

# Environmental Report 2004

Lucy Hewlett, Environmental Graduate, monitoring the underground fire near the former Strongman Mine, West Coast. This, and other mitigation and rehabilitation projects, are summarised in this year's environmental report.



Solid Energy has released the first of its annual Environmental Reports this year.

The reports details Solid Energy's environmental activities and assesses our performance against our overall policy objective, which is for the cumulative result of all the activities we undertake to have a positive net effect on the New Zealand environment.

This year's report details the good progress in a number of areas, particularly rehabilitation of historical mines and in research which contributes to the expanding body of knowledge about the mining industry and its effects on the natural environment.

We have also developed a measurement system to assess our performance against our environmental policy objectives. While there have been improvements on many of our sites we are still, at times, falling short of today's best environmental practice. We are committed to working with our staff to improve environmental performance across the whole business and to producing our coal using best practice mining methods and with an overall positive effect on the New Zealand environment.

A copy of the report can be found on the Solid Energy website, [www.coalnz.com](http://www.coalnz.com), or telephone 03 345 6000 for a copy.

## Report Details New Zealand's "Energy Options" for the Future

In November Solid Energy released the 60-page report, "Energy Options: Securing Supply in New Zealand", prepared with support from Concept Consulting Ltd and the New Zealand Institute of Economic Research. The report reviews in detail the country's energy supply options as the supply of gas available to firm hydro generation dwindles. It considers several scenarios for demand growth and for the effects of climate change policies on future electricity generation.

The report concludes that energy demand growth rates will slow from current rates due to a variety of demographic, geographic and economic factors and that a mix of generation types will be required to meet the significant shortfall created by declining Maui gas reserves.

Solid Energy Chief Executive Officer, Dr Don Elder, says: "We commissioned the report to address unanswered questions about New Zealand's future energy demand growth rates and supply options. We believe 'Energy Options' will make a substantial contribution to the national energy debate, providing current, in-depth and comprehensive analysis of our supply options through to 2020," Dr Elder says.

The report says: "Our strong recent economic growth has continued to bring strong energy demand growth. Although energy efficiency improvements have occurred, and will continue, there are no signs that economic growth and energy growth are decoupling. There are few reasons why this should occur

in the future. Energy security and affordability remain essential for New Zealand's continued economic prosperity. Unfortunately they can no longer be assumed as traditional gas reserves decline fast and major new hydro-electric developments look increasingly unlikely.

"Even if significantly more renewable energy is introduced, strong continuing growth in primary energy supply will require significant new gas finds to be developed and/or substantially increased use of coal. A shortfall of gas supply relative to demand will widen rapidly after 2010 if more, affordable gas is not found and developed. Failure to develop these options will place security of energy supply at risk and cause the price of energy to increase dramatically. The lead time for new generation is significant (at least three to five years) and action or inaction now will affect our future supply as well as our future options."

The report concludes: "New Zealand faces some important resource allocation and energy supply development problems. Conflicts between climate change and security of supply objectives are likely to emerge in the electricity sector. The Government and the Electricity Commission will have a key role in resolving these issues; this in turn will influence investment strategy for existing participants throughout the industry, the degree of security for consumers, the cost to consumers and economic growth itself."

Coal home heating cont'd from page 3...

Solid Energy firmly supports proposals to introduce new national air quality standards and planned regional air quality initiatives but acknowledges for the moment some people may not have other forms of home heating.

This has been the main driver for the company's acquisition last year of a biomass business which provides clean burning low emission wood pellet fuel, burnt in specially designed pellet fires, for home heating. Trading as Nature's Flame, the wood pellet fuel produces one-tenth the emissions of other enclosed domestic solid fuel burners and one-hundredth the emissions of open fires, with efficiencies of 90% achieved – four times that of open fires.

New Zealanders need clean, affordable home heating and Solid Energy is committed to working with the Government, regional councils and others to ensure that people have access to affordable, clean home heating to replace solid fuel burning on open fires and household burners. The future for coal in New Zealand lies in its ability to help meet New Zealand's energy needs through high efficiency, low emissions industrial burning and electricity generation, not in home heating.

