

# Our Submission on the Energy Strategy

The draft New Zealand Energy and Climate Change Strategies, currently being formulated, will determine much of New Zealand's long-term economic and environmental well-being.

In our submission on the strategies, Solid Energy welcomes the recognition that these areas are interdependent. We also believe they could benefit from further high-level analysis and we suggest New Zealand should consider energy, climate change and land use management strategies together and in relation to some basic objectives.

We believe these overall objectives should be to:

- increase security of energy supply.
- ensure the economy remains competitive and affordable energy is available and,
- to promote environmental sustainability and combat climate change.

It is a model that has been adopted by the Council of the European Union.

## National Interest

We suggest it is in the national interest to make sure whatever we do is in line with our trading competitors' policies. Deciding to go it alone and perhaps pay more for carbon than our main competitors will mean an increase in our relative cost of energy and a fall in our international competitiveness.

Solid Energy believes the challenge is to maximise our economic and social wellbeing while at the same time managing a long-term (50-year) transition to renewables with minimum short-term effects on the physical environment.

Solid Energy Chief Executive Dr Don Elder says the European Union model provides a workable and internationally compatible set of objectives.

"We have to face the reality that we are very dependent on primary processing for our national income. New Zealand's energy and climate change strategies will directly impact on how competitive and productive our primary producers are and, ultimately, on the country's economic performance.

"Optimal strategies to meet national energy and climate change objectives will be best aligned if they support our large producers/exporters moving towards world-best practice in efficient, even if energy- and emissions-intensive, value-adding production. The key is ensuring energy price relativity with our trading competitors.

## Indigenous resources

"We may be an isolated economy, but on one score at least, we do have one huge advantage over our competitors: an abundant and diverse range of indigenous energy sources.

"New Zealand should look to using its extensive coal and woody biomass sources, natural gas, wind, solar, marine and other new options where they are secure and reliable. These options can act as a buffer against unknown future global costs of energy, and secure for New Zealand a stable and certain energy price pathway into the future.

"Priority should be given to indigenous energy supply over imported supply, especially where local resources are likely to cost less than imported energy and



Maintaining our competitiveness and economic strength is vital as we face the challenges of climate change. Solid Energy believes the best strategies will support our large producer/exporters as they move towards world best practice in efficient value adding production.

so ensure fuels diversity," Dr Elder says. "Internationally, energy prices are strongly correlated and prices are now effectively driven by the global price of oil. In this vulnerable environment simply focussing on reducing carbon footprints as a stand-alone measure to combat climate change is not an adequate response.

"My hope is that the final design of the New Zealand Energy and Climate Change Strategies will provide a vital overarching blueprint that will allow business, Government and the public to work together effectively towards a more sustainable economic and environmental future for our small nation."

**Solid Energy's submission on the draft National Energy strategy is available on our website at [www.coalnz.com](http://www.coalnz.com)**

## Carbon Storage Trial (continued)

pretty mature and ready to be put into place now. It is just a matter of designing it into the projects from the start. For example, all the technologies needed for CO<sub>2</sub> sequestration are known. It's almost a formality, though an important one, to demonstrate that they all work well together. And that is what we are doing with the CO<sub>2</sub>CRC project in the Otway Basin."



CO<sub>2</sub>CRC Board

## Board Appointments

**John McDonald and John Fletcher have recently been appointed to the Solid Energy board by the Minister for State-Owned Enterprises, while Michael Hawarden, who served on the board for eight years, has retired.**



John McDonald

Mr McDonald is an Auckland-based company director whose experience includes more than 30 years in executive management positions with Tasman Pulp and Paper Co Ltd and the former Fletcher Challenge group of companies through until his retirement in 2001. He was a director of several Fletcher Challenge subsidiary and joint venture companies in New Zealand and overseas and is now on the boards of public companies Air New Zealand, HY-FI Securities Ltd and Dairy Equities Ltd.



John Fletcher

Mr Fletcher is a business development consultant and company director with extensive experience in the energy sector. The Wellington-based former Managing Director of Shell New Zealand Ltd was a director of New Zealand Refining Company and Fulton Hogan. With the global Shell energy and petrochemical group of companies, he worked in country manager and senior management positions in the Netherlands, Britain, Oman, and Indonesia. He is also on the board of TechTonics Group.

# CoalFace



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## Bioenergy Business Expands

Solid Energy has expanded its bioenergy interests with the addition of two new businesses, Biodiesel New Zealand Ltd and Switch.

Biodiesel New Zealand was created from the acquisition of a Canterbury-based biodiesel producer and plans to increase annual production to 70 million litres within three years. This will meet more than half the Government's 2012 target for biofuels.

