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A Conservation Ethic is Essential

Editorial

Al Gore's Inconvenient Truth

On the same day as Al Gore's movie An Inconvenient Truth won an Oscar, it was revealed that his household power bills last year were more than 20 times the US average.

A free-market think tank in Tennessee where the former US Vice-President lives, claims that Gore's 20 room, eight-bathroom home in Nashville consumes more electricity in a month than the average American household uses in a year.

The Tennessee Centre for Policy Research said that Gore's house consumed nearly 221,000 kilowatt-hours (kWh) of electricity during the year - more than 20 times the national average. The group quoted US Department of Energy figures that showed the average American household consumes 10,656kWh a year.

However, according to bills received by The Associated Press spanning the period from 3 February 2006 to 5 January 2007, the Gores used about 191,000kWh in 2006, still more than 12 times higher than the typical Nashville household which uses about 15,600kWh per year.

A member of the group making the allegations said that as a spokesman of choice for the global warming movement, Al Gore has to be willing to "walk the walk", not just "talk the talk" when it comes to home energy use.

CONTENTS

In his documentary film, Gore calls on consumers to conserve energy by reducing electricity use. As the credits are rolling at the end of the film, viewers are told of a number of ways in which as individuals they can reduce their energy use.

The group estimates that Gore paid nearly US$30,000 (NZ$40,000) in combined electricity and natural gas bills for his 929 square metre house and estate in Nashville last year.

A spokeswoman for the electricity company said that Gore had been purchasing "green power" for US$432 a month since November 2006. A spokeswoman for Gore said that his home was also under renovation to add solar panels.

Responding to the group's claims, aides for Gore said that Gore had signed up for 100% "green" power through a renewable energy programme and also installed solar panels, compact fluorescent bulbs and other energy-saving technology at home.

"What Mr Gore has asked is that every family calculate their carbon footprint and try to reduce it as much as possible", a spokesman said. "Once they have done so, he then advocates that they purchase offsets, as the Gores do, to bring their footprint down to zero".

Gore supporters said that the criticism was politically motivated and the research group, despite claims of being independent and non-partisan, was "a strongly-leaning Republican organisation".

A spokeswoman for Gore said that to balance out other carbon emissions, the Gores invested money in projects to reduce energy consumption around the globe. "For every tonne of carbon they emit, he offsets that by doing investments in renewable energy sources".

Gore himself has since dismissed the group's report which he sees as the "last gasp" of global warming sceptics who have lost the debate so are now attacking their most effective opponent. But he has not refuted the figures.

On the website for the movie, Gore says "we have just 10 years to avert a major catastrophe that could send our entire planet into a tailspin" and "humanity is sitting on a ticking time bomb".

References: NZ Herald, 1/3/07 and NZ Energy and Environment Business Week, 7/3/07.

… and Price Charles also

The Prince of Wales has been found wanting in his efforts to save the world from global warming. Prince Charles and his royal household have generated more than 1500 tonnes of carbon dioxide in the past year according to an independent audit.

Prince Charles will this week announce that he and his household are carbon neutral - but campaigners claim that this is "greenwash" because, instead of cutting emissions, he is simply paying to offset them.

The audit has been conducted by Jonathon Porritt, his long-standing advisor.

Reference: NZ Energy and Environment Digest, 21-27/6/07

Where is the Real Environmental Benefit?

The concept of carbon trading is developing into a contentious issue, which is likely to split opinions even more in the next few years. Big business generally favours carbon trading, arguing it uses the profit motive and the ingenuity of markets to find the cheapest way to cut greenhouse gas (GHG) emissions.

Under the Kyoto Protocol, rich countries can meet tough emissions limits by funding low-carbon energy projects in developing countries. A condition is that the projects funded would not have otherwise happened. In Kyoto jargon, they must have "additionality".

But opponents see it as essentially a "smoke and mirrors" exercise. They believe that carbon markets will create the illusion of action, while the world carries on emitting more GHG.

Nevertheless, momentum is building worldwide for carbon trading, as business interests realise that they could be on to a winner. Carbon is tipped to become the world's biggest commodity market, and could even become the world's biggest market overall.

But the question remains: if an industry can simply buy credits and keep emitting carbon dioxide in the same or increased quantities, where is the real environmental benefit?

Reference: NZ Energy and Environment Business Week, 27/6/07

Green Imperialism?

"This is green imperialism" were the words used by Nor Mohamed Yakcop, Deputy Prime Minister of Malaysia in arguing that developed countries are hypocritical because they complain about China's rapidly increasing greenhouse gas (GHG) emissions, while taking advantage of that country's cheap labour and production of manufactured goods to obtain cheaper imports than available elsewhere.

Reference: Time Magazine, 9/7/07.

Note that China has surged past the USA to become the world's largest emitter of GHG, beating predictions that it would take at least another year to outstrip the US.

The findings by a Dutch environmental agency, sharply raises the stakes as world leaders try to agree on a new climate change accord that includes both China and the US.

Australia, which is hosting the next Asia-Pacific Economic Co-operation (APEC) summit has been lobbying the US and China to strike a regional agreement on climate change in Sydney in September 2007.

Reference: NZ Energy and Environment Digest 21-27/6/07.

India has recently firmly rejected calls to reduce its GHG emissions, but is instead pressing for greater collaboration on clean energy technologies.

India's Environment Ministry in a statement coinciding with the June G8 summit in Germany, says to meet the demands of rising living standards and providing electricity to more than 500 million Indian people who still lack this, the total emissions of GHG is bound to increase in India.

Reference: NZ Energy and Environment Business Week, 13/6/07.

William Catton's Views

A recent interview with US author William Catton noted that when his book Overshoot: The Ecological Basis of Revolutionary Change was published in 1980, the USA was still reeling from the 1970's energy crises and the recessions of the Ford and Carter administrations. Carter came on TV wearing a cardigan and asked Americans to turn down the thermostat and for a couple of years they did.

But then the public grew impatient for cheap energy to return. The national mood changed. A consumption backlash, combined with national angst over the Iran hostage crisis, ousted Carter and brought in Ronald Reagan.

As the "Great Communicator" proclaimed "morning in America" and enjoyed the popularity that falling energy prices, freed hostages and tough talk against the Soviets brought, he helped usher in two upbeat if ecologically deluded decades.

They culminated in the dot-com revolution, the real estate boom and an explosion of global trade driven by big companies outsourcing their manufacturing to China.

Today when even liberals have come to believe that greed is good - and they no longer question the mantras of free trade and endless economic growth - talk about "sustainable living" has moved far to the right.

Conservation sill gets lip service in the USA here and there, especially "energy efficiency", but the real action today is about better living through business innovation and clean technology. Now environmental books are more likely to tout the benefits of a "hydrogen economy", or some other way to preserve America's current consumer lifestyle than to say that we just need to cut back.

Yet a new generation of activists, centred on the peak oil movement, has embraced Catton's ideas, finding his focus on cutting back to be a compelling response to global warming and an energy constrained future.

Indeed, in today's global economy, Catton doesn't think things have changed since the dark days of the Cold War, when the US Government seriously contemplated dropping thousands of Sears catalogues instead of propaganda leaflets on the poor people of the world.

The idea was to spread the American Dream of a house full of appliances and a car in every driveway across the globe. "It seemed like a good idea at the time, but of course today this would be our doom".

America is still trying to export its wasteful lifestyle to the rest of the world with the mantra of economic growth and development. But to mitigate global warming and prepare for peak oil, we should be doing the opposite: we should start conserving resources and helping poor countries to do the same.

Catton points the finger at the biggest offender, the Bush Administration in particular and the American consumer lifestyle in general.

Catton says that we need more international co-operation to downsize. "And who needs the most downsizing? We do. And that's why it's most unlikely to happen; the people who need to downsize have the least interest in downsizing - or they think that only India and China should downsize".

When asked for hopeful signs, Catton is heartened by the movement for clean energy, but mostly because its "heart is in the right place". Much of its thinking Catton finds flawed.

"The assumption that somehow clean energy solves the problem is wrong. It somewhat ameliorates the problem, but it comes with problems of its own. For example, using corn to make ethanol has caused shortages of corn for Mexican tortillas. Machines have become our competitors for food.

For Catton, the most useful ecological concept for people today is carrying capacity.

"Once you really grasp the carrying capacity concept you can start making extensions and get a whole different world view," he says. "If we applied the same kind of thinking about deficits ecologically instead of just politically and economically, then we would see that a carrying-capacity deficit is more serious than a fiscal deficit. We're spending the planet's largesse much faster than the planet produces it".

But Catton uses another concept that is well worth considering today as ideas gain acceptance to sequester carbon dioxide emitted from burning coal and oil and thereby prevent if from reaching the atmosphere and adding to the greenhouse effect.

"We should really call sequestering re-sequestering," Catton says, taking exception to the idea that we can, confidently and on a large scale, re-bury the carbon dioxide gas that we have liberated from its more easily stored form in solid or liquid hydrocarbons.

What advice would Catton give to his six-month-old great-grandson, when he is ready to hear it?

"Keep struggling for the downsizing of our lifestyle. It's the only way we can preserve our civilisation. We've got to stop the increase in human numbers; we've got to stop the increase in resource consumption and waste disposal; and we've got to stop the increase in inequality."

"That's partly what's fuelling the increase in use of resources. We act as if the developing countries have to develop up to our level. No: we should downsize first so poor countries don't get as overdeveloped as we did. Of course, that flies in the face of the assumption that the American way is the example for the world to follow."

Reference: SEF News Posting 4/3/07 from an interview with William Catton in a new magazine called Conserve

Conclusion

Seeking to offset or reduce our carbon emissions on either a personal basis or a countrywide basis by the purchase of carbon credits or by adopting more energy efficiency and "clean technology" is not going to be sufficient to mitigate global warming and prepare for peak oil.

We must also wholeheartedly adopt a conservation ethic both as individuals and as nations and this will inevitably lead to lifestyle changes for us all (including Al Gore and Prince Charles).

The IPENZ Code of Ethics adopted in 2005 sums the situation up very well when it states that one of the five fundamental ethical values of the Code is sustainable management and care for the environment. The guidelines suggested to achieve this goal include using resources efficiently and recognising the long-term imperative of sustainable management throughout your engineering activities.

The guidelines note that "members shall recognise and respect the need for sustainable management of the planet's resources and endeavour to minimise adverse environmental impacts of their engineering activities for both present and future generations".

Such an ethical guideline should not just apply to professional engineers, but should apply to us all in our everyday activities.

John Blakeley

Was Malthus Correct After All?

Background

In 1798, Thomas Malthus FRS (1766-1834), an English clergyman and economist, wrote a widely read essay entitled The Principle of Population, where perhaps he was the first person to question whether we can continue to have economic growth and increase the world's population without causing damage to the environment and starvation due to insufficient food resources.

His primary concern was for Great Britain, where he considered that if the population tended to grow exponentially and the food supply only grew arithmetically, starvation was inevitable and imminent.

Malthus did not help his cause by advocating what he quaintly called "moral restraint" to limit population growth, a concept as unpopular then as it would be today (even though today we do have reliable methods of contraception available to most people, which were not available then).

Malthus lived for another 35 or so years after he wrote the essay and appeared to be proved wrong within his lifetime, as the great colonial expansion of the nineteenth century gathered momentum in Britain, along with rapidly advancing more efficient methods of food production.

However just over 200 years later, the debate begun by Malthus is now again coming to prominence. The communiqué issued at the conclusion of the G8 meeting in Germany in June repeatedly emphasised sustained growth. Commenting on this on SEF News, Professor Arthur Williamson said that any statement emphasising sustained growth has to be unaware of what planet we are on (in regard to the concept of carrying capacity, referred to above by William Catton).

Defining Sustainability

Other SEF members have commented on the "disutility" of using nice-sounding but very vague words. Environmentalists talk about "sustainable" and assume that it refers to an ability to continue for ever and a day.

But that is not what the general public understand by the word "sustainable". Not collapsing immediately seems to be enough for them.

One dictionary gives eight definitions for "sustain", and hence for sustainable, and none of them contain any suggestion or sense of carrying on indefinitely. No wonder communication is such a problem.

Another SEF member noted that from an ecological point of view, sustainability means surviving in the long run - by leaving the environment in as good or better shape for future generations, and even if peak oil and climate change were not happening, a mass extinction of plant and animal species that is already under way is a biological wake up call that collapse has already started.

