

# CoalFace



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## State of the art laundry



Moana Gillet operates a large ironing machine at AlSCO's new Invercargill plant.

When leading textile rental firm AlSCO set up its state-of-the-art industrial and commercial laundry in Invercargill, coal was its first choice to provide primary energy.

AlSCO is part of the international family-owned Steiner Corporation and has been operating in Australasia since the early 1960s. It bought New Zealand Towel Service in 1999. With a strong focus on delivering excellent customer service, AlSCO provides linen rental services to hotels, restaurants and the healthcare industry, as well as uniforms, continuous cloth towel and other washroom services to industry and commerce.

Fred Gardyne, AlSCO's Plant Operations Manager, says the company had a modern steam boiler in Southland. "It's fitted with a full bag house exhaust filtration system to keep our emissions down," he says.

"We had no difficulties at all with the resource consent because we based our plans and plant on the standards set down by Environment Canterbury, which are probably the most stringent in the country.

### Cost major factor

"We already had the boiler but cost was a major factor in the decision to proceed with coal, as well as it being readily available and local. Running on LPG would be three to four times the cost and that would mean the business wasn't viable."

The Invercargill plant has about 60 staff and consumes about 30 tonnes a week of lignite, trucked from Solid Energy's New Vale Opencast Mine near Gore. "Solid Energy's coal is providing steam for our industrial and commercial laundry, which

is probably the most modern in New Zealand. The steam heats water and provides heat for our big ironing machines. We wash, dry and press about 50 tonnes of material a week, with the Southland Hospital and the Alliance Group among our largest customers," Mr Gardyne says.

AlSCO is considering how it might make use of excess heat from the Invercargill plant and what other steps could be taken to reduce its carbon footprint.

"We're investigating the reticulation aspect, looking for a user for our excess heat," Fred Gardyne says. "We have a neighbour who makes food products and is now on LPG. We're also considering a hot water system which would use secondary heat from the steam production."

# Renewable Energy advances

Biodiesel New Zealand's first large-scale production facility will be built at Rolleston, south of Christchurch. Capable of initially producing at least 15 million litres of high-quality biodiesel a year, the plant is expected to begin operating late this year and is designed to allow a quadrupling of production.

The three-year target is to produce 70 million litres a year, which would be approximately half the 2012 biofuels target proposed by the Government in its Biofuel Bill. Biodiesel New Zealand's feedstocks include used cooking oil collected from restaurants and food preparation businesses throughout New Zealand, and locally-grown oilseed rape crops. The new plant will include a facility to extract oil from oilseed rape.

Since Spring 2007, Biodiesel New Zealand has been developing supply relationships with South Island farmers. It has successfully completed a trial of 700 hectares and more than 5,000 hectares of autumn-sown crop has recently been

planted for harvest in February 2009.

An independent lifecycle assessment by CRL Energy of greenhouse gas emissions and primary energy of biodiesel made from New Zealand-grown oilseed rape

shows that the fuel is sustainable and can make a positive contribution to the country's emissions-reduction goals without displacing food production.

## Third wood pellet plant

Nature's Flame, already the Southern Hemisphere's largest producer of wood pellet fuel, will build its third pellet plant at the Aratiatia Industrial Park, north-east of Taupo. It will be capable of producing up to 150,000 tonnes a year of the clean-burning fuel and is expected to be operational in the second half of 2009. Nature's Flame also has plants at Rotorua and Rolleston, which together can produce 60,000 tonnes.

Nature's Flame has the long-term supply agreements for the wood residues it needs to support the Taupo expansion. The New Zealand market for pellet fuel continues to experience good growth

and the business will also begin exporting, says Andy Matheson, Solid Energy's General Manager Renewable Energy.

"In Europe, North America and increasingly in Asia, wood pellet heating continues to gain market share and there is a strongly growing international trade in pellets," he says. "In New Zealand, we see continuing demand growth for wood pellets to heat homes, offices and public buildings such as schools.

"The near-zero carbon footprint of pellets is also making this fuel increasingly attractive to businesses looking for environmentally-sustainable process heat."

## Spring Creek progressing well

A number of trial shipments of coal from Spring Creek Underground Mine have been sent to overseas customers to assess the coal's suitability for use in steelmaking.