Biodiesel New Zealand currently produces about 1 million litres a year from used cooking oil collected from throughout the country and is investigating the potential for producing the environmentally friendly fuel from energy crops. The company plans to plant a trial crop of oilseed rape this spring to assess it as a biodiesel feedstock. Biodiesel New Zealand customers are transport and earthmoving fleet operators which operate high ratio blends made up of 60 to 100% biodiesel.



Solid Energy Chief Executive Officer Dr Don Elder with Biodiesel New Zealand General Manager, Paul Quinn.

Solid Energy, which uses about 15 million litres of mineral diesel a year, and its contractors another 25 million litres, will also assess using biofuel in its own operations. In underground mining, biodiesel offers safety advantages over mineral diesel due to lower emissions.

Chief Executive Officer, Dr Don Elder, says entering the biofuels sector is, "a logical, but significant step from our already established market position in bioenergy with our wood pellet business, Nature's Flame."

Switch is being built on the assets of a Nelson-based solar heating specialist, Sensible Heat. Switch will supply equipment, provide advice and design integrated heating systems for homes, businesses, schools and other public buildings.

It has the exclusive New Zealand agency for Apricus solar equipment and a nationwide distribution network of agents who install and support its solar heating products. Switch will take over from

Nature's Flame, marketing and installing the German-made HDG-Bavaria wood pellet boilers and is evaluating other products to assess their suitability for New Zealand conditions.

"Solid Energy and Nature's Flame have conducted a substantial amount of research and development around heating for residential, commercial and small industrial uses and we aim to make that expertise more widely available through Switch," says Andy Matheson, Solid Energy's General Manager of Renewable Energy.



Renewable fuel from Solid Energy



# Kyoto Protocol Developments

As national, international and industry responses to the challenge of climate change continue, we have included here an update on New Zealand's Kyoto Protocol responses, a report about progress in clean coal technologies, and some advice about how your organisation, as an energy user, can minimise its carbon footprint.

## Designing an Emissions Trading Scheme

At the end of 2005 the Government decided it would not go ahead with earlier plans for a broad-based carbon tax. Since then, a comprehensive review of policy options has been done and late last year the Government produced five consultation documents.

These were the:

- New Zealand Energy Strategy
- Transitional Measures to 2012
- Post-2012 Measures
- New Zealand Energy Efficiency and Conservation Strategy
- Measures for Agriculture and Forestry.

Submissions on these closed at the end of March and it was expected that officials would assess the submissions and make

recommendations to Cabinet which would choose its preferred options and cost/benefit analyses would be done on these.

The announcement by Energy Minister, the Hon. David Parker, that an emissions trading scheme will be introduced in 2008 has put that expected process in doubt. It appears that work on all other options has been halted while the emissions trading scheme is designed. There is concern in business that the introduction of an emissions trading scheme is being rushed and that a less-than-optimal design will result.

It is likely that an emissions trading scheme introduced during the transitional period to 2012 will cause a rise in the price of both electricity and fossil fuels, without

any real reduction in emissions.

Additionally, it is unclear how such a scheme will integrate with an Energy Strategy that focuses on renewable energy and reduction of greenhouse gas emissions while underplaying issues of security of supply and affordability.

Also of concern is that New Zealand is now formulating its negotiating mandate for commitments that the country might accept after 2012 without yet knowing the true costs of the current commitments.

**The consultation documents can be accessed from the MED website at [www.climatechange.govt.nz](http://www.climatechange.govt.nz)**



*Although only developed nations have firm Kyoto reduction targets, New Zealand's profile is more like a developing country, as about half of our emissions come from agriculture.*

## Background to Kyoto

The Kyoto Protocol is an international treaty aimed at tackling the challenges of climate change. It seeks to bind parties to reducing or limiting their greenhouse gas emissions.

Only developed countries have firm targets under the Kyoto Protocol and the United States and Australia have not ratified it at all. This means that it is the European Union nations, Canada and Japan along with New Zealand that are bound to meet targets by 2012.

New Zealand ratified in 2002 and so took on an obligation to return its greenhouse gas emissions to 1990 levels (around 61 million tonnes a year of carbon dioxide equivalent) in the first commitment period (2008-2012) or otherwise account for any excess (expected to be by buying carbon credits internationally).

By 2012, it is likely that New Zealand will be considerably over its 1990 levels, with some estimates as high as 30% in excess. At first the Government thought the country

would have excess credits once forest sinks were taken into account and that we could sell the surplus. This is not the case, mainly because animal numbers were very low in 1990 and have since risen, our population and economy are growing, and forest planting rates have dropped from historic highs in the 1990s.

New Zealand has a profile that is more like a developing country, with about half of our emissions from agriculture (animals and nitrous oxides), around 20% from transport, and the rest from electricity (8%), industry and energy processes.

To date there appears to be no easy remedy for methane emitted from animals. We already have one of the world's highest percentages of renewable electricity generation, with around 60-70% (depending on weather) coming from hydro and other renewables. All these factors impact on our ability to reduce emissions.