He commented on the fact that we are barely scratching the surface of the concept of sustainability to get to its real meaning, but **we must start soon to get to grips with the**

mainstream insane attitude of "sustainable" meaning "business as usual" even if in a greenwashed disguise.

The issue of different concepts of "sustainability" was thrown into sharp relief by the posting to SEF News of an article by Canadian economist Ross McKitrick of the University of Guelph, published in the Financial Post on 12 June which asked "Why not tie carbon taxes to the actual level of global warming?"

Economists Need Educating?
In response to earlier comments, Dr John Peet noted that mainstream (mainly neoclassical) economists, and the politicians they advise, still really believe that the ideas of Malthus have been totally and permanently disproved.

He said that in reality, if physics, let alone ecology is bought into the debate, sustainable growth is indeed an oxymoron and although his arithmetic wasn't correct, the basic ideas of Malthus were important.

Forestry Consultant, Piers McLaren, commented that McKitrick's "thought experiment" showed that economists are in "cuckooland".

He suggested that economists require a compulsory education in the physical sciences before they are allowed to pontificate on this subject. Instead they regard their economic rules as being as fundamental as the physical laws such as gravity.

He asked whether anybody else shared his deep pessimism that the human race is capable of seriously addressing the issues of sustainability and climate change/global warming? He noted that there are plenty of theoretical technical solutions but that is not where the problem lies.

Instead the problem lies in social organisation. The human species has evolved a brain capable of making collective decisions of the level (at best) of the tribe. After millions of years of evolution, human beings have not yet come up with an answer to the "free loader" problem, but we are trying to solve it in diplomatic negotiations between 180 self-interested nations.

He seriously believes that someone will extract and burn every last tonne of fossil fuel if paid to do so. Immediate individual benefit triumphs over future or collective disbenefit every time.

An Alternative View
Finally, Energy Consultant Murray Ellis commented that the problem is general and not specific to economists.

He noted that at the recent G8 meeting, world leaders were struggling to agree with something their predecessors agreed to 15 years ago (in the original agreement for the UN Framework Convention on Climate Change).

The real problem is not with economists, but whether the human race is capable of overcoming its self-interested tribalism and agreeing to anything significant? He suggested that the track record of international agreements on just about anything that involves a substantial number of countries and noticeable costs, is not encouraging.

Reference: Various postings on SEF News, 12-15/6/07

NZES/NEECS by October

The Government's timetable for delivery of both the NZES and the NZEECS has been updated by Energy Minister David Parker.

The finalised versions of the NZES and NZEECS will be published in September and October 2007 respectively. This is to align with the decisions being taken on emissions trading.

"We've had over 3000 submissions on the NZES, NZEECS and related climate change policy documents," said David Parker. "These submissions deserve careful consideration".

"It's important that the NZES and NZEECS mesh with decisions on emissions trading. Policies in all these areas will complement one another and form an important part of the comprehensive, whole of economy response to climate change and energy policy issues.

Reference: Government Media Statement, 5/6/07.

SEF Submission on the NZ Energy Strategy

- and related documents

Preamble

Note: This submission includes contributions from many members of the Sustainable Energy Forum. It has been compiled by Tim Jones, SEF Convenor.

The five energy and climate change policy documents released by the Government in December 2006 represent a major and very welcome change in NZ's approach to energy: the first official proposals for reducing energy use, instead of merely hoping to lower the rate of growth. SEF appreciates the effort that has been put into these documents by Ministers, officials, and others involved with the process.

Nevertheless, the suite of documents represents an inadequate response to the scale of the energy and climate change problems which face us. A more ambitious and comprehensive set of energy and climate change policies is achievable; increasingly politically acceptable; and necessary to:

- meet the environmental and energy supply challenges which are before us;
- maintain NZ's international standing and competitiveness in a world in which lagging the field on climate change will increasingly have economic as well as political repercussions;
- provide opportunities to develop efficient and environmentally sustainable processes, technologies and products.

The New Zealand Energy Strategy and related documents should embody a transitional strategy, designed to manage our energy system's transition to one that is appropriate for a carbon-constrained world. These constraints apply to both the supply of carbon – in particular, the future supply of fossil oil – and to the ecosystem's ability to absorb the byproducts of the consumption of carbon. Therefore, the overarching task of Government energy, land use and climate change policy should be to design an environmentally, socially and economically sustainable energy system that can operate within these constraints,

Thus, in addition to commenting on the objectives and proposals contained in the draft NZES and NZEECS, this submission proposes strategies to enable such a transition.

While 30 March 2007 is the end of the submission period, it is only the beginning of the process of consultation and engagement. To be effective, these strategies must be revisited, revised and updated frequently, in consultation with stakeholder groups.

Executive Summary

Introduction

This submission seeks to build on the change in direction represented by the Government's draft energy and climate change policy documents. Since the draft documents were released, the economic, scientific and political landscape of energy and climate change policy has changed significantly, meaning that more ambitious policies are not only possible but necessary.

This submission outlines a set of policy proposals which take account of this new reality, focusing on the NZES and the NZEECS, but also extending into climate change and land use policies. It calls for specific, measurable absolute greenhouse gas (GHG) emission reduction targets, and other subsidiary targets, and puts forward policies designed to achieve them. Both the transport and stationary energy sectors are discussed in detail, and a range of proposals put forward in each, designed to achieve the transition to a sustainable, low carbon energy system within the timeframe

required to meet the constraints imposed by the Earth's biophysical systems.

Summary of Proposals

This section includes the broad proposals made in this submission.

Goals

Five goals for a New Zealand Energy Strategy are proposed:

1. Reduce GHG emission levels through reducing fossil fuel consumption and adapting land use practices to reduce and/or offset emissions.
2. Institute rational economy-wide carbon pricing and stable regulation promptly, so people and businesses can invest with confidence.
3. Minimise the risk of the disruption or failure of stationary energy and transport systems by increasing their resilience.
4. Promote the transition to lower-emissions or no-net-emissions alternatives in both the stationary energy and transport sectors. This will need a mixture of regulations, incentives and pricing.
5. Ensure that any regressive social and economic effects of the above policies are mitigated for those least able to afford them.

Targets and Data Issues

An important early step in implementing the NZES and related documents should be to review the current data and modelling capacity, determine the gaps between what exists and what is required, and devise and implement a plan to fill these gaps and create a data and modelling infrastructure which can operate at the required level of both thoroughness and sophistication.

The draft NZES and related documents should adopt a maximum global greenhouse gas concentration target of 450ppm CO_2 equivalent, designed to avoid a warming of the atmosphere of more than 2^{o} C above pre-industrial levels. This target can be modified in the light of future international agreements.

Pilot projects in managing biosphere carbon stocks should be supported by the Government and should begin as soon as possible, so that the effectiveness, benefits, and difficulties of this approach can be better understood.

The long-term economy-wide emissions reduction target should be an 80-90% reduction in NZ's GHG emissions, compared to 1990 levels, by 2050. This target should be subject to both revision and an increase in precision as understanding of the risks of both abrupt and gradual climate change increases.

The following subsidiary targets should be adopted:

1. A 20% reduction in NZ's GHG emissions, compared to 1990 levels, by 2020.
2. A target of moving to a close-to-100% renewable stationary energy system by 2025.
3. A target year should be set for NZ's peak fossil energy use: that is, the year after which total fossil energy use in NZ must decline at an agreed rate. This year should initially be set as 2015, with provision to revise this towards 2010 if it becomes clear that 'peak oil' has arrived sooner than the International Agency expects.

The first binding emissions reduction progress target should be set down for 2012.

Land Transport

The following land transport emissions reductions goals should be set:

- A 15% reduction in net transport carbon emissions on 1990 levels by 2025
- A 50% reduction in net transport carbon emissions on 1990 levels by 2040
- A 90% reduction in net transport carbon emissions on 1990 levels by 2050

NZES Transport Objective 1 should be reworded as "Continue to provide access to the services presently provided by transport".

Five principles should be used to guide the transition to a resilient, low-carbon transport system:

1. Reduce the demand for motorised transport
2. Where motorised transport is needed, encourage alternatives to private road transport
3. Provide transport energy in ways which have a low net emissions profile and use the minimum possible quantity of fossil fuels
4. Where fossil fuels are being used for transport, use them as efficiently as possible, and with a low net emissions profile.
5. Ensure that fossil fuel prices remain high enough to encourage the transition to lower-emission alternatives.

Air and Sea Transport

The NZES, NZEECS and climate change documents should be amended to give substantially more coverage to air transport (and also sea transport), and that the following steps be taken:

1. Ensure that the necessary data collection facilities are in place to be able to do full lifecycle emissions accounting for air and sea transport to, from, and around NZ.
2. Play a positive part in international negotiations to ensure that emissions from international travel are included in international accounting for GHG emissions, and that the factors which exacerbate aviation's climate effects (such as the formation of contrails, and the height at which emissions are released) are taken into account.
3. In parallel with greater support for teleworking and telecommuting within NZ, provide support and incentives for international business travel to be replaced by teleconferencing and internet-based communications wherever possible.
4. Work towards establishing a GHG emissions cap for international transport to and from NZ, this cap to reduce over time.
5. Encourage research into environmentally more sustainable alternatives to present methods of air and sea travel.
6. Encourage the tourism industry to prepare for the risk of a future in which fewer tourists visit NZ, and those that do, stay for longer.

Stationary Energy

The NZES principle "to invest in energy efficiency whenever this is cheaper than the long run marginal cost, including externalities, of new generation" should be reworded as "to enable consumers and suppliers to invest in improved energy efficiency whenever this is cost-effective for them".

The NZES should include strong support for the NERI initiative and should avoid the creation of a redundant sustainable energy research and education centre.

The following six principles should guide the transition to a sustainable, low-emissions stationary energy system:

1. Invest in energy efficiency whenever this is more cost-effective than new energy supply.
2. Recognise multiple benefits of local energy resources.
3. Use "engineering efficiency" and "ecological efficiency" as the main criteria for assessing priorities for action.
4. Invest in the transition towards sustainability.
5. Fund low carbon policies.
6. Focus research, development, and resource assessment on technologies and skills to achieve early results.

Reference: The full submission can be viewed on the SEF website at www.sef.org.nz

Climate Change/Global Warming

Some Exaggeration of Climate Change Predictions?

Views of Two British Scientists

In the previous issue of EnergyWatch (Issue 44, pg 5), comment was made about two British scientists being concerned that the over-emphasis of the likely effects of global warming, especially in the near future, is harming the credibility of the arguments being advanced.

Further information on this is provided in an article in the Observer newspaper in the U.K. which quotes Professors Paul Hardaker and Chris Collier of Britain's Royal Meteorological Society as saying that scientists, campaign groups, politicians and the media are now suggesting that catastrophic events are more likely to happen when this could not be proved by scientists.

They also criticised the tendency to say that individual extreme events - such as typhoons or floods - were certain evidence of climate change.

Media coverage of the recently-released IPCC report was also criticised, especially the use of words like "catastrophic", "shocking", "terrifying" and "devastating" which are not actually used in the IPCC report.

A report Making Sense of the Weather and Climate was launched at a conference organised by the charity Sense about Science. The authors said they firmly believe that global warming was occurring and man-made emissions of greenhouse gases were partly to blame.

Some scientists also acknowledged that dramatic warnings about climate change had helped to generate public debate and support for action.

But Professor Hardaker warned that exaggeration of the problems confused the public and made it easier for sceptics to argue that the scientists were wrong.

For example, a very low-probability event given too much weight was the risk of the Gulf Stream, which keeps the North Atlantic relatively warm, "switching off" and plunging the region into an ice age, the scenario dramatised by the film The Day After Tomorrow.

Professor Hardacker said that scientists had to be more honest about the uncertainties surrounding climate change prediction to avoid losing public trust.

Two examples quoted in the Sense about Science report are:

Claim: Global warming will lead to more frequent El Nino events.

Reality: El Nino is a warming of the tropical Pacific Ocean that occurs every three to seven years. The cause of El Nino is not fully understood but its frequency is not linked to global warming and it has been documented since the 16th century.

Claim: Global warming will mean that extreme weather events such as the two one-in-400 year floods within one year in 2004 in Boscastle, Cornwall become more and more frequent.

