forcing well shut-ins and flaring, which far from efficient or economic.



In the NZ context this raises the question of adequacy of communal services for the proposed exploration for oil down the East Coast of North Island where there is currently no gas gathering infrastructure.

Another overseas example of the importance of infrastructure is the constraints imposed on wind generation in Germany, the USA and China by transmission grid capacity, meaning that the full capacity of wind turbines cannot be captured and delivered to consumers. In the NZ context, as increasing separation and independent action results from increased autonomy of power generators at what point would there be a potential for wind generation to become similarly constrained?

On 20<sup>th</sup> July a seminar will be held in Wellington, after the SEF AGM, to explore the question *“How will the Mixed Ownership Model support Sustainable Energy?”* After introductory presentations from Geoff Bertram and Molly Melhuish, there will be an open forum discussion of the question :-

*“In the context of the Mixed Ownership Model for major New Zealand energy supply companies, what legislative and regulatory framework would be needed to ensure progression towards a more sustainable energy future for NZ?”*

Later in this issue of EnergyWatch Susan Krumdieck poses some leading questions to ponder before attending the SEF seminar.

A visit to the Mercury Energy website will reveal a demand management system called TIMEWISE, which utilises the smart meter technology to enable domestic users to tailor their use of power to low cost times of day. However, it is apparently only in the trial phase at present and it seems to be a matter of “if” rather than “when” the scheme will be rolled out to include consumers living in rural areas.

This issue also includes a press release from BANZ, which heralded the release of a country status report by Pure Advantage.

The long awaited advent of Electric Vehicles is getting closer with the launch of the Better Place scheme in Israel and some other countries. This scheme essentially involves a transition away from the vehicle ownership mindset to a mobility leasing arrangement that opens up opportunities for addressing many of the potential issues with practicality and acceptance of EVs.

This issue of EnergyWatch is smaller than usual. EnergyWatch belongs to the SEF membership. I encourage all readers to submit letters, articles or items spotted in the press that deserve a bit more longevity than is afforded by postings on SEFnews. If you are making a posting on SEFnews, I would welcome an email suggesting that the topic could be recorded more permanently in EnergyWatch.

As usual, EnergyWatch wraps up with an update on the oil price trends which exhibit a significant drop in the last quarter that appears to have stabilised. My comment of “ever upwards?” in EW65 has been overturned, but in the bigger picture it appears that that might be a temporary phenomenon as we bump along the oil peak.

*Steve Goldthorpe, Editor*

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Sustainable Energy Forum

# AGM and Seminar 2012

**Friday 20<sup>th</sup> July 2012**

11.00 a.m. to noon. SEF Annual General Meeting

At EECA, Level 8, 44 The Terrace, Wellington (or by phone)

for SEF financial members

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12.30 p.m. to 2.00 p.m. **PUBLIC SEMINAR**

At Room 315,  
Railway West Wing,  
Pipitea Campus,  
Wellington



all are welcome

Theme: - How will the Mixed Ownership Model support Sustainable Energy?

Speakers:- **Molly Melhuish**, The implications of partial asset sales for sustainable energy in New Zealand.

**Geoff Bertram**, Where the Mixed Ownership Act leaves the electricity sector's future and the prospects for small-scale distributed renewables.

Followed by an open forum discussion to address the question

“In the context of the Mixed Ownership Model for major New Zealand energy supply companies, what legislative and regulatory framework would be needed to ensure progression towards a more sustainable energy future for NZ?”

Bring your own lunch and a gold coin to contribute to venue hire.

# TIMEWISE – A DEMAND MANAGEMENT INITIATIVE

Cameron from West Auckland contacted EW about the TIMEWISE scheme that is being trialled by Mercury Energy. TIMEWISE is described on [www.mercurytimewise.co.nz](http://www.mercurytimewise.co.nz).

Cameron had seen it on the internet and had emailed Mercury. He got this reply :-

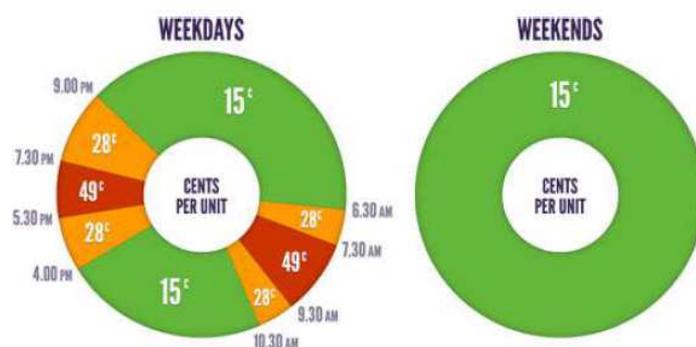
*“At the moment, TIMEWISE is being run as a product trial and as such is not yet available to our entire customer base. The trial is currently at capacity, so we are unable to bring any further customers onboard. We are however keeping a record of customers who have expressed interest in the TIMEWISE product. If you would like to supply me with your Mercury Energy account number, I would be happy to contact you should this situation change in the future.*

These high user rates (plus \$1.13 per day fixed charge) work out to an average of 20.8 cents per unit for appliances like a fridge that runs 24/7. That would be very attractive to folk in the far north paying 35c/unit.