# CoalFace



DECEMBER 2004

## Customer Focus: Dairy Industry



Alan Walters, Chief Executive Officer, Open-Country Cheese Company

Solid Energy's relationship with the dairy industry in New Zealand continues to grow from strength to strength.

This year a five-year supply contract was agreed with Fonterra-Co-Operative Dairy Company for on-going supply to the Clandeboye processing plant near Temuka, underlining continued strong growth in the sector. A three-year contract was also renegotiated with Westland Dairy on the West Coast.

Solid Energy also celebrated the beginning of a new relationship, with the Open-Country Cheese Company, 60 kilometres east of Hamilton, which officially began production on October 9 2004.

The factory has the capability to produce a range of hard and semi-hard cheeses, from cheddars and edams to parmesan. At present the factory produces 27 tonnes of cheese per day,

using the daily milk supply of 10,000 cows. As part of the cheese-making process, the factory will use 4-5 tonnes of coal per day to fire its boilers and produce steam.

The cheese is predominantly exported throughout all parts of the world, including many parts of Europe, Asia and the West Indies.

Chief Executive Officer of Open-Country Cheese, Alan Walters said the company, which employs 20 staff, was looking to expand production when feasible. "At present we are producing 5000 tonnes of cheese per dairy season, for the future we have targeted a production of 20,000 tonnes," he said.

"While this depends predominantly on milk supply, our positive relationships with suppliers such as Solid Energy are critical to our expansion plans. We hope to be a Solid Energy customer for a few years yet."

## Kyoto Protocol Update

Russia has now ratified the Kyoto Protocol and it is expected to come into force on 16 February 2005.

This means that New Zealand is committed to reducing its carbon dioxide equivalent emissions to our 1990 levels or otherwise account for those emissions.

Government is intending to meet our targets by various policy measures including bringing in a carbon tax on from 1 April 2007. This tax will fall on all fossil fuels including petrol, diesel and will raise the price of electricity.

The cost of doing business will go up for most industries including ours. We will pay the carbon tax not only on the coal we mine but also through increases in the price of electricity and diesel. We may also be taxed on methane that is emitted during the mining process – final policy is yet to be set. This would contrast

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**SOLID ENERGY**  
Goals of New Zealand

For further information, or to contact any of the Solid Energy Marketing team please call:

North Island : Toll free 0800 655 122

South Island: Toll Free 0800 655 123

Email: [info@solidenergy.co.nz](mailto:info@solidenergy.co.nz)

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with the agriculture sector and the landfill industry which have been exempted from the carbon tax on methane emissions.

Policy measures are also being developed for small to medium size enterprises, though the content of the policy is not yet well defined. It seems that the government will assist in energy audits for SMEs and providing information on energy efficiency.

Negotiated greenhouse agreements are available for competitiveness-at-risk industries to prevent those companies moving their production offshore. A company granted an NGA would be exempted from the carbon tax but in return would be expected to work towards world's best practice for emissions for its particular processes. To date only the New Zealand Refining Company has secured an NGA.

Australia and the United States remain outside the Kyoto Protocol, with only Europe, Japan and Canada (other than New Zealand) accepting emission targets. Developing countries do not have to reduce their emissions during the first commitment period of the Protocol. The world is reliant on fossil fuels and as developing countries grow they will continue to use fossil fuels.

While the Protocol is seen as an important first step towards achieving a fully global solution to the identified global problem of climate change, unless significant technological advances occur with respect to the use of fossil fuels (eg affordable carbon sequestration) little or no lasting emission reductions will be sustainable over the medium to long term.

## Spring Creek Mine Practices set for Improvement

Coal extraction is likely to resume at Spring Creek Underground in the New Year, while a review of development processes at the mine is undertaken. Solid Energy recently embarked on a process to review and strengthen development and mining practices at Spring Creek, however in mid-November monitor extraction was stopped as a preventative measure, due to a risk of spontaneous combustion. The area at risk has been sealed off and the monitor is being moved to an adjacent extraction area. As a result the company decided to take the production decrease as an opportunity to undertake a complete review of the development and mining systems and practices at Spring Creek.