Reality: It may sound alarming to know that a major flood such as this may happen two years running, but that translates into a 0.25% chance of such a flood happening in any one year; and the chance remains the same whatever happened in the previous twelve months.

Reference: NZ Herald 19/3/07

Footnote: Although it may be possible to reasonably accurately predict floods with relatively short return periods (50 years or less) with a century or so of historical records, to predict accurately a 1 in 400 year flood would require a much longer period of historical records than a century or less.

Sea Level Rise "As High as a Bottle of Twink"?

The above theme was taken up by commentator Jim Hopkins on National Radio's "The Panel"

during April in response to a recent statement by the Insurance Council of NZ that coastal property will become harder to insure.

The Insurance Council said that insurers are set to take a tougher line on providing cover for coastal properties (and those in flood and erosion-prone areas).

The Insurance Council CEO, Chris Ryan warned that insurers will be asking much harder questions in future when people come to insure their homes, particularly in areas of high risk. But the real impact of climate change on property prices is still likely to be several decades away.

Reference: NZ Energy and Environment Business Week, 18/4/07

In response to this, Jim Hopkins pointed out that the latest IPCC Report said that sea level may only rise by about 70mm between now and 2030, which in his estimation was about the height of a bottle of Twink (correcting fluid). He asked Chris Ryan whether the Insurance Council was seriously suggesting that a sea level rise of this magnitude would seriously affect coastal stability around NZ?

Chris Ryan sounded rather embarrassed by this question but pointed out that climate change might also increase the frequency of floods and storms.

Footnote: Key predictions for NZ in the IPCC Report include a sea level rise of between 190mm and 590mm by the year 2080, so the figure of about 70mm rise by 2030 seems quite reasonable in that context.

An Extreme View!

Writing in the NZ Listener (14 July) "Ecologic" column, Francesca Price said that she had spent a rather sobering weekend listening to an array of international experts talking about climate change at Otago University's Foreign Policy School. She quotes climatologist Blair Fitzsimmons, who co-wrote the NZ and Australian chapters of the latest IPCC report, as having stated that even if we start reducing our carbon emissions right now, NZ's sea levels will continue to rise for the next 40 years - some say by as much as 25 metres.

The first half of that statement is correct, but where on earth did she get the figure of 25 metres from? The actual figure according to the IPCC predictions should be somewhere around 25 centimetres over the next 40 years.

Either Francesca Price has put her decimal point in the wrong place and she is out by a factor of 100, or she is talking about a most extreme view of the possibility of rapid climate change.(Al Gore's film and book only suggested a 6 metre rise with the melting of a large part of the Antarctic ice shelf and/or the Greenland ice shelf!)

Note that during the whole of the twentieth century, global temperatures rose by about 0.6 degrees C and average sea level rose by about 18 centimetres (7 inches).

Is Purchasing Carbon Credits (or Offsets) Like Buying Indulgences?

Background

Martin Luther (1483-1546) was leader of the Protestant Reformation in Germany. He was ordained as a priest in 1507 and taught at Wittenberg University and preached in the town church. Until 1517 he was an orthodox Roman Catholic. His first idea of revolt occurred when he saw indulgences being sold for the forgiveness of sins, a practice which he openly condemned.

For this he was excommunicated and summoned before the Diet of Worms where he made a memorable defence (Here I stand. I can do no other).

Luther began with the support of the peasants who were genuinely shocked at the abuse of indulgences and other matters. He lived to see the principles of the Reformation widely established.

A View in Time Magazine

During a recent coach tour of Europe, I travelled close to the town of Wittenberg and privately, I had since compared the practice of purchasing

carbon credits (or offsets) to that corrupt practice in the Middle Ages of purchasing indulgences for the forgiveness of sins. To my surprise I saw the same idea being developed in a recent issue of Time magazine by Michael Kinsley entitled "Credit for Bad Behaviour. If buying offsets can excuse excessive carbon use, why not other irresponsible acts?"

Kinsley points out that if you wish, when you buy a plane ticket, the airline will figure out how much carbon dioxide your trip will be adding to the atmosphere and charge you for it (for Boston to Los Angeles, around 5,000km, it comes to about US$9 per person).

The money goes to non-profit groups that either plant trees to absorb the carbon or produce an equal amount of energy in an eco-friendly way (using wind turbines and such).

In this way, you are still increasing the carbon dioxide in the air, but someone else (thanks to you), is reducing it by an equal amount. The net effect: no additional carbon dioxide in the atmosphere.

Similar deals are also available for other eco-embarrassments and it has recently been said that carbon credits can be uncharitably compared to the medieval practice of selling indulgences for the forgiveness of sins.

But indulgences are apparently misunderstood. The Catholic Encyclopaedia states that an indulgence "is not a permission to commit a sin, nor a pardon of future sin".

Rather than fully endorsing the use of carbon credits, I have no doubt that most environmentalists would wish to apply similar reservations about the criteria that these carbon credits must meet in order to be acceptable: they should not be a gift certificate or get-out-of-jail-free card for would-be polluters.

Kinsley suggested that maybe, if the idea weren't so closely associated with "hippies" like Al Gore, America's conservatives might see carbon credits for what they also are: a brilliant next step in the development of capitalism. What conservatives are finding offensive about carbon credits is actually not some green absurdity, but the very core of the capitalist economic system: a free exchange of goods and services.

Kinsley says that if a deal is voluntary, then by definition it leaves both parties to it better off otherwise they wouldn't do it. Put all these deals together and - with a few exceptions - you have free-market capitalism and prosperity!

The genius of carbon credits is that it opens up a whole new inventory of things that people can buy and sell. And there is no reason that the principle should be limited to environmentalism.

As an example, Kinsley (with his tongue firmly in his cheek?) suggests a "bad parenting surcharge" which would introduce a market in child-abuse credits, whereby poor parents who would otherwise do so, would refrain from hitting their children in exchange for being able to sell a credit for this to parents who want to hit their children.

Kinsley says that in the world we are living in, the greater the gap between rich and poor, both domestically and globally, the more a rich person will pay and the less a poor person will require.

The usual objections will arise such as "why should such people be able to buy their way out of environmental guilt, or their short fuses in dealing with their kids, when poor people can't?"

Kinsley suggests that if you are telling a rich person this is one thing he or she cannot buy, then you are also telling a poor person that this is one thing he or she cannot sell.

Reference: Time Magazine, 2/7/07.

John Blakeley

Kyoto Protocol Issues

The End of the Kyoto Protocol?

John Blakeley

I do agree that increasing greenhouse gas (GHG) emissions must be controlled and then reduced but I absolutely disagree that Kyoto is the most appropriate vehicle to do this. Surely

it must be crystal clear from what happened at the G8 meeting in June 2007 that it is almost a certainty that Kyoto will be dead at the end of 2012.

The existing developed country signatories to Kyoto will never agree to it being extended without the USA, China and India being involved, because they are the three major emitting countries which now collectively produce more than 50% of the world's man-made GHG emissions. The signatory countries are simply not going to endure any economic hurt from binding GHG emissions targets as long as those three countries are not involved.

On the other hand, it is very clear that the USA will never agree to join Kyoto and if they won't, there is no way that China and India will be persuaded to join Kyoto. (At the moment, the refusal by the USA to act on controlling GHG emissions makes it easier for India and China to "hide behind" America).

So a new agreement will have to be forged to take over from Kyoto in 2013 and that is what all the talk was about at the G8 meeting. There in a television interview with President Bush standing alongside him, I heard Tony Blair saying that they hoped to have a new agreement on the table by the end of next year. Blair has up till now been seen as the champion of the European position on climate change/global warming so if he is saying that, it is most unlikely that his fellow European leaders will take a contrary view.

If that new agreement does not include binding targets for GHG reductions (but only "best efforts" intentions, as in the 1992 Framework Convention on Climate Change), then the present Kyoto targets go out the window because when Kyoto ends in 2012, the countries with deficits will simply roll them over into the second commitment period (as the present Kyoto agreement allows them to do as a default position) and if there is no second Kyoto commitment period, then there is no penalty for doing this.

Even if the new agreement does involve binding targets (in my view, unlikely, but it could happen), it will be a new agreement and therefore unlikely that Kyoto requirements will retrospectively apply to it. (How if new countries joining this agreement do not have to pay for any past deficits, could countries now in Kyoto be bound by those past deficits?). It is very noticeable both at the G8 meeting and everywhere else, that people are now talking about either "Post-Kyoto" or "Beyond Kyoto". Nobody is now talking about Kyoto being extended.

I am sure that politicians in all Kyoto signatory countries are now very well aware of this situation even if they would never say so publicly. That will be one reason why although New Zealand is now showing in its forecast accounts a financial liability in 2012 of NZ$557 million (or thereabouts) and National politicians and the Greens are saying the figure should be NZ$1.7 billion, there is absolutely no move now for the NZ Government to purchase any carbon credits in anticipation of needing them. It is merely there on the Government's books as a future liability.

Kyoto has become very much a European agreement with which we are tagging along. It is only the Europeans that are taking Kyoto commitments seriously. Canada has already said that it will not meet its Kyoto commitments and is developing a "made in Canada" local approach to reducing GHG emissions. Canada is also supportive of the Asia-Pacific Partnership on Clean Development and Climate although it is not yet a member. Japan is a member of that agreement and if push comes to shove, is much more likely to go with the Americans in that agreement than continue with Kyoto. Russia is only in Kyoto because of the massive amount of carbon credits it has because of the "accident of history" of the collapse of the Soviet Union in 1990 being in the same year as the base year of Kyoto.

So as I see it, Kyoto continuance would only possibly be supported by the Europeans (and New Zealand?). Even within Europe, information suggests it is only well supported in Northern Europe, with both Southern European countries such as Italy and Spain (because they are already greatly exceeding their Kyoto targets)

and Eastern European countries objecting to its commitments being imposed through the EU.

As far as our own politicians are concerned, the latest IPCC Report shows clearly that although global warming will cause very serious effects in many parts of the world by the year 2100, there will not be a very serious change from the present before about 2030. This is not only "Not in My Term of Office" but also "Not in my Lifetime" as far as most politicians are concerned. So it is quite feasible for John Key to suggest a target of 50% reduction in NZ GHG emissions by the year 2050, or for Helen Clark to suggest carbon neutrality as the target with no time frame for achieving it. However a target for emissions reductions by 2012 as in Kyoto is causing extreme discomfort for politicians worldwide.

Reference: SEF News posting by John Blakeley, 8/6/07

G8 Deal Paves Way for Kyoto Successor?

An agreement at the G8 meeting on cutting greenhouse gas emissions has breathed new life into the search for a follow-up to the Kyoto Protocol (which is under the auspices of the United Nations).

But emerging (developing) nations are insisting that any new pact against global warming must allow them the "flexibility" they need to keep their economies growing. (This is a code for advocating no binding GHG emissions reductions targets for them).

In the Baltic Sea resort of Heligendamm, leaders at the world's wealthiest countries produced a declaration setting the goal of "substantial" cuts in global heat-trapping emissions and vowing to "seriously consider" Europe's aim of halving man-made greenhouse gas emissions by 2050.

This declaration paves the way for talks starting in Bali, Indonesia in December 2007 to find a successor to the Kyoto Protocol.

Reference: Sunday Star-Times, 10/6/07

Are NZ's Kyoto Liabilities Bigger than Estimated?

Both the National Party and the Green Party are accusing the Government of underestimating NZ's financial liabilities under the Kyoto treaty by more than NZ$1 billion.

The National Party's climate change spokesman, Dr Nick Smith says that the deficit is higher by about $1 billion than the deficit of around NZ$600 million admitted by the Government in its 2006 financial statements and that the country now faces a NZ$1.7 billion deficit on the five-year Kyoto commitment period (from 1 January 2008 to 31 December 2012).

Editor's Note: EnergyWatch 42, page 23 noted a Government estimate of NZ$656 million deficit during the Kyoto commitment period but the Minister of Finance, Dr Cullen had pointed out that the liability number "keeps bouncing around like mad".

Dr Smith's views are supported by the Green Party who consider that his estimate of NZ$1.7 billion may be too low.

At issue is the way in which the Treasury is calculating the liability. Dr Smith has asked the Auditor-General to investigate this because he thinks that the price of carbon being used in the calculation is too low and the liability is based on an old deforestation policy which the Government has not yet passed into law. He also said that forecasts of deforestation have gone up but this hasn't yet been factored into the calculations.