As it happens, I am a Mercury Energy customer so I enquired when we might get this deal in Waipu. I got the same reply. Editor

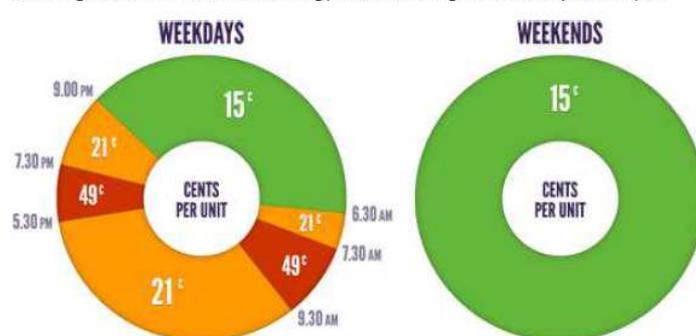
## DaySaver plan

DaySaver has an extended weekday off-peak and compact shoulder periods. This is a great plan if you are able to move some of your evening energy use to earlier in the day.



## NightSaver plan

NightSaver offers a long weekday shoulder zone with a competitive rate. If you are a night owl who uses more energy in the evenings this is the plan for you.



Prices displayed are the per unit rates of electricity on the DaySaver and NightSaver standard plans, in the Vector Central region. A fixed charge of \$1.13 applies per day. Prices are inclusive of GST and the equivalent of Mercury Energy's 10% Prompt Payment Discount. Low user pricing is available for customers using less than 8,000 kWh per annum.

## The heaviest element yet known to science has been discovered

The new element is **Governmentium (Gv)**. It has one neutron, 25 assistant neutrons, 88 deputy neutrons and 198 assistant deputy neutrons, giving it an atomic mass of 312. These 312 particles are held together by forces called morons, which are surrounded by vast quantities of lefton-like particles called peons.

Since Governmentium has no electrons or protons, it is inert. However, it can be detected, because it impedes every reaction with which it comes into contact. A tiny amount of Governmentium can cause a reaction normally taking less than a second to take from four days to four years to complete.

Governmentium has a normal half-life of 2- 6 years. It does not decay but instead undergoes a reorganisation in which a portion of the assistant neutrons and deputy neutrons exchange places. In fact, Governmentium's mass will actually increase over time, since each reorganisation will cause more morons to become neutrons, forming isodopes.

When catalysed with money, Governmentium becomes Administratium, an element that radiates just as much energy as Governmentium since it has half as many peons but twice as many morons. All of the money is consumed in the exchange, and no other byproducts are produced.

# BIOENERGY ASSOCIATION OF NEW ZEALAND WELCOMES PURE ADVANTAGE'S REPORT INTO NEW ZEALAND'S POSITION IN THE GREEN RACE

## Bioenergy Association of New Zealand

*BANZ is particularly excited by the report's emphasis on the necessity of bioenergy to New Zealand's clean energy future*

Mr Brian Cox, Executive Officer of the Bioenergy Association of New Zealand (BANZ) said that "The Bioenergy Association of New Zealand (BANZ) is excited by the release today of Pure Advantage's *New Zealand's Position in the Green Race* report. The report highlights the important role of renewable energy – and in particular bioenergy – to New Zealand's future energy mix."

Mr Cox added "BANZ shares Pure Advantage's belief in the need to pursue green growth from renewable energy sources. This will both improve New Zealand's energy security and help our balance of payments. The report highlights how our existing skills in areas such as bioenergy, as well as continued development and investment in the industry, will help New Zealand capitalise on the move towards green growth."

*New Zealand's Position in the Green Race* specifically makes mention of the potential for bioenergy in New Zealand is huge. It found that biomass could potentially account for 100% of our liquid fuel needs, 100% of our heating needs, and 73% of New Zealand's total electricity generation. The report notes how strong government leadership, in conjunction with the private sector, can help to drive investment in bioenergy. Finland, for example, derives 80% of its industrial heating, 74% of domestic heating, and 29% of its total electricity generation from biomass. This has been spearheaded by their National Climate Strategy, a partnership between government and the private sector that sets clear goals about Finland's clean energy future.

New Zealand's international branding relies heavily being clean and green and biomass offers a way for New Zealand to help green its energy production. Pure Advantage's belief is that while the optimal situation is government and the private sector working together, in the absence of government leadership, industry needs to take the lead.

Mr Cox added that "BANZ, as an industry group, has been undertaking its own analysis of the opportunities and has led the development of an industry driven Bioenergy Strategy which indicates that on an economic basis 25% of NZ energy supply could be supplied from bioenergy by 2040. This would be a \$6billion industry for New Zealand and would provide jobs and economic stimulus throughout New Zealand."