The stoppage means coal production is being reduced to around 10,000 tonnes per month (the mine produced 47,000 tonnes in October) but development work, driving roadways through coal and opening up new areas for extraction is continuing. Orders from New Zealand contracted customers are continuing to be met from



Rudolph Kotze (New Zealand Rail), Neil Campbell (New Zealand Rail), Barry Bragg (Solid Energy Chief Operating Officer), Alan Bell (Smith's Contracting), Tim Morrison (Solid Energy), and Sally Marx (New Zealand) at the site of the old Cobden Bridge.

## New Cobden Rail Bridge – Good News for Coal Transport

New Zealand Railways Corporation (NZRC) and Solid Energy New Zealand Ltd have reached an agreement to construct the new Cobden rail bridge across the Grey River near Greymouth on the West Coast.

The agreement provides for NZRC, the new rail network provider, to construct the bridge and rail connections, and for coal producer, Solid Energy to repay the cost of construction. This is the first major capital investment to be announced since the Government brought the rail network back into public ownership in July 2004.

The estimated \$15 million bridge will be built just upstream of the existing 110-year old structure. Under the agreement signed between Solid Energy and NZRC, Solid Energy will pay for construction of the new bridge through an annual charge over a 30-year period. Solid Energy is currently the sole user of the rail bridge, and is likely to be for the foreseeable future.

Construction of the new 285-metre long concrete bridge, which will be supported by 10 piers in the riverbed, is expected to be completed in early 2006. Once the new rail bridge is completed, the old wooden bridge, registered as a Category II Historic Place under the 1993 Historic Places Act, will be dismantled and removed. The old piers from the former road bridge will be removed at

production and stockpiles. One export shipment is being delayed until the New Year when extraction by high-pressure hydraulic monitor is expected to restart.

Solid Energy Chief Operating Officer, Barry Bragg comments, "The future for the mine is very positive, but we need to ensure that we get development rates up to secure long-term

the same time. A section of the wooden rail bridge will be rebuilt in a separate location.

Solid Energy coal from its Spring Creek Mine, near Greymouth, is transported by up to two trains a day by rail to the Port of Lyttelton for export. Alignment of the new bridge will take the rail route away from the middle of Greymouth as at present, connecting more directly with the line to Stillwater. However trains will still be able to run to the Port of Greymouth if facilities are built at the port to accommodate rail access.

Solid Energy Chief Operating Officer, Barry Bragg, said: "Solid Energy is extremely pleased that an agreement has been reached to replace the bridge with a new modern structure which will be able to accommodate increasing volumes of coal from Spring Creek Mine. The mine will approach full production over the coming year and it is very important for its long term viability that we have a reliable transport system in place to deliver our coal to our customers."

NZRC Chief Operating Officer, William Peet, observed that it was great to be making investments in the rail infrastructure to facilitate export growth. He stated that NZRC looks forward to working with Solid Energy and Toll to complete further upgrades of the coal route to increase safety, reliability and capacity.

monitor extraction, which this development review should provide. Further to this, one of the most immediate actions that we need to undertake is to bring forward recruitment plans at Spring Creek as we urgently need more development shifts working at the mine. We estimate that we will need up to 50 more staff at Spring Creek over the next 12 to 18 months."

## Coal fired power station investigated for the Buller

Solid Energy is investigating the feasibility of a small coal-fired power station in the Buller region.

The need for new energy generation is becoming increasingly obvious for New Zealand – it's widely agreed we need an extra 150-250 MW of generation capacity each year to cope with growing demand. Solid Energy's proposed power plant will provide between 150-250 MW of power, which is relatively small in comparison to generators such as Huntly Power Station, which produces 1000 MW of power.

Studies so far have indicated the project could be a commercially viable option. Research teams are gathering a variety of data in the Buller region, including weather pattern information (a small tower has been erected in Granity to capture this information), small-scale geotechnical assessments and baseline environmental data.

The Buller has been picked as a good location for the proposed plant due to availability of coal to fuel the plant, and its proximity to Transpower's Waimangaroa substation. Two sites within this area have been pinpointed as possibilities; a block of land near Birchfield inland from the main road (which we have an option to buy) and land already owned by Solid Energy at Granity (formerly consented for the proposed West Coast Coal terminal). While these sites have been "shortlisted", other locations haven't been completely ruled out.