Dr Smith said that the official estimated deficit is based on projected deforestation of just 26,000 hectares, yet MAF papers now estimate that 47,000 hectares of deforestation will occur during the Kyoto commitment period. This change alone will increase NZ's carbon deficit from 41 million tonnes to 59 million tonnes.

The liability is calculated using projections for what will happen in particular areas such as energy, waste, agriculture and deforestation.

The present Treasury estimate is that NZ faces a liability of 41.2 million tonnes of carbon dioxide equivalent. A price is then attached to that and in February 2007, the price being used by Treasury was NZ$13.76 per tonne of carbon dioxide.

Both Dr Smith and the Greens co-leader, Jeanette Fitzsimons says the price of carbon will be much higher than the price which Treasury is using, and they cite international projections of closer to NZ$30 per tonne.

Ms Fitzsimons said that the Government's current liability figure was "unrealistic" and a carbon price of at least NZ$30 per tonne should be used.

Dr Smith has suggested that the Labour Party is embarrassed by having initially promised that NZ would make hundreds of millions of dollars out of the Kyoto Protocol during its first commitment period and that they are deliberately under-estimating the scale of the deficit.

But Climate Change Minister, David Parker, said that Dr Smith's claim that the liability could be as high as NZ$1.7 billion was "absolute nonsense" and that there is no way those figures are correct.

Mr Parker said that the Treasury figure was not based only on a European price for carbon on which Dr Smith has based his claims.

Reference: NZ Herald, 20/4/07 and NZ Energy and Environment Business Week 25/4/07

The price of carbon from 2008 to 2012 will have a big impact on NZ's Kyoto liability. The current price on the EU market for the December 2008 year is around 17.5 euros (NZ$32) per tonne.

This price is not to be confused with the December 2007 price on the EU market which has collapsed to less than 1 euro per tonne due to over-allocation of permits by EU Governments.

The December 2008 forward contract is where most of the European carbon trade now is. This is the second stage of the EU market, coinciding with the commencement of the Kyoto five-year commitment period.

Reference: NZ Energy and Environment Business Week, 25/4/07

Editor's Note: To date the NZ Government has not actually purchased any carbon credits in anticipation of needing them, but is merely regarding this as a future liability. Because of uncertainty over the future international price of carbon credits, it is most unlikely that the Government will actually make a move to purchase any of these credits until 2012, the final year of the commitment period under the Kyoto Protocol.

The price of carbon credits in that year will depend very much on the course of events which unfolds over the next five years.

If the present forward European price of carbon (from 2008 onwards) holds up till then, the estimate of NZ$1.7 billion being required may well be correct to meet NZ's Kyoto Protocol commitment.

However it must be borne in mind that Russia and some eastern European countries (including the Ukraine) are holding a very large quantity of carbon credits. As stated earlier, this is an "accident of history" because the base year for the Kyoto Protocol is 1990, the same year as the Soviet Union empire collapsed, as a result of which many very dirty and inefficient industries went out of production.

When it ratified Kyoto, Russia must have assumed that the USA would be a potential purchaser of most of those credits it was holding, but with the USA making no move yet to sign up to Kyoto, and with most countries now thinking ahead to the period from 2013 onward as being "beyond Kyoto", there may not be a purchaser for nearly the amount of credits which Russia is holding, in which case it could "flood the market" in 2012 if it chose to put those credits up for sale, dramatically lowering the market price of carbon credits.

If that happened the NZ Treasury estimate of NZ $656 million or an even lower figure may be appropriate.

The situation will be further complicated if a number of countries (e.g. Canada) which have ratified Kyoto decide to either withdraw before

2012 or else exercise the default option. Under this option, the emissions deficit on their Kyoto target up to 2012 is added on to the amount of reduction of greenhouse gas emissions demanded in a post-2012 agreement requiring compulsory emissions targets (if any such agreement is reached).

Such actions before or during 2012 from Kyoto signatory countries could further limit the total amount of carbon credits being purchased by countries in 2012, resulting in a lower price for these credits.

Business NZ says Kyoto Liability Could be More than $3 billion….

Business NZ has released a discussion paper which suggests that businesses might have to stump up nearly NZ$3 billion more than is currently being estimated by analysts for the Government to cover the liability during the five-year commitment period of the Kyoto Protocol (1/1/08 to 31/12/12).

The suggested total liability could be as much as **seven times** the $537 million provided for the Government's current balance sheet.

Business NZ says that this is because individual businesses do not have the international purchasing power on the world carbon markets that the Government has in buying carbon credits. If businesses are forced to meet the liability themselves, they will simply pass the costs on to their customers.

The Kyoto Protocol deal NZ agreed to (and ratified in late 2002) is to cut emissions to 1990 levels starting in 2008, and any amounts over this between 2008 and 2012 have to be offset by buying carbon credits.

Business NZ have estimated that the deficit may now be about $686 million over the five year period if the Government picks up the tab.

If forced to pick up the tab themselves, businesses have three options. They can cut output, introduce new energy efficient technologies, or buy carbon credits.

The problem with cutting output is that profits would also be cut. Many firms would be unable to improve their energy efficiency in time to meet the Kyoto deadlines. Therefore, the default option for most businesses will be carbon trading.

While Business NZ acknowledges in its discussion paper that its figures may not be as "refined" as those available to the Government, and are likely to be debated "for many reason", it says that its aim is to prompt further discussion on the issue.

It assumes that Treasury officials are wrong to estimate the costs of carbon credits at around $13 per tonne. It notes that the present international price is around NZ$30 per tonne and some experts have even suggested that the price could rise to NZ$60 per tonne over the next five years.

(If the $686 million Treasury estimate is multiplied by 60/13, it becomes $3.175 billion).

Finally, the Business NZ discussion paper notes that the impact on the NZ economy of businesses having to purchase carbon credits will be greater than the cost of purchasing the credits. This is because (for example) increased electricity prices resulting from purchasing carbon credits, will be applied across the board to all forms of electricity generation and not just to the thermal power stations burning fossil fuels which produce carbon dioxide emissions.

Reference: The Business, NZ Herald, 25/6/07

…But the Minister Disagrees

on Radio NZ's "Morning Report" on 25 June, it was noted that Business NZ is suggesting that carbon trading will add significantly to the cost of living in NZ by up to $3.5 billion in the next five years.

The Government's carbon trading proposal is that individual businesses and other organisations will have to purchase carbon credits for themselves which will at least partially offset the Government's obligation under the Kyoto Protocol to purchase these carbon credits by 2012.

In response to the Business NZ discussion paper, Climate Change Minister, David Parker, said that they were "scaremongering" and he believed that the Treasury estimate of a NZ liability of about NZ$600 million (about 0.1% of GDP) is likely to be "about right" because the international price of carbon credits is likely to be a lot less (about NZ$13 per tonne?) than the present price per tonne of around NZ$30 on the European carbon market. Treasury had referred him to a recent article in "The Economist" magazine which supported this view.

The presenter pointed out that Business NZ has also claimed that it would be better for the Government to purchase these credits on international markets than for individual companies to do so, because of the Government's much increased negotiating powers due to the much larger quantities which would be involved.

In response to this, David Parker said that he felt that Business NZ should stick to its earlier position that markets are the best way of handling these issues, rather than the Government being involved in footing the bill and seeking to limit GHG emissions through regulations.

David Parker has also recently said that he is confident of pegging back NZ's GHG emissions by about 20 million tonnes (of carbon dioxide equivalent) during the first Kyoto period from 2008 to 2012, with proposed initiatives to be announced late in 2007.

The Ministry for the Environment's (MfE's) latest projection is for NZ to exceed its target by 41 million tonnes during the five-year Kyoto commitment period. This would cost the country about NZ$537 million based on Treasury estimates.

David Parker said that in the short-term, the MfE's estimates of NZ's Kyoto liability may continue to rise as the economy keeps growing and deforestation continues. But from next year on, once Government policies on energy and climate change "start to bite" he expects that figure to drop back to around 20 million tonnes over the Kyoto target (a triumph of hope over reality, especially considering the rapid growth in GHG emissions in recent years?)

Reference: NZ Energy and Environment Business Week, 27/6/07

…and the NZ Listener Says

What is more interesting is the "story behind the story". Business NZ's real game in publishing its NZ$3.5 billion Kyoto price tag was to flush out whether David Parker is planning to forge ahead with a narrowly-based emissions trading scheme next year, under which at least some of the nation's Kyoto liability would be devolved to individual businesses.

The answer they got was "Probably".

Possibly as early as next year, some sectors - such as electricity and energy-hungry industries like cement making - are likely to be corralled into a cap-and-trade scheme that will gradually be extended to include all sectors of the economy.

The central point of conflict is that Parker wants to get a trading regime up and running as soon as possible, while the business lobby wants the Government to take its time in developing a detailed scheme that wouldn't become operational until after 2012, until which time Business NZ considers that the Government should carry the cost of the Kyoto deficit.

On the other hand, Parker wants the cost of carbon to start filtering through the economy - therefore creating an economic incentive to reduce GHG emissions - as soon as possible.

Business NZ, while accepting that companies and organisations will eventually have to pay the price of their GHG emissions, worries that if NZ rushes ahead of major trading partners such as Australia, exporting companies will be seriously disadvantaged.

Reference: NZ Listener Editorial, 7/7/07.

Business NZ Kyoto Cost Estimates Wrong?

A leading European carbon advisory service has refuted claims by Business NZ that a carbon trading scheme would increase NZ's Kyoto compliance costs. The European Carbon

Investors and Services Association (ECIS) describes figures quoted by Business NZ that NZ's Kyoto liability could blow out to NZ$3.5 billion in 5 years, as "off the mark".

ECIS says that emissions trading has been demonstrated in Europe, Japan and the USA to be a cost-effective way of meeting environmental targets and the same will apply in NZ.

Business NZ have suggested that the NZ Government can buy cheaper carbon credits than the private sector, but in reality many governments have already discovered that they have to compete with the private sector on the same footing. But ECIS says that figures quoted by Business NZ that carbon credits will cost NZ$35-50 (19-27 euros) per tonne are "way out of line with reality".

Broker quotes for Kyoto-compliant carbon credits suggest that these can be bought in the 4 to 15 euro range (NZ$7-27 per tonne).

ECIS notes that Europe's credits tend to be the most expensive in the world because of specific conditions in the European Trading Scheme but still cost one third less than the lower end of the Business NZ esimtates.

Reference: NZ Energy and Environment Business Week, 4/7/07

Editor's Notes: the above information from ECIS is at odds with earlier information that the futures market in Europe is signalling a price of around US$33 per tonne (NZ$42 or 23 euros) when the second phase of the EU carbon market opens next year.

While the first phase of trading on the EU carbon market has been a "disaster", with carbon being worth almost nothing because of an over-allocation of credits, the second phase looks to be more successful, with prices high enough to stimulate investment in cleaner technologies (under the CDM).

The third phase of the European market will open in 2013 (post-Kyoto) and analysts are picking a carbon price around US$66 per tonne (NZ$84 or 46 euros).

If this does happen, it will radically change the economic competitiveness of carbon-emitting technologies.

Reference: NZ Energy and Environment Business Week, 13/6/07

This information suggests that the Business NZ view on NZ's future liabilities under the Kyoto Protocol may be "closer to the mark" than the view of the ECIS.

… and the Key Unanswered Question Is

It now seems highly likely that the Kyoto Protocol will be dead on or before 31 December 2012. It will collapse either when a number of signatory countries withdraw because their financial liability under Kyoto is much higher than they anticipated, or because with Kyoto being replaced in 2013 by a different type of agreement which probably will not include binding targets, these and other countries will exercise the "default option" to transfer their financial liability into a non-existent Kyoto second commitment period.

As Massey University Energy Researcher Dr Peter Read has recently stated,

"NZ is not alone in failing to meet its Kyoto targets. As it seems that everyone else is also falling down on their 2008-2012 commitment, there is going to be rather a shortage of carbon credits to buy at any price, so the shortfall is not going to be met by expensive purchase of credits on the world market. No doubt NZ, along with everyone else that continues to participate, will roll over their commitments in mutual non-compliance, and incur the relevant slap on the hand".

Reference: SEF News posting by Dr Peter Read, 16/6/07

So the key question is ……What will happen to international carbon trading if and when the Kyoto Protocol "falls over"?