Pure Advantage is set to release a macroeconomic review - the first of its kind in New Zealand – in the third quarter of this year. Mr Cox said "BANZ looks forward to the in-depth analysis of renewable energy that the review is likely to contain. New Zealand's clean and green image is one of our main competitive advantages. This report indicates that bioenergy is a key part of that future."

Mr Cox said that "Wood fuel can supply the full range of commercial heat requirements, from relatively small heat users such as hotels, right up to the largest users such as meat and dairy processors. In addition wood from forest harvest or processing residues could by 2040 supply 30% of our transport fuel. Economic growth and security of energy supply from bioenergy go hand in hand"

*Released by BANZ 11<sup>th</sup> June 2012*

# BATTERY SWAPPING FOR EV INFRASTRUCTURE

**These comments on the Better Place EV concept, which is being trialed in Israel, are edited from a Green Car Reports review**

The battery swap stations are just a tiny part of an holistic technological solution for electric car drivers, which covers everything from charging stations through to route-planning, battery maintenance and grid power management.

The virtual smart grid of interconnected charging stations, cars and battery swap stations means that Better Place can help the Israeli grid ensure large numbers of electric cars charging at night doesn't mean the nation will suffer brownouts. After all, as Better Place admits, around 95 percent of customers will only need to charge their cars at night, using battery swap stations only rarely.

When parking up and plugging in, Better Place cars won't start charging immediately, unless they have less than 20 percent charge remaining, or the driver has overridden charging timers in order to obtain a full charge. Instead, they will communicate with the operations center, detailing their battery capacity, along with any departure timers set by the driver using the Oscar onboard system, or Better Place's smartphone app. Then, as Better Place customers plug in for the night, its operations center initiates charging on a priority basis, filling up cars with the lowest battery packs or earliest departure times first.

In this way, it not only improves battery health by ensuring that battery packs don't sit fully charged for hours at a time, but it enables Better Place to inform utilities of excess power demand ahead of time. As one engineer put it, "I can call up the utility, and tell them I've got 500 electric cars set to start charging in 1 hour. By giving the utility a heads-up, we can make sure they have excess capacity ready and waiting when we need it."

It also works the other way: if the utility finds the demands on its network are too great, it can

request that Better Place dial down charge rates to ensure the infrastructure can cope. It's this software that Better Place claims will enable it to add 2 million electric cars in Israel without requiring any updates to its electrical grid - that's more than 9 times Israel's entire new car market.

Even with all this integration however, there's always the chance that someone will run out of charge. With charging stations located throughout every city and battery swap stations located every 25 miles or less -- that's less than one quarter of the estimated range of the 2012 Fluence Z.E. -- Better Place is confident that won't happen very often. When the worst happens, Better Place has fitted breakdown trucks of its partner assistance service with portable charging stations, enabling cars to charge up even if they're being towed.

Better Place also says it will always ensure cars with less than 20 percent remaining charge get priority charging, sufficient to enable them to travel to the nearest battery swap station if longer-distances are needed in an emergency.



Better Place Battery Swapping

Finally, to counteract the hardened electrophobics, Better Place allows customers the option of requesting immediate charging when plugging in, although it notes that in its test phase, most customers stop using this feature after a few weeks of driving.

# HAS SOMEBODY STOLEN OUR POWER SYSTEM?

## Is there any hope of getting it back?

Dr Susan Krumdieck contributes some scene-setting questions for the forthcoming

### **Sustainable Energy Forum Seminar 20 July 2012, Wellington**

The New Zealand government built the main elements of the national power supply and distribution grid back before most of us can remember. The grid fulfilled all of the dreams of the country to become a modern society and to support industrial development. The original objective of the engineers who built the power infrastructure was to provide affordable essential services to all New Zealanders. Because of the availability of hydro and geothermal resources, the New Zealand public owned a power system with a high degree of sustainability. That was then, this is now.

The 2012 SEF Seminar will present the history of the development of the national power grid and the political and regulatory changes that have left us wondering, has somebody stolen our

power system? Is the objective of the power suppliers, distributors and network operators still affordable power for all New Zealanders? Will current proposals to change ownership provide better outcomes for the country or for the investors?

What could or should be done if politics were not the overriding factor in development of energy policy? What would the engineers do if it were up to them? What would an effective market really be like? What kind of regulatory oversight would maintain secure access to essential services at affordable prices? How can we develop in a sustainable direction in spite of the politics of the day?

The speakers will provide the historical context, and explain the policy and regulatory changes that have led to the current state of affairs. The seminar will then explore the current policy for sale of national assets and group discussions will focus on strategies for long range sustainability.

## Neil's Oil Price Chart

This chart compiled by Neil Mander, tracks a basket of oil prices in comparison with the gold price. The last 4 months has shown a significant fall back to the levels of February 2011. That fall appears to have bottomed out. The recent changes appear to mirror the oil price turmoil of 2008, but less severely.



## 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

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Publication is now bi-monthly, 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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