Feasibility studies should be completed in the first part of 2005. At that time, the company will take a decision about whether or not to proceed to the next stage, which would be to seek resource consents. Assuming that the project proceeds we think it should take four years to consent and build such a power station.

## Solid Energy Supports Aichi Expo 2005

Solid Energy has agreed to become a Foundation Partner supporting the New Zealand Pavilion at the 2005 Expo in Aichi, Japan.

The 2005 Expo will be held between 25 March and 25 September 2005 and is expected to attract 15 million visitors to the 158 hectare site, 20 km east of Nagoya in central Japan. The theme of Aichi, the first Expo of the 21st century, is "Nature's Wisdom" and the aim of the six-month world showcase is to focus on new directions for solving the global-scale problems confronting the world, in particular global environmental challenges.

Solid Energy Chief Executive Officer, Dr Don Elder says: "The arguments for Solid Energy supporting an Expo in Japan were compelling. Solid Energy has long-established trading relationships with a number of Japanese steel manufacturers, going back as far as 30 years when we first began exporting our coal from the West Coast. We are one of New Zealand's largest exporters to India and have a major customer in China. Expo will give us the opportunity to meet with our customers in the region and to demonstrate their importance to our business and to the New Zealand economy.

"The theme of Expo is very relevant to our own business as we face significant challenges in producing coal using best practice mining methods, with an overall positive effect on the New Zealand environment. But by far the biggest challenge for the coal industry is to meet the objective of environmental sustainability. In

particular, coal and other carbon-intensive energy sources such as gas, must significantly reduce their potential greenhouse impacts if they are to claim a continuing role as a worldwide energy source," Dr Elder says.

Japan is Solid Energy's largest international market, accounting for 46% of the 2.14 million tonnes exported in 2004 and producing more than \$100 million in export earnings. In early 2004, Solid Energy concluded a three-year contract and marked 25 years of continuous supply (4.5 mt) to Japan's Mitsui Mining. Since 1997, Solid Energy has supplied 2 mt to Nippon Steel, signing a three-year contract with the steel maker in December 2003. The company's long-term contract with Mitsubishi Chemical Corporation has been extended to 2006, which will mark 30 years' supply to Solid Energy's longest-term international customer.



## Solid Energy plans progressive withdrawal from coal home heating

The air pollution caused by burning coal (and wood) in open fires and enclosed household burners has prompted Solid Energy to announce its progressive withdrawal from supplying coal to the home heating market.

In Christchurch this is likely to be within a year, in line with the draft Canterbury regional air quality plan, which will see the use of open fires banned from the city from 1 January 2006.

In Otago and Southland, the announcement has raised considerable concern from residents. At a public meeting held in September in Invercargill, and attended by a number of senior Solid Energy staff, including Don Elder, the company agreed to work with the Invercargill City Council and Environment Southland over the next year to address issues raised and to review the timescale for the withdrawal, which had originally been envisaged would occur within the next five years.

Solid Energy CEO Don Elder comments: "We've been investigating options for withdrawing from the coal home heating for several years. Our decision is supported by extensive studies over many years both in New Zealand and internationally, that solid fuel – coal and wood – burnt on open fires and enclosed household burners contributes to air pollution and significant health problems."

These extensive studies are in line with central and local government regulations. From 1 September 2005 local government will be responsible for implementing and enforcing national air quality standards for PM10s and other emissions. Councils will have to comply with the national standards by 2013.

Solid Energy believes that coal should only be burnt where its impact is minimal and environmentally acceptable, "Coal has a very important future in New Zealand but that future is in industrial uses and for electricity generation, not in household use," says Dr Elder.

"Coal burnt in compliant industrial burners by New Zealand industry and for electricity generation at Huntly has very low pollutant emissions. Technologies to deal with emissions of particulates, SO2 and NOx are widely used and available and cleaner technologies are under development internationally which will significantly reduce further the environmental impacts of industrial coal use", Dr Elder continued.

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