Does Kyoto provide the essential underpinning to enable such carbon trading to continue and to grow rapidly, so that without Kyoto or an equivalent successor being in place for the foreseeable future, the price of carbon on international markets could collapse?

Or has international pressure of public opinion reached the stage by now that carbon trading can continue to flourish despite the likely forthcoming demise of the Kyoto Protocol? Only time will tell.

If from next year the NZ Government forces companies and organisations to purchase carbon credits to offset their GHG emissions over and above a set limit, and the international carbon market subsequently collapses before 2013, these companies and organisations may be left holding on to worthless pieces of paper for which they have paid many millions of dollars - and would the Government then accept any liability?

At least with the now-abandoned carbon tax proposal, the Government would be holding on to the money collected, presumably with the intention of using it to partly pay for its own purchase of carbon credits in 2012 if Kyoto has survived till then.

Under the Government's likely carbon trading proposal, all this money to purchase carbon credits will have disappeared by then, into the hands of sellers of carbon credits - probably mainly offshore.

Footnote:
"Cap and Trade" means that the Government puts an upper limit on the greenhouse gas emissions which individual companies and other organisations will be allowed to emit without charge. Any emissions above this level must be balanced out by the purchase of carbon credits. The key issue in the cap and trade arrangement is to set the cap at the appropriate level, which will be very difficult to judge.

Obviously if the cap is set too high, the Government will pick up a larger share of the NZ financial liability under the Kyoto Protocol and GHG emitting organisations will have to purchase less carbon credits than otherwise.

It is expected that at least initially, the cap will be set at different levels for the different sectors responsible for producing NZ's greenhouse gas emissions.

An important aspect of the Government's carbon trading proposal is that initially, it may not include transport fuels, which presently comprise 16.4% of NZ's total GHG emissions for road transport, plus another 2% for other transport (rail and domestic sea and air).

It is also not yet clear how carbon trading will be applied to methane emissions from ruminant animals (31.5% of NZ's total GHG emissions) and nitrous oxide from the agriculture sector (17.5% of NZ's total GHG emissions).

On the other hand it is proposed to apply carbon trading rigorously from sometime next year to the "stationary energy" sector, and particularly to electricity generation (10% of NZ's total GHG emissions in an average year or up to 12% in a dry year) and to large industries.

The application of the Government's carbon trading proposal therefore appears at least initially, to be quite selective.

Carbon Trading

Widespread Failings in Fledgling UK Carbon Market
Recent experience with carbon trading in the UK should sound a warning note for NZ as the Government looks set to announce plans for a cap-and-trade system here in NZ.

A Financial Times investigation shows that UK companies, and also individuals and organisations wishing to "go green" have been spending millions of pounds on carbon credit projects that yield low, if any, environmental benefits.

The newspaper has uncovered widespread failings in the new UK carbon markets, suggesting that some organisations are paying for emissions reductions that do not take place.

Other organisations are meanwhile making big profits from carbon trading for very small expenditure, and in some cases for efficiency gains that they would have made anyway (that is, there is no "additionality").

Other findings from the investigation include:

- Companies setting up as carbon off-setters without appearing to have a clear idea of how the markets operate.
- A growing number of carbon brokers providing services of questionable or no value.
- A shortage of verification, making it difficult to assess the true value of carbon credits.
- Companies and individuals being charged "over the odds" for the private purchase of EU carbon permits, which have plummeted in value because they don't result in emissions cuts.

HSBC, the UK's largest bank, which went carbon neutral in 2005, has become so disillusioned with the UK carbon market that it has decided to fund its own carbon reduction projects directly.

Reference: NZ Energy and Environment Business Week, 2/5/07

Government Plans Local Emissions Trading

A domestic GHG emissions trading system designed to help NZ meet its Kyoto Protocol targets will be phased in from next year, Climate Change Minister, David Parker indicated in early May.

Mr Parker said that final decisions on the trading system will not be made until September this year, but it is clearly now the Government's preferred option, after its earlier preference for a universal carbon tax fell over through lack of support.

Mr Parker believes that emissions trading would involve less than 100 companies in major emissions areas such as transport, energy, deforestation and agriculture. Each is to be given a limit on its allowable emissions - yet to be worked out.

Permits to emit are created within the cap, and large businesses within each industry area assigned a certain volume of permits.

A company that emits below its permitted entitlement is able to sell its excess permits to a company that goes over its limit. The market will determine the price.

A company that goes over its limit might also be able to earn or purchase credits in another area, such as forestry.

A lot has not yet been decided about emissions trading in NZ, including where the cap will be set for different emitters, which industries will have their allocation handed to them and which will have to buy into the system, and how long industries will have to make the transition.

It is expected that for agriculture, which accounts for just under half of NZ's GHG emissions, the trading entity would be dairy companies rather than individual farmers.

The co-leader of the Green Party, Jeanette Fitzsimons welcomed Mr Parker's statements, but said that the hard decisions on how to allocate emissions permits had not yet been made. "If they are given to those who currently emit carbon, it will give a windfall to the worst polluters and stifle innovation".

National Climate Change Spokesman, Dr Nick Smith said National remained open to talks on the issue with the Government, but with the Kyoto Protocol coming into effect on 1 January next year, climate change policy "remains in a vacuum".

Prime Minister Helen Clark is in no rush to put a target year on when NZ should reach the goal of "carbon neutrality", as Norway has done by setting a date of 2050.

Helen Clark said that she would like NZ to achieve carbon neutrality before Norway. "I'd like to see the policy path leading us to say a date that is feasible, rather than plucking something out of the air" she said.

Reference: NZ Herald, 9/5/07.

Electricity Generators and Industries Face Emission Caps

NZ power producers and major industries may have their emissions capped as early as next year under Government plans to encourage greater use of non-polluting electricity sources and better energy efficiency.

Energy Minister, David Parker said in early May that the Government will spend the next three months designing a system to limit GHG emissions and to allow trading of surplus emissions entitlements (above the limit).

Over time, industries including dairy and meat companies will be included, based on their ability to reduce pollution at least cost. David Parker said "If this proceeds, trading would start next year for some sectors".

Parker added "Some sectors can do more because they have more cost-effective choices". He refused to say which industries would be included first.

At present, about half of NZ's GHG emissions come from the agriculture sector while only about 10% come from electricity generation. Even though this 10% figure is a low proportion of total GHG emissions, Parker had previously advocated a carbon tax on electricity generation.

Parker has said that no new work is being done on that carbon tax plan, because it would have unfairly focused on the electricity industries when all parts of the economy needed to bear the cost of their GHG emissions.

NZ's GHG emissions rose by 24.7% from 1990 through to 2005, as the expanding economy increased energy and transport use, and a slump in forestry earnings reduced planting of trees, which absorb carbon dioxide emissions.

Parker said that fewer than 100 companies are likely to be directly involved in trading. This will include major companies like Fonterra and Rio Tinto's Tiwai Point aluminium smelter.

Under the earlier and now-abandoned carbon tax plan, exporters including the aluminium smelter and the oil refiner NZ Refining were to be granted exemptions to protect their economic competitiveness.

Parker said that exemptions were unlikely under the now-proposed carbon trading system, and risk to industry would instead be reflected by the timing of the entry of some companies into the carbon trading regime, and the stringency of the emission caps which they would face.

Parker said that Treasury estimated that the impact of GHG emissions trading on economic growth through to 2017 would be negligible.

Reference: NZ Herald, 9/5/07

Carbon Trading Salves Guilty Consciences?

Landcare Research administers a carbon credit scheme and pays land owners NZ$15 per tonne of carbon dioxide sequestered in land set aside for reforestation.

Although the Landcare scheme appears to be reputable and is subject to monitoring and auditing, other carbon offset schemes - involving everything from planting trees in Uganda to buying low-energy light bulbs for distribution in developing countries - don't fare so well.

Planting trees, for example, to offset air travel emissions will work but it can take up to 100 years or more for the trees to grow enough to recapture the carbon dioxide emitted by that air flight.

It is easy to see why many say that the logic of offsetting is fundamentally flawed. Rather than reducing emissions, offsets simply defer the problems. Carbon trading is an economically expedient game to salve guilty consciences.

Anne Smith of Landcare Research agrees that offset schemes that are not tied to actual emissions reductions are little more than throwing money at a problem to "balance the books".

To counter "greenwash" - including the forward buying of carbon credits in schemes which fail or don't materialise - Anne Smith says that there must be science and third party auditing on both sides of the balance sheet.Dr Susan Krumdieck, SEF member and mechanical engineering associate professor at the University of Canterbury believes that there is another better way of offsetting carbon dioxide emissions, and that is to measure the fossil fuel content of products.

She says that a "carbon footprint" tells you what happened as a consequence of fossil fuel use, but not how to fix it. "What you really need to

know is how much fossil fuel you are using and what you can do to use less".

Susan Krumdieck advocates a label that uses megajoules to show the fossil fuel used in making a product, in a manner similar to the calorie content information shown on food labels.

Reference: NZ Herald, 7/7/07.

Should Carbon Offsets from Wind Farms be Permitted?

Dr Susan Krumdieck said that building wind farms in NZ doesn't reduce the amount of gas and coal we burn to generate electricity. She points out that even the most efficient wind farms in NZ operate efficiently for only about 50% of the time.

She also points out that for every 600 megawatts (MW) of wind generation of electricity, engineers know that they need to have 600MW of thermal power generated from gas or coal. (This statement must assume that there will be no further development of hydro-electric power generation in NZ).

She says that this is because of the continuously increasing demand for electricity in NZ, coupled with the thermodynamic reality of running thermal power stations, which are not easily turned on or off (depending on whether the wind is blowing or not blowing).

Reference: NZ Herald, 7/7/07.

Editor's Note: The above argument is a long standing one about the effectiveness of new wind farm projects in reducing carbon dioxide emissions.

The counter argument is that in NZ, we have a substantial amount of storage in our hydro lakes which can act as a "battery" being charged when the wind is blowing and hydro generation is lowered, but then discharged when the wind stops blowing and hydro generation has to be increased again.

The basic issue is that the capacity of the NZ electricity system is energy constrained rather than (normally) being governed by peak load requirements, so that given an assumed constant amount of hydro capacity in the system overall, should an increase in wind generation capacity need to be balanced by an equivalent additional capacity of additional thermal power generation?

My view would be that on a country basis, NZ should be able to account for wind power generation credits in its electricity generation system as far as Kyoto Protocol liabilities are concerned, because the NZ Government can give a complete statement of overall electricity generation and a breakdown of types of electricity generation in the overall figure.

However it is debatable whether or not developers of new wind power projects should be able to claim carbon offsets for the renewable electricity generation produced, without accounting for how back up generation will be provided when the wind is not blowing.

UN Defends Kyoto Carbon Offsets

The United Nations is fighting back against claims of fraud involving projects to offset GHG emissions under its Kyoto Clean Development Mechanism (CDM).

The environmental group WWF claims that the UN process is allowing projects to fraudulently "cash in" on the new trade, even if they don't meet the criteria.

But a UN climate change chief says that unscrupulous projects falsely claiming to cut GHG emissions are isolated incidents, if they exist at all, and that this is part of the teething pains of the new market.

Explanatory Note:

A condition of projects funded under the CDM is that they would not have happened otherwise (in Kyoto jargon they must have "additionality").

The problem is that developing countries are already trying to rort the system.

There is strong evidence that project developers in India routinely fake documents to make projects appear as if they only happened because of the Kyoto CDM. And this kind of fraud is sure to get worse, given the nature of human greed.

Reference: NZ Energy and Environment Business Week, 27/6/07

Carbon Neutrality/Carbon Credits

Carbon Neutrality requires More Forests

If the present Government is serious about moving towards its ultra-ambitious goal of making NZ carbon neutral, then it is going to need the planting of massive amount of trees to absorb the quantities of carbon dioxide required to get net emissions of GHG down to zero.

However merely talking about carbon neutrality will not be enough and neither will the "tokenism" of a handful of Government departments becoming carbon neutral.

According to the Ministry of Agriculture and Forestry, annual planting of new trees has fallen from a high of 98,000 hectares (ha) in 1994 to just over 5,000ha in 2006. Also replanting after harvesting of existing forests is declining. Nearly one third of forests harvested in 2006 are expected to be converted to another land use, much of it methane-producing dairy farming.