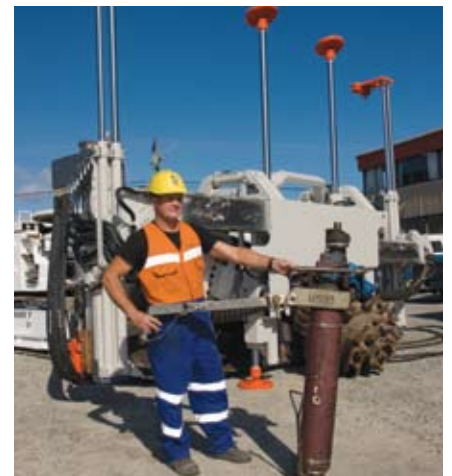
The mine, near Greymouth on the West Coast, resumed coal winning around Christmas following a \$25 million redevelopment to access new coal reserves. A joint venture between Solid Energy and Cargill, the mine's 14-month development programme has opened up access to more than 3 million tonnes of coal.

Underground, 4km of new roadways were created, new pumping stations added and the electrical and water

treatment equipment was upgraded. On the surface, the mine's Rocky Creek coal washery was also upgraded to allow the mine's entire output to be washed, creating a higher-value product.

The mine will soon take delivery of a new roadheader fitted with an automated bolting rig. This is a major change in the way we make rib (mine walls) and roof areas secure underground. Because they cut down on manual handling, bolting rigs are expected to result in increased productivity.

Also now underway is a drilling programme to prove up coal resources beyond those in the current mine plan.



In front of a new bolting rig, project worker Gary Hadow holds a gopher, the large manual hydraulic drill which has been the standard bolting tool for several decades.



Andy Matheson, Solid Energy General Manager Renewable Energy, shows Jeanette Fitzsimons an Apricus solar collector, part of the range on display at the new Switch store in Christchurch.

## Switch concept store opens

Jeanette Fitzsimons, the Government Energy Efficiency Spokesperson and Co-Leader of the Green Party, visited our Switch concept store in Christchurch recently.

The one-stop shop for heating with an emphasis on renewable energy is on the corner of Blenheim Road and Watts Road.

Ms Fitzsimons also recently visited Mairehau High School in Christchurch which converted its central heating boiler to run on Nature's Flame wood pellet fuel.

# Coal prices to rise

Rising production costs, underpinned by strong international energy prices, will increase the cost of coal for domestic customers over the next period, says Barry Bragg, Solid Energy's Chief Operating Officer.

"The escalating mining costs are being driven by the Australian resources boom, resulting in skills shortages and sharp and sustained cost escalations in steel and other material and mining equipment," Mr Bragg says. "Another factor is the increase in our own energy costs: diesel and electricity."

Faced with rising costs of production

in New Zealand, Solid Energy has had to review its product range and pricing structure for all its domestic coals. Staff have begun talking to customers about new forward contracts.

The sharp increase in international coal prices is directly coupled to the general rise in energy prices and is also being driven by the continuing growth in demand from China and India, he says.

"The result is that, for thermal coals, analysts are predicting that international prices will stay at or near US\$125 a tonne over the next three to five years," Mr Bragg says.



The field's current flow would power about 1,000 homes.

## Rail line sets record



The Midland Line carried a record 257,000 tonnes of coal in May.

May was a record month for the rail link between West Coast mines and the Lyttelton export terminal, with 257,000 tonnes of coal transported.

Capacity improvements on the Midland Line are the result of a coordinated approach by all parties, including On Track's investment since 2004 in track maintenance and improvement.

Toll Rail has added more bulk coal wagons and is trialing the use of longer trains, and material handling advances have been made by Lyttelton Port of Christchurch.

Confidence in the rail link's future ability to carry up to 4 million tonnes a year was a

factor in Solid Energy securing an 18-year contract to transport Pike River Coal Ltd's export production. The agreement guarantees Pike River up to 1.3 million tonnes a year of capacity on the line from late this year.

Pike River is now developing a new loadout facility at Ikamatua and further investment is under way in the line, rolling stock and locomotives, and increased capacity at the port.

It is expected that the longer 45-wagon trains will begin operating early in 2009.

Other freight on the line has also increased significantly, including dairy products, cement and gold concentrate.

## Decision about coal seam gas by year's end

A decision on commercialisation of our Waikato coal seam gas field is expected by the end of the year.

In partnership with United States company Resource Development Technology, five appraisal wells have been drilled west of Huntly, production techniques have been evaluated, and the test wells are now producing a sufficient flow of clean-burning methane gas to power about 1,000 homes, if it was converted to electricity.