## Southland Lignites Study

Solid Energy is progressing plans to build a plant which could produce transport fuel, urea or electricity, or a combination of these, from our lignite resources in Mataura and Croydon in Eastern Southland.

Under one scenario the resource could support a plant with capacity to produce up to 40,000 barrels a day of very high quality diesel, meeting 44% of New Zealand's projected diesel demand in 2015. This plant would displace imported oil and underpin ongoing production by New Zealand Refining Company at Marsden Point.

Our focus until early 2008 is on building our knowledge of the lignite resource from an extensive drilling programme currently on site. Carbon dioxide will be a by-product of the gasification process and we continue to carry out significant work in

this area. There are a number of options available to manage the CO<sub>2</sub> footprint from a lignite-based project. These include purchasing credits, if emissions trading is introduced, paying a tax, forestry offsets and carbon capture and storage. We have a study underway to search for potential storage reservoirs both on and offshore in the south of the South Island and expect to have the preliminary results next year.

We are likely to seek an international partner to complete prefeasibility studies establishing the best product options to pursue, once we have the results of the drilling programme which will be key input in the decision to move to the next stage. The scale of this project is such that an essential prerequisite will be strong support from our shareholder and from the Southland community.



*Drilling programme in Eastern Southland.*

## Calculating your Carbon Footprint

With growing public awareness of climate change issues, there is increasing interest in businesses determining their carbon footprints and options for reducing them. The term "carbon footprint" has come to mean accounting for the greenhouse gas emissions (mainly carbon dioxide) associated with the fossil fuels used in the operation of a business.

CRL Energy Ltd's climate change consultancy and research expertise is extensive, with energy producers and major energy users among its clients. CRL Energy can provide advice on calculating the carbon footprint for your business and the options for reducing it through energy and process efficiencies. In some cases the Government provides partial grants towards the cost of an energy audit and, in special circumstances, the installation of a more efficient technology.

### Benefits

Carbon footprinting can help an organisation by:

- identifying the potential exposure to increased fossil fuel prices when carbon pricing (carbon tax or emissions trading) is introduced in the future.
  - addressing community concern, allowing an organisation to report on its carbon footprint and measures to reduce it. Some, especially exporters, have sought a market advantage by offsetting their emissions ("carbon neutrality") and reporting on this.
  - leading to the use of more energy efficient processes and systems with a reduction in operating costs resulting from some of these measures.
- An international protocol to calculate

carbon footprints has been adapted for use here and the Ministry for the Environment will soon be publishing guidelines on this. As part of this process an organisation first decides whether the scope will include direct emissions only (those mainly associated with the consumption of fuel), indirect emissions due to the likes of electricity purchased, and indirect emissions not directly under the firm's control (eg, those associated with air travel, freight of products, waste emissions and emissions from contractors). Once the scope is decided and the accounting completed, the figures can be independently verified under an ISO standard.

For fossil fuel users, the usual means of reducing the footprint is to improve efficiency – using less input energy to achieve the same product outcome. Improvements in boiler operation and steam line insulation and investing in improved process equipment or a boiler upgrade are examples of how this might be done.

Another option is to switch to a renewable fuel such as wood pellets. Rather than releasing fossil-stored carbon, the carbon released during wood pellet combustion has recently been captured. This "short-cycled" carbon does not add to the greenhouse effect and is normally treated as a zero carbon source. There may, however, be a fossil energy component in the supply chain of renewables and, in more detailed carbon footprint calculations, this may be included.

**For more information, please contact CRL Energy's Andrew Campbell on 0800 427 536 or [a.campbell@crl.co.nz](mailto:a.campbell@crl.co.nz)**

## Carbon Storage Trial

Carbon dioxide injection is expected to start in September at the Australian test well Solid Energy is helping to fund through the Cooperative Research Centre for Greenhouse Gas Technologies (CO2CRC).

Stripped from natural gas, about 100,000 tonnes of CO<sub>2</sub> will be injected 2,200m deep in the Otway Basin, about 250km west of Melbourne. The aim is to learn more about geosequestration – pumping captured CO<sub>2</sub> deep underground into areas such as depleted gas reservoirs – and the types of geology that can permanently trap the gas, helping to lessen the amount of CO<sub>2</sub> in the atmosphere.

In addition to its work with the CO2CRC, Solid Energy has a 20-year, \$100 million commitment in the research and development of clean coal technologies. Around the world in recent months a wide range of political and scientific projects have been announced in this area by nations and large energy companies looking for ways to lessen the environmental impact of using coal energy.

In June, the CO2CRC Board visited New Zealand to hold its quarterly meeting. Board members visited Genesis Energy's Huntly Power Station and the Solid Energy operated and majority owned CBM Ltd coal bed methane development site in the Waikato.

Dr Tim Moore, Solid Energy's Research Manager, says, "Most of the clean coal technology which we're looking at is

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