The Government is at high risk of the focus of the climate change debate shifting to the "credibility gap" between its carbon neutral rhetoric and its likely future failure to make even slow progress in that direction.

But for now, the Government has secured "political ownership" of carbon neutrality and is riding that bandwagon for all it is worth.

Private sector companies and state corporations are now eager to attach the carbon neutral label to themselves, mainly for reasons of self-promotion and also for self-preservation in the case of those selling products to environmentally aware consumers in distant foreign markets.

The National opposition party has now undercut the Government by promising to give the forestry sector an as-yet unspecified amount of the carbon credits created by NZ's ratification of the Kyoto Protocol. The Labour-led Government has accused National of being irresponsible in offering what it says would be a NZ$1 billion-plus windfall to foresters.

This argument over carbon credits for forests has been going on since 2002 when the Government opted to retain them rather than distributing them to owners of forests planted post-1990.

The simmering anger over what these forest owners claim is the theft of their property rights found an outlet with the release in December of the draft sustainable land management strategy and the calling for submissions on it.

This discussion document appeared to raise the possibility of a deforestation levy and the suggestion was made that land owners would be penalised by up to $13,000 per ha if they cut down trees and turned their land to new uses. (Note that this would likely apply to all trees and not just to post-1990 forests).

This was of great concern to many forest investors, even though such a levy is only a proposal at this stage - and likely to go the same way as the Government's proposed flatulence and carbon taxes.

The Government argues that it is essential that climate change policy be consistent and fair across the whole economy, otherwise the policy will not get buy-in from big GHG emitters.

However the forestry sector claims that its contribution to emitting GHG is going unrewarded, while the GHG-emitting agricultural sector gets away scot-free.

The Green Party have urged the Government to consider handing over some portion of these carbon credits obtained under the Kyoto Protocol for post-1990 forests, as a much-needed incentive to get new forests planted.

Reference: Article by John Armstrong, NZ Herald, 17/3/07

Fewer Words Needed - and More Action

The 1984-90 Labour Government socialised the car. Families who had been barely able to keep an old car on the road could now buy a decent secondhand imported car, thanks to abolition of quotas and cuts in tariffs.

But all these cars are now in the way of the grand plan of NZ to be the first carbon neutral country.

Can the Government now take away from the people the cheap fuel-inefficient secondhand imported motor car? In the process it would put up the price of all cars and make them less affordable to the people.

Among the problems with the carbon neutral grand plan are:

1. The measures needed to implement it would be regressive. Without generous compensation, they would hit the least well-off disproportionably hard.

2. Policies to cut carbon emissions may cut across traditional policy objectives of the Labour-led Government. As an example, the Resource Management Act (RMA) puts a high value on local input into and local control over resource consents and land and water use. But the local emphasis in the RMA works counter to the carbon neutral grand plan for a national priority on renewable electricity generation, under which wind farms and geothermal and hydro electricity generation projects will need to be fast forwarded - and the water rights to go with them.

Reference: Article by Colin James, NZ Herald, 3/4/07

"Clean Green Image" Can't be Bought with Carbon Credits?

George Bush and John Howard have both recently changed their position on climate change/global warming.

Howard's goal and Bush's goal is to keep their countries rich. Howard says that no jobs, not even coal jobs, are to be jeopardised. Bush's aim is security of energy supply for Americans, including if necessary, coal-to-petrol.

So Bush is throwing subsidies at farmers to grow corn for ethanol. Yet American corn-ethanol has little effect on GHG emissions. Nearly the same emissions are released in growing the corn and processing it as by burning petrol. It looks green but it isn't.

Corn for ethanol also uses up food land for fuel. This may be fine for Americans who can afford to buy what they want. But competition for food land pushes up prices for food, especially grain. That is not fine for poor people in poor countries.

As the biofuel craze grows, not least in NZ, pressure will grow to convert more tropical rain forest land either for biofuel crops (palm oil in South East Asia) or food crops displaced by biofuel crops (sugar in Brazil). As a result, the carbon footprint might diminish in rich countries but grow in the less-well-off supplying countries. That is hardly the point of an international greenhouse agreement.

NZ as a rich country is about to join in this process. We will need to purchase GHG emission credits on the international market to meet our 2008-2012 obligations under the Kyoto Protocol. **This will not polish the "clean-green, exemplary – international good-citizen brand" we appear to be aspiring to as a nation.**

And if we really want that brand, we must ask a deeper question. Will action on climate change/global warming to reduce GHG emissions, actually worsen international inequalities between rich and poor countries?

What is the implication for NZ if we want an exemplary "clean green" brand to keep rich-country-carbon-footprint-conscious consumers buying NZ goods?

No buying carbon credits abroad? No palm oil biofuel shortcuts? What is required is actually cutting GHG emissions.

That is a very big call. Easier to let go of the "clean green" brand?

Reference: Article by Colin James, NZ Herald, 5/6/07

Reducing Agricultural Emissions

Report for Sustainability Council

A report by economist Simon Terry argues that farmers could almost meet their share of NZ's target for GHG emissions reduction under the Kyoto Protocol by doing something which it makes financial sense to do anyway.

The report for the Sustainability Council is entitled A Convenient Untruth, a reference to the common claim that agriculture can do little to reduce its GHG emissions, so the taxpayer has to pick up the bill.

Farm emissions of nitrous oxide - a GHG much more potent that carbon dioxide - account for about one sixth of national GHG emissions and nearly twice as much as is produced by all the gas and coal burned in thermal electricity generation in NZ.

NZ's Kyoto Protocol Target

Simon Terry said that NZ was forecast to exceed its Kyoto emissions target for the 2008-2012 five-year commitment period by 29% in gross terms, or by 10% when the offset for the carbon sequestration by post-1990 forests was taken into account.

Agricultural gases, which make up 48% of NZ's GHG emissions, are about two-thirds methane and one-third from the nitrous oxide which comes from animal waste (dung and urine) and from nitrogen fertilisers.

Simon Terry says that using nitrification inhibitors and other techniques to reduce nitrous oxide emissions could eliminate 18.5 million tonnes of carbon dioxide equivalent - or almost half of the national total of excess emissions over the Kyoto target during the five-year commitment period.

Nitrification Inhibitors

Nitrification inhibitors are chemicals which prevent soil nitrogen turning into nitrous oxide, or into nitrates which leach into waterways, polluting them. Instead the nitrogen remains available for pasture growth.

Simon Terry says that the fertiliser manufacturer, Ravensdown, was sure that its nitrification inhibitor was a cheaper option than urea fertiliser for increasing pasture growth.

In addition, the report notes that nitrification inhibitors generally boost pasture growth more economically than urea fertiliser, so farmers would benefit financially, making it a win-win solution.

Results obtained from recent trials of nitrification inhibitors show an average 70% reduction in GHG emissions from pasture land and undermine the assumption underpinning a 2003 memorandum of understanding between the Government, Fonterra and other agricultural bodies, under which the Government undertook to bear the cost of farming's non-carbon dioxide emissions under the Kyoto Protocol which runs until the end of 2012.

In the above 2003 memorandum, the Government accepted that farming had no way of cutting such emissions (and therefore should be the last rather than the first sector to have its excess GHG emissions priced).

Ravensdown's product had been available since 2004 and the Ballance fertiliser company has a similar product.

Ravensdown has said that its nitrification inhibitor is used on 25% of dairy pasture in Canterbury and North Otago, but the national figure was about 5%.

Its use would spread if dairy farmers were exposed, through Fonterra, to the cost of their emissions and could claim back an offset from using nitrification inhibitors to reduce them.

Federated Farmers president, Charlie Pederson, said that he used nitrification inhibitors on his Manawatu property. But he also said "I don't think that they have been well promoted. And I don't think that many farmers are aware that they are a potential climate change tool".

Government Looking at Options?

The Government is looking at several options for farmers to encourage reduction of their GHG emissions, including a tax on nitrogen fertilisers, requiring farmers to offset their GHG emissions by planting trees and switching to biofuels, and a tradeable permit regime for farm emissions.

References: NZ Herald, 27/6/07 and NZ Energy and Environment Business Week, 4/7/07

Electricity Matters

Review of Electricity Market

The Electricity Commission (EC) held a series of public meetings during July as part of its review of the electricity market.

The review follows a Government inquiry last year which concluded that the current market framework should be retained, but opportunities for improvements should be pursued.

The EC notes that there have been significant changes to the industry structure, technology and fuel costs since the present electricity market was established in the mid 1990's.

The review focuses on security of supply, prices, competition and opportunities for demand-side participation. It will also look at the potential impact of wind generation on the NZ electricity system.

The wind investigation papers, mostly provisional and dated May 2007, can be seen on the EC website at: www.electricitycommission.govt.nz.

The submissions received on the Market Review Issues Paper are now also on the EC website, and a more substantive paper is yet to be released by EC.

Record NZ Electricity Demand

Cold weather experienced in June saw NZ electricity demand reach new records both for peak demand and for daily electricity usage.

Transpower recorded a peak national demand of 6919MW between 5.30 and 6.00pm on Wednesday 20 June. This is 2.5% higher than the previous record demand of 6748MW last winter.

On 20 June both a new North Island record of 4619MW and a South Island record of 2311MW were set, but in different half hour periods.

Total national electricity demand in one day also reached an all-time record on Wednesday 20 June of 136.2GWh. The previous 24-hour record was 132.6GWh set last year on Tuesday 27 June.

Despite a mild April and May being experienced in 2007 before the colder weather in June, total electricity use for the year up to late June in 2007 was running about 2.5% up on 2006 at the same time.

Reference: NZ Energy and Environment Business Week, 27/6/07

Editor's Note: As reported earlier (EnergyWatch 41, pg 28) the previous record for peak electricity demand was 6748MW, between 5.30 and 6.00pm on Thursday 29 June 2006. This peak was also a record high for the North Island of 4505MW. The previous South Island record of 2248MW was set a day earlier on 28 June 2006.

Winter South Island Electricity Concerns

In May concerns were expressed that NZ could be short of hydro-electricity during the present winter, but the concerns have since largely dissipated.

Electricity spot prices did rise rapidly around mid-April as levels in the South Island hydro lakes decreased, and both March and April were dry months for these lakes. The storage held in the Waitaki catchment dropped by 25% with lakes Pukaki and Tekapo being just over half full at the end of April.

Further south, lake Te Anau was then 41% full (normally 55% at that time of year) and lake Manapouri at 39% (normally 57%). This meant that Meridian Energy had to draw on electricity generated in the Waitaki catchment to help feed the aluminium smelter at Bluff.

During May, inflows to lakes Manapouri and Te Anau increased, enabling Meridian to return the Manapouri power station to full operation. This also saw the levels of both lakes Tekapo and Pukaki slowly recovering as this water was no longer required to generate electricity to feed to the Bluff smelter.

South Island electricity demand has risen significantly in recent years without any major new electricity generating scheme coming into production for the last 20 years (since the Clyde project).

Therefore a prolonged cold snap could have put the South Island generating system under severe strain over the present winter (also bearing in mind the limited capacity of the HVDC link to transfer electricity from the North to the South Islands). Fortunately this situation has not since eventuated.

Reference: Independent Financial Review, 9/5/07 and NZ Energy and Environment Business Week, 30/5/07.

Huntly e3p Enters Electricity Market

Genesis Energy has officially taken over operation of the Huntly e3p power station from the lead contractor, Mitsubishi Corporation, after a four month rigorous commissioning programme.

The $520 million combined-cycle gas-turbine plant has now proved its ability to run at 400MW and the introduction of e3p into the electricity market as a base-load generator will improve NZ's security of supply and ease pressure on hydro reserves.

(Earlier in the winter with concerns over South Island hydro lake levels, there was a view that much might depend on the continuing operation of e3p if this was indeed a dry winter, but those concerns have now been largely alleviated).

Gas to supply the e3p plant will initially be sourced from the Maui and Pohukara gas fields, while the new $950 million Kupe field will start delivering gas to the e3p plant from mid-2009.

Reference: NZ Energy and Environment Business Week, 4/7/07

More Electricity from Hydro and Wind

Statistics NZ's latest figures show that for the quarter ending 31 March 2007, electricity from hydro and wind rose by 17% compared with the March 2006 quarter, while thermal sources of electricity decreased by 19.4% leading to a small overall increase in electricity generation.