Brett Gamble, Solid Energy's General Manager New Energy, says with up to 300 petajoules of gas in place, if fully developed the Huntly field could provide a significant contribution to New Zealand future gas supply. Developing that potential, however, would be a substantial investment and the commercial drivers need to be there to support it.

"We're far enough through the project to know there is gas there and that it's technically feasible to extract it," Mr Gamble says. "The next stage would be commercialisation. With coal seam gas in its infancy in New Zealand, access to specialist drilling and well-completion equipment can be difficult and expensive. Evaluating ways to reduce drilling costs, along with developing market and gas delivery options will allow us to firm up the project value. We expect to be making a decision on that by the end of the year."

The field is producing extremely high-quality gas (98% methane and less than 1% CO<sub>2</sub>) and interim options include small-scale on-site power generation or compressing it for delivery by tanker.



At the launch of the Otway project CO<sub>2</sub> injection trial are, from left: the Hon Peter Batchelor, MP, Victorian Minister for Energy and Resources; the Hon Martin Ferguson AM, MP, Federal Minister for Resources and Energy; CO2CRC Chief Executive, Dr Peter Cook; CO2CRC Chairman, Tim Bishley; Otway Site and Project Manager, Sandeep Sharma; and Solid Energy's Chief Executive Officer, Dr Don Elder.

## Greenhouse advance may benefit lignites project

The first carbon dioxide storage project in the Southern Hemisphere reached a major milestone recently.

The A\$40 million Otway project in Victoria has begun the injection of 100,000 tonnes of CO<sub>2</sub> deep underground. Extensive monitoring of the trapped gas is designed to demonstrate that carbon storage is technically and environmentally feasible and ready for widespread commercial application.

The Otway project has been developed over the last 10 years by the Australian Cooperative Research Centre for Greenhouse Gas Technologies (CO2CRC). Solid Energy is a major investor and founding member of the company set up

to own and operate the Otway project.

"The promise of carbon capture and storage includes its potential use in a coal to liquid fuel plant that we're investigating, based on our extensive Southland lignite resources," says Chief Executive Officer, Dr Don Elder. "The timeframe for this project would see first product some eight to 10 years from the time of a decision to proceed and, given the rising price of oil internationally, carbon capture and storage technology could be a very attractive option to address the CO<sub>2</sub> emissions of such a plant.

"It would be one of a number of options for managing the CO<sub>2</sub> footprint, including purchasing credits and forestry offsets.

## Simon Marsters joins board

Simon Marsters, an Auckland-based chemical engineer and former General Manager of Imerys Tableware Division Asia, has been appointed to the Solid Energy board by the Minister for State-Owned Enterprises.

Solid Energy Chairman, John Palmer, says Mr Marsters brings to the company a strong interest in the development of New Zealand resources,



especially minerals, for domestic and export markets.

His appointment follows the retirement of Greymouth businessman Tony Williams, who joined the board in 2001. "Solid Energy has a very strong presence on the West Coast and the company has benefited greatly from

Tony's contribution and enthusiasm," Mr Palmer says.

## Huntly East extension on track

Resource consents have been granted to allow our Huntly East Underground Mine to be extended to access an additional 6 million tonnes of coal over the next 10 to 15 years.

The mine has been operating since 1977, with present working areas 250 metres underground and up to 4.5km from the surface portal on the east side of the Waikato River. The planned extension would carry on to the north over another 2km and follow the coal seam down to an ultimate depth of about 400 metres below the surface.

About 90% of the coal mined at Huntly East, along with coal from our nearby Rotowaro Opencast Mine, is sold to New Zealand Steel for use at its Glenbrook plant, which was specially designed to produce steel from Huntly coal and coastal ironsand. Earlier this year, we concluded a short-term coal supply agreement with New Zealand Steel and discussions are continuing with the aim of securing a longer-term contract that would underwrite the mine's expansion.

Huntly East Mine has four main tunnels, with branches off to the sides into the mining panels. The planned extension is essentially business as usual, using tried and tested methods. The full development would require investment of approximately \$100 million, including the purchase of a \$4.5 million roadheader fitted with a hydraulic rig to install roof and rib (tunnel wall) support bolts. The expansion would add up to 50 permanent jobs to the current complement of about 150.



The coal conveyor at Huntly East Mine.