Note that the proportion of electricity produced by hydro (in particular) is much larger than the proportion produced by thermal energy so a lesser percentage increase in hydro and wind than the percentage decrease in thermal, can still lead to an overall increase in electricity generation.

When combined, hydro and wind supplied 66% of the total generation in the March 2007 quarter. This compares with only 57% in the March 2006 quarter, when hydro lake levels were well below average and this 57% figure was the lowest March quarter ratio since these figures have been collected (from 1959).

Hydro lake levels were above average over the first half of the March 2007 quarter, dropping to below average over the second half of the quarter.

When the electricity being generated from other renewable sources (geothermal and biomass) is added in, the total electricity being generated from renewable resources in the March 2007 quarter was 74% of the total. This compares with 64% in the March 2006 quarter.

In the year ending 31 March 2007 NZ's total electricity generation was 40,146GWh, up by 1.6% compared with the previous 12 months.

Editor's Note: There is a difference of about 1800GWh between the above annual figure and that published in the Energy Date File (EDF) by the Ministry of Economic Development. This is because EDF includes electricity generated from industrial co-generation projects whereas the SNZ figure only includes grid-connected electricity generation (Refer EnergyWatch 42, pg 8).

References: Statistics NZ Media Release, 6/6/07 and NZ Energy and Environment Business Week, 13/6/07

Contact to Spend $2 billion on Renewable Energy

Geothermal and Wind Proposals

On 23 February 2007, Contact Energy announced plans for a $2 billion investment in renewable electricity generation over the next five years, including two wind farms and two new geothermal plants.

Meanwhile Contact has deferred its decision for 18 months on whether to build a 400MW gas-fired power station (Otahuhu C). However Otahuhu C is still likely to be eventually built to provide security of supply (especially as a base-load generator).

During the next 18 months, Contact expected the Government to finalise a market-based pricing system for carbon emissions which would ensure the financial viability of its renewable energy programme.

The two new geothermal plants will cost $1 billion, one of up to 217MW at Te Mihi, a few kilometres west of the Wairakei power station and another of up to 200MW at Tauhara, to the south east.

Contact also expects to develop 500MW of wind power capacity at two wind farm sites over the next five years at a cost of about $1 billion. The company has a total of four possible sites for its wind farms and will likely develop the other two sites in five year's time, once the first two are completed.

Reference: NZ Herald, 24/2/07.

Contact's Submission on the Draft NZES

In its subsequent submission on the draft NZ Energy Strategy, Contact noted that wind power has an important role to play but has limited value, particularly in delivering firm peak demand capacity. Other forms of renewable energy will need to play a more prominent role and Contact believes that in this context, geothermal energy is of great strategic importance.

Future of the Huntly Coal-fired Station?

Contact has told its investors that the NZ electricity industry could make a 40% cut in its total GHG emissions by 2014 if output from rival Genesis Powers' coal-fired power plant at Huntly was cut by more than 80% in that time. But that scenario would require a carbon charge of at least NZ$20 per tonne of carbon dioxide to reduce Huntly's competitiveness against new gas-fired power plants and also to make new wind and hydro-electricity projects viable.

Genesis Reply

Responding to this, a Genesis spokesman stated that anybody advocating pulling Huntly out of the market in seven years hasn't "got their numbers right" because it is difficult to see how a new gas-turbine power station built at today's capital cost and with tomorrow's gas prices is going to push Huntly out of the market, even if there was a NZ$40 per tonne carbon charge.

The 1000MW coal-fired Huntly power plant is the country's biggest generator and has run at near-capacity at times in recent years with rising electricity demand and low hydro-electric lake levels.

Genesis favours retiring the Huntly plant over a 20 year period as new gas-fired plants are built (assuming there is enough gas available for this: Editor). Forecast economic growth would ensure that Huntly remained an important electricity producer in the near-term.

"Over the next few years, Huntly will still produce a meaningful amount of electricity because it will still be needed", the spokesman said.

Reference: NZ Herald, 28/3/07 and 2/4/07

Wind Power Issues

New Wind Farms Need Accompanying Transmission

The prospect of 800MW of new wind farm generation in Central Otago raises the awkward question of how all this extra power will be delivered to customers further north.

The reality is that the existing transmission system can't cope with such a large influx of extra power generated down south, as there is little spare capacity in the system.

This issue has been brought into sharp focus as Meridian Energy presents its case for its proposed 600MW Project Hayes wind farm and TrustPower puts it case for a 200MW wind farm at Lake Mahinerangi.

In addition, there is another 58MW of wind power coming on stream from Meridian's White Hill wind farm in Southland, and Meridian is also planning to boost Manapouri's capacity by 120MW.

There is a major potential bottleneck in the transmission grid if all these projects proceed.

Contact Energy also warns that if new wind farms are built without increasing transmission capacity, it will have to spill water from its Clyde and Roxburgh power stations. It would be simply pointless to replace existing hydro generation with wind energy because there is not enough capacity in the grid.

Reference: NZ Energy and Environment Business Week, 16/5/07

Editor's Note: The above comments highlight the absolute stupidity of present Government policies to have no co-ordination between provision of additional electricity generation capacity and transmission capacity.

Fossil Fuel Backup Needed?

Energy Analyst, Bryan Leyland, is questioning the wisdom of adding more than 800MW of proposed new wind generation in the lower South Island, which he predicts will require fossil-fuel-powered backup generation, and also will cause serious constraints on transmission capacity in the South Island if such a large amount of new generation is added.

Leyland also refutes Meridian's claim that most of the power from the 600MW Project Hayes will be used to meet a shortfall in the South Island and predicts that 80% to 90% of the power it generates will end up in Auckland. To counter the variability of wind, new back-up generation would therefore be needed near Auckland, which would almost certainly have to be coal or gas.

But Meridian spokesman, Alan Seay, insists that Project Hayes is intended primarily to meet a shortfall in electricity supply in the South Island, not to send north across Cook Strait.

In terms of Project Hayes putting pressure on the grid, Seay notes that the project will be built in stages so the entire 630MW will not suddenly be added to the system and there will be time to upgrade transmission capacity as generation increases.

On its website, Meridian notes that no significant new power station has been built in the South Island for about 20 years and says that Project Hayes will enable Meridian to conserve water in the hydro lakes, acting as a valuable hedge against dry periods.

Is Manapouri a Factor?

All Black, Anton Oliver, has taken a different line of attack against Project Hayes, suggesting its main purpose is to supply power to the Tiwai Point aluminium smelter and to a new cement plant proposed by Holcim in North Otago.

But this line of argument doesn't seem to stack up in view of the fact that Meridian has in recent years increased generation of its Manapouri hydro station to supply the aluminium smelter (with the tailrace tunnel project).

Reference: NZ Energy and Environment Business Week, 20/6/07

Scaled-Down Motorimu Wind Farm Approved

Allco Wind Energy (AWE) has been granted resource consent for a controversial wind farm at Motorimu in the Tararua Ranges but with just 75 turbines instead of the 127 turbines it was seeking.

Commissioners have rejected the other 52 turbines on the grounds that they would spoil the ridgeline on which they were to be built, and also have noise implications for nearby residents.

The full Motorimu wind farm would have generated 110MW but the project may not be viable with just 75 turbines. The turbines along the ridgeline would have generated the most power, due to their prime location for wind.

The Commissioners ruled that the effect of the full wind farm on the landscape and residents outweighed the national importance of its renewable energy. The approved turbines are mainly in a basin below the ridgeline, which will keep them out of view of nearby homes.

Local Maori were among those objecting, on the grounds that the wind turbines would affect the "spiritual value" of the ranges (see following news item).

Another wind farm proposal by Mighty River Power and the Palmerston North City Council further along the same ridgeline in the Turitea Reserve, is now before the Environment Court with strong opposition. That proposal involves 60 wind turbines. **Editor's Note**: The Turitea project was approved to proceed by the Environment Court on 26 July.

Meanwhile AWE is also planning a $200 million wind farm at Waverley, on the Taranaki coast, which would generate 135MW from 45 giant turbines of 3MW each (see subsequent news item).

Commenting on the Motorimu decision, the NZ Energy and Environment Business Week said that if the Government is serious about wanting more renewable generation, it needs to give a firm lead to local councils considering resource consent applications for wind farms, noting that the Motorimu decision is a classic example of what happens when the Government sets no clear guidelines for local decision makers.

At present the Government is simply talking about encouraging renewable energy but doing little to help promote it.

Reference: NZ Energy and Environment Business Week, 4/7/07

Court Ruling on Maori Spiritual Values

Concern for Maori spiritual values was a key factor in the Environment Court's decision to reject plans for a wind farm near the Napier-Taupo Road. The court has overturned resource consents granted to the Hawkes' Bay lines company Unison by the Hastings District Council to add a further 37 turbines to 15 for which it already has consent at Te Waka, near the Titiokura Saddle.

Judge Craig Thompson has ruled the visual effects of the 37 extra turbines, plus another 75 turbines proposed alongside them by Hawke's Bay Windfarms, would be unacceptable in a sensitive and distinctive landscape. Te Waka is a dramatic rock formation that looks like the stern of a waka and has spiritual significance for local iwi.

Unison spokesman Graham Brown says the company is now considering whether to appeal to the High Court, but a decision on this is likely to be several weeks away. Unison will also have to assess whether the 15 turbines consented will be economically viable on their own.

The neighbouring 75 turbines planned by Hawke's Bay Windfarms have already won approval from the Environment Court.

The estimated total capacity of the Te Waka wind farm was up to 111MW (refer EnergyWatch 42, pg 4).

Judge Thompson says in rejecting Unison's project, he took into account the impact the turbines would have on the spiritual values of the local iwi, bearing in mind the site's history, water and sacred areas. He concludes the proposal "does not promote the sustainable management of natural and physical resources".

Napier historian Patrick Parsons, one of the leading opponents of the turbines, is hailing the court's decision as a victory for Maori spiritual values and for the values of outstanding natural landscapes. Mr Parsons predicts it will set a precedent with far-reaching implications for other planned wind farms. He believes the Government needs to set a clear policy on where wind farms can and can't be built, rather than the

current situation where all national landscapes are up for grabs by wind farm developers.

Maori Party Co-Leader Pita Sharples has welcomed the Court's decision, saying landscapes of exquisite beauty such as Te Waka "feed the soul and nourish the spirit". Dr Sharples adds the ridge is of great significance to the people of Ngati Kahungunu and Tuwharetoa, as there are values and stories associated with the landscape, which they hold great meaning by.

National's Energy Spokesman Gerry Brownlee says the court's decision highlights the need for urgent action by the Government to help renewable energy projects get through the RMA process. While not commenting directly on the merits of the Unison proposal, Mr Brownlee notes projects continue to be shelved because of the RMA. He believes this is a potential threat to NZ's energy security.

Reference: NZ Energy and Environment Business Week, 25/4/07

Proposed Waverley Wind Farm

A $300 million wind farm is planned for the coastline near Waverley, north of Wanganui. Providing resource consents are obtained, work will start in erecting up to 45 turbines in August 2008.

Allco Wind Energy NZ (AWE) have been investigating an area at the northern end of the former Waipipi ironsands site.The proposed 3 MW capacity wind turbines would produce up to 135MW of electricity, enough to power the equivalent of 59,000 homes.

The idea of wind farms in the South Taranaki area is not new but Allco's involvement is the first tangible sign that this coastline's wind generation potential is being taken seriously. EECA commissioned a report that looked at renewable energy resources in Taranaki and that included the Waverley and Patea areas.

The study was done by the consulting firm Sinclair Knight Merz and released in July 2006. The report said that while NZ's attention to wind farms was low compared to other countries, rising electricity prices made it an attractive alternative.

There are no existing wind farms in the region but the Sinclair Knight Merz report said that because it is not heavily populated, the Patea-Waverley area might be able to handle "one or two large scale wind farms". Earlier studies had shown that wind speeds on the Waverley and Patea coastline to be about 8-9 metres per second at about 60-80 metres height, which is the hub height of modern large-scale wind turbines.

Reference: Wanganui Chronicle, 20/4/07

Vector Invests in NZ Windfarms

Windflow Technology Ltd has welcomed lines company Vector Ltd as a potential fellow shareholder in NZ Windfarms Ltd, which owns the 48.5MW Te Rere Hau wind farm (comprising 97 turbines when fully installed) near Palmerston North, jointly with international wind farm developers Babcock and Brown Windpower Pty Ltd and NP Power Pty Ltd.

Te Rere Hau Stage 1, consisting of five Windflow 500 turbines, was officially opened by the Prime Minister, Helen Clark, in September 2006 and has been performing at higher than warranted levels (97% availability over the following six months). Windflow Technology is presently manufacturing the next batch of 14 turbines for the wind farm and is anticipating orders for the remaining 78 turbines by the end of 2008.

Windflow Technology notes that their unique Windflow 500 turbine has witnessed growing acceptance in recent months of its proven performance, low visual impact and cost-effectiveness over imported European designs.

Reference: Windflow Technology Ltd media statements, 27/4/07 and10/5/07

Environment Court Approves West Wind

Meridian Energy is considering the 152-page decision by the Environment Court, which gives the "green light" for its West Wind project at Makara, but with the number of wind turbines cut back from 70 to 66.

The big question now for Meridian is whether the West Wind project is still financially viable.

With fewer turbines and their capacity likely to be reduced from 3MW to 2.5MW, plus a 20% increase in the estimated cost of the project since Meridian applied for resource consent about two years ago, the economics are now borderline.

Meridian also had to wait to see if Makara residents lodged an appeal in the High Court. The residents could only challenge the Environment Court decision on points of law (and have since decided not to appeal).

The Energy Minister, David Parker immediately released a media statement on 15 May welcoming the decision of the Environment Court and noting that the wind farm is expected to produce enough power to meet much of the domestic electricity demand for the Wellington region and noting "this is just the sort of development we need to secure a sustainable, carbon neutral future."

He stated that "Labour got wind power off the ground in NZ with its ground-breaking Projects to Reduce Emissions programme. This brought forward the development of wind power in NZ by many years."

David Parker said that his Government had also clearly signalled its preference for a renewable energy future through the draft NZES. "Following Labour's clear policy signals, major generators have announced their own plans to invest billions of dollars in new renewable projects".

"I'm delighted by today's decision and Meridian's plans to make another major investment in building a sustainable, carbon neutral NZ" Mr Parker said.

The Minister's above immediate endorsement of the Environment Court decision in favour of West Wind could suggest that there might be some political influence on Meridian's ultimate decision?

Certainly it would look bad for the present Government if the West Wind project does not now proceed, as Makara must be one of the most ideal sites for a wind farm anywhere in the world - if a wind farm is not economically viable at Makara, one would have to wonder about the whole future of wind energy in NZ.

However Meridian CEO, Dr Keith Turner, is certainly keen for West Wind to proceed. Meridian has identified a preferred supplier and Dr Turner expected to travel to Europe later in June to discuss aspects of the turbine contract with the supplier.

NZ Wind Energy Association CEO, Fraser Clark, says that the cost of wind turbines worldwide has increased significantly during the last two years, due to demand outstripping supply. This is likely to be a temporary situation, so while West Wind may look financially borderline now, it may be much more attractive in a few year's time.

The Government's proposed cap-and-trade scheme for GHG emissions will improve the viability of the West Wind project, and all other wind generation projects, because as the price of non-renewable electricity generation rises, wind energy will become more economically competitive.

Meridian's original plan for West Wind was for 70 turbines of 3MW each for a total capacity of 210MW. Now it is looking at using 2.5MW turbines within the 125 metre height limit approved by the Environment Court which would generate around 165MW from the 66 wind turbines which have been approved.

During the Environment Court hearings, the Makara Guardians claimed that more than half the 70 turbines were close enough to houses to have noise and visual impacts. But the Court found that although the turbines will be only 700 metres from the nearest house, noise would not cause a serious annoyance to residents.

Reference: NZ Energy and Environment Business Week, 23/5/07 and 30/5/07

The Board of Meridian Energy has still to give the final go-ahead to the West Wind project. It will base its decision on the latest engineering studies and a detailed business case.

Industry sources close to Meridian are optimistic that the studies will produce favourable outcomes, and that the Board will give final approval in August for the project to proceed.

Reference: NZ Energy and Environment Business Week, 25/7/07

Prime Minister Promotes Wind Power

In opening the 29 turbine 58MW White Hill wind farm in Southland, the Prime Minister, Helen Clark, noted that the project had strong community support.

She spoke of Meridian Energy's tremendous leadership in promoting renewable sources of electricity generation and noted that this commitment to renewable energy "is right in line" with the Labour-led Government's aspirations for NZ. "We value the energy sector's contribution to making a sustainable future possible".

The Prime Minister noted that the draft NZES which had been out for consultation, sets out a vision of moving to 100% renewable energy for base-load generation, and she noted that wind power has a big role to play in realising that vision.

Editor's Note: Given the intermittent nature of wind generation of electricity, it is difficult to see how it can have a big role to play in base-load generation. Surely, wind power could only ever be considered base-load generation if it is linked up with an equal amount of hydro or thermal generation as back up?

Helen Clark noted that when Labour came to power in 1999, only three wind energy projects were running with a total capacity of 35.8MW. She said that today there is a total capacity of 328.8MW either operational or under construction, which is over nine times as much.

Projects with a capacity of another 1660MW have been applied for or have received resource consent, Meridian with 148MW now installed (90MW at Te Apiti, 58MW at White Hill and 0.2 MW at Brooklyn), and another 795MW either consented or under the consent process, should have 943MW of wind farm capacity available by 2010.

While the White Hill wind farm has received strong community support, Meridian has encountered opposition for its much bigger 600MW Project Hayes in Otago. But Meridian believes that it also has strong support within Otago, with surveys showing 75% of the people support the project.

Reference: NZ Energy and Environment Business Week, 13/6/07

John Key Supports West Coast Hydro

During a recent visit to Greymouth, the National Party Leader, John Key has promised that a National Government would revive a controversial Dobson Dam hydro project which the Minister of Conservation, Chris Carter, stopped in 2005.

Key says that the 70MW Dobson scheme, planned by TrustPower, would make the West Coast almost self-sufficient in electricity. While the Green Party, and others, vehemently opposed the scheme because it would flood part of the Card Creek ecological area, Key described the area as "gorse type" land of little ecological value.

TrustPower has since proposed a 46MW hydro project on the Arnold River, which environmental and recreational groups are also opposing. Key said that while National is "pretty environmentally friendly", environmentalism can be taken too far.

And Coal Mining Too?

John Key said that National not only wants to see hydro power development on the West Coast, but also the expansion of coal mining.

He added that the Green Party seemed to be "stuck in a 19th-century idea about mining".

The Green Party co-leader Dr Russel Norman, has hit back at Key's comments, saying that the National Leader appears to be misinformed about the environmental damage that the Dobson scheme would create, and in supporting coal mining, he is ignoring the environmental impact of burning coal.

Editor's Note: And how does National's support for more coal mining on the West Coast square with the recently changed National policy to now support the Kyoto Protocol?

Reference: NZ Energy and Environment Business Week, 13/6/07

Smart Meters Can Save Power

A recent article in EnergyWatch (Issue 43, pg 7-8) highlighted from a USA perspective, the potential electricity savings in using "smart meters".

A recent report submitted to the draft NZ Energy Strategy has been commissioned by WWF-NZ and prepared by Simon Terry and Associates suggesting that NZ's electricity demand could be reduced by 13% by 2030 by installing smart meters in every home, plus a range of energy-saving technologies.

The report stresses that a modern metering infrastructure comes logically ahead of the promotion of energy efficient technologies, because being able to measure energy savings provides an incentive for consumers.

The report estimates that it would cost about NZ$400 million to install smart meters in all 1.6 million NZ homes, which could be achieved within 4 to 5 years.

Given the lack of incentive for electricity retailers to introduce smart meters, the report recommends that the Government fund such as project as a key pillar of its energy efficiency strategy. Such a scheme would treat smart meters as a fundamental infrastructure project, something akin to the original national grid.

Reference: NZ Energy and Environment Business Week, 20/6/07

An Australian View

Smart electricity meters that allow customers to modify their power use have been a fact of life for years for commercial consumers. Their use by householders is only just beginning, but there are some serious reservations about whether a national roll-out will achieve real benefits. Critics point to the Italian experience, where the introduction of about 30 million smart meters on a national basis has not been without its problems.

Household smart meters are aimed at making individual consumers more conscious of the cost of electricity they are using, and then allowing them to modify their usage patterns. Originally, smart meters were promoted as a way of cutting costs for electricity utilities. They can be read electronically at a central point, doing away with the need to employ meter readers who visit every house to record the number of revolutions recorded on mechanical meters.

But in recent years, smart meters have been promoted as a demand-management tool, with the aim of encouraging more efficient use of electricity and reducing the inefficient use of capital in investment needed for rarely used peaking power generation plant. (Australia's electricity traditionally is strained about the end of January and early February, when the combination of high summer temperatures and the full resumption of commercial activities after the summer break, puts a strain on the total generating capacity). If peak demand could be better managed, there would be less requirement for peaking plants , and better use of the base-load power system and cheaper electricity all round.

The Council of Australian Governments (COAG) last year expressed some concern at the slow take-up of smart meters and suggested a national roll-out of them during 2007. But the latest report of the Ministerial Council of Energy (MCE) has been lukewarm and suggested that a national roll-out could take more than five years and that the benefits might be overstated.

The Electricity Users of Australia (EUA) representing commercial electricity customers is a big believer in demand management, and strongly suggests the need to introduce more smart meters and that this should be done as soon as possible. It refers to a number of studies that calculate the benefit of smart meters from under $200 to more than $700 depending on their degree of sophistication.

In February 2006, COAG agreed to improve price signals for energy consumers and investors, and said that this would allow for "the introduction of time-of-day pricing and to allow users to better manage their demand for peak power only where benefits outweigh costs for residential users".

According to MCE, a smart meter should be capable of measuring and recording consumption in short intervals equivalent to the half-hour periods set in the wholesale market. They should also be capable of two-way comunication, providing timely access to consumption data and allowing utilities to remotely control other features.

MCE says that the aim is to to encourage participation by electricity consumers, suppliers and service providers, by varying prices over time and delivering price-based demand responses, and that studies it has reviewed do not provide a clear business case for smart meters, although significant benefits have been identified. It intends undertaking a national cost-benefit analysis in which clear outcomes for each state and territory will be identified, and suggests that the costs of the roll-out should be apportioned across the electricity supply chain in accordance with where the benefits will accrue.

EUA has concerns about the cost of introducing smart meters, particularly where the responsibility for doing so appears to be likely to fall on monoply line network businesses, and fears that they might use the opportunity to inflate costs.

Reference: The Australian, 27/1/07

Demand Side Participation Trial

Transpower has announced, for funding approval by the Electricity Commission, a groundbreaking Demand Side Participation (DSP) trial beginning over the winter of 2007 in the upper South Island. Benefits from the two-year trial will help form a wider Grid Support Contract which looks at ways to defer investment in new transmission.

DSP is one means by which Transpower may be able to defer transmission investment in a region through contracting to reduce peak electricity demand.

The upper South Island was chosen for the trial because of the need for transmission investment in that region in the medium-term. There is already existing work under way to enhance transmission capacity into Christchurch, and also work on the drawing board to reinforce that capacity in later years. This trial will help identify options for managing the timing of future transmission investments.

Also, the annual demand growth in the region (20-30MW per year) is of a size that allows demand-side initiatives to potentially defer future transmission investments. By comparison, Auckland's growth is around 50-100MW per year and therefore the benefits of a DSP scheme may be considerably lower in terms of deferring a larger transmission investment.

The first year of the trial will be conducted on the basis of "reasonable endeavours", as this is more about obtaining experience of DSP in terms of the reliability, quantity of load reduction available, and the effect of the financial incentives. Provided that it does make economic sense, the subsequent trial year will be on full commercial terms.

The trial is being run at a time when transmission capacity in the upper South Island is adequate to meet demand. Consequently, there will be no risk to supplies if some of the demand response is not forthcoming when requested. The information gained will be useful in identifying and reducing barriers to DSP.

Editor's Note: Transpower has since appointed five "aggregators" to manage its DSP trial which began on 23 July and is aiming to cut 14MW from peak load in the upper South Island grid. The project essentially means that Transpower will pay companies to reduce their electricity use at specific times to help ease pressure on the grid.

Reference: Transpower Media Statement, 9/5/07

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EnergyWatch

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