



Coal
Association of
New Zealand

Coal e-Newsletter

The monthly e-Newsletter of the Coal Association of New Zealand

Issue No. 35

December 2008



Merry Christmas and a Happy New Year!



What's news?

COAL NEWS 1

New Zealand 1

Roundtable meeting on CCS with the UK Energy Mission, 3 February 2009 1
Energy Minister opens Pike River coal mine 1
Pike River production under way 2
L&M Coal seeking partners for coking coal development 2
Solid Energy aims to develop more Buller coking coal resources 3
Solid Energy and New Zealand Steel sign coal supply contract 3
Energy Minister congratulates Solid Energy for engaging with public 3
Electricity from coal seam gas now on the national grid 4
Solid Energy plans to reopen Maramarua opencast coal mine 4
NZ coal exports rise sharply and expected to grow further in 2009 4

INTERNATIONAL NEWS 4

Australia 4

Newcastle Coal at 6 month low due to slowing Chinese demand 4
Macarthur Coal lands dry and high 5

China 5

Chinese coal giant's output up 5
Coal, power firms ink supply deals 5
Closure of 2,500 coal mines 5
China's largest opencast coal mine ready for production 6
Shenhua Ningxia Coal Group boosts CTL project with Sasol 6
Coal piling up at Chinese harbours on weak demand 6

India 6

Eight foreign firms among 17 bidding for coal exploration 6
Thermal plants face coal shortage 6
JSPL inks JV with group companies for coal-to-oil project 7

Indonesia 7

Bayan lifts force majeure at coal mine 7

Japan 7

Japan utilities to pay China coal import tax 7

Mongolia 7

Peabody Energy signs Inner Mongolia coal mine deal 7

Mozambique 7

Australian Company wins coal handling tender 7

South Korea 8

Korean firms win big coal deal in Indonesia 8

UK 8

UK Coal now expects low overall full-year results 8

USA 8

Supreme Court accepts Navajo coal case 8

TECHNOLOGY & OTHER NEWS 9

Conference on CO₂ capture and storage 9
IEA warns companies to invest in carbon capture 9
First meeting of Australian Carbon Storage Taskforce 9
World's first green coal power plant 10
Drax to mix biomass with coal 10
DOE announces solicitation for loan guarantees 10
DOE seeks applications for third round of clean coal power initiative 10
Illinois lawmakers approve clean coal projects bill 11
IEACCC technical reports released 11

EVENTS 13

FEEDBACK 14

DISCLAIMER 14

COAL NEWS

New Zealand

Roundtable meeting on CCS with the UK Energy Mission, 3 February 2009

The British High Commission, in coordination with the Energy Federation of New Zealand, is mounting a UK-to-NZ mission on Renewable and Clean Energy in early February 2009. One of the highlights is a roundtable meeting on Carbon Capture and Storage with the UK participants on Tuesday, 3 February 2009 at Lower Hutt.

The mission deals with both the commercially-orientated R&D end of the spectrum and the Trade and Investment end. The meetings will facilitate individual discussions with New Zealand organisations, with a view to moving towards agreements involving one or more of:

- collaborative research, covering IP discovery and use and providing templates for business collaboration (even if the research is in the pre-competitive stage);
- investments in NZ or the UK;
- sales or purchases of IP or products.

RSVP please to Cito Gazo (C.Gazo@crl.co.nz or 04-570-3712) who will organise and coordinate the events for the EFNZ Secretariat. Further details will be provided upon confirmation.

Energy Minister opens Pike River coal mine

The new Pike River coal mine is a good example of environmentally friendly mining practices, according to Energy Minister Gerry Brownlee as he opened the mine last month. The Pike River coalfield is in the Paparoa Ranges, 50km northeast of Greymouth and is New Zealand's largest known deposit of hard coking coal.



The coalfield is estimated to hold about 60 million tonnes of coal and the intention is to mine about 18 million tonnes over its 18-year life span. The project will create 150 jobs and indirectly support another 450.

Mr Brownlee said "The successful development of this project required a carefully crafted marriage of good mining practice and environmental good management. No trucks will be necessary to carry the coal down the mountain -- reducing noise, dust, and damage to the access road -- and the mine's surface footprint has been kept to a minimum to reduce the mine's environmental impact." He added that the Department of Conservation had recently presented Pike River Coal with a certificate recognising the environmental consideration it had demonstrated.

Pike River production under way

The first coal from the new Pike River mine accessed through a 2.3 km rock tunnel was trucked to the company's coal preparation site in mid-November. The first coal was intersected a month earlier when tunnellers broke through into the coal seam after two years of tunnelling through rock. This was a major engineering project with the largest and longest tunnel in New Zealand since the second Manapouri tunnel was completed in 2001.

Meanwhile, an underground in-seam coal drill rig has commenced an underground drilling programme to fine-tune the geological model of the western pit bottom area. Construction of the 4m diameter by 108m deep ventilation shaft is on target to be completed by the end of January.

The coal preparation plant, approximately 10 km from the mine entrance, was completed during the September quarter. A contract has been awarded for installation of the 'high-tech' coal scan unit which will analyse the coal and direct it to the appropriate stockpile based on sulphur content.

Much of the civil construction is complete at the rail loadout facilities at Ikamatua. Ontrack started to lay the rail side and loop in the September quarter with the whole loadout expected to finish in time for first coal deliveries. At full production, trains will be loaded at the rate of one or two a day.

During its production ramp-up phase, Pike River was scheduled to produce 200,000 tonnes by 30 June and then approximately one million tonnes a year for each of the following 18 years. However, Pike River Coal said at its recent annual meeting it is expecting to undershoot the June production target by about 20 percent because not all the time lost during tunnelling had been recovered.

At its initial public offer in mid-2007, Pike River forecast a price of \$US100 a tonne for the coal it would be mining this year, but the company has signed sales contracts for \$US300 a tonne for the first coal produced by the end of next March. Chief Executive Gordon Ward told the annual meeting spot prices for coking coal had recently fallen quite significantly, and share prices of coal companies around the world, including Pike River, had followed suit.

L&M Coal seeking partners for coking coal development

L&M Coal Ltd is seeking partners for a major coking coal development northeast of Westport. The project (costing up to \$100M) aims to develop several open cast mines is expected to have a minimum 10 year lifespan and a 10M tonne output.

The company, a division of the L&M Group, said it could be exporting by 2010 and the project could boost employment in the region by up to 100 new jobs. L&M Coal managing director Greg Hogan said although results of more exploratory tests were due in the new year, they would not change the outcome or plans to get the venture under way.

He said a "number of parties" in New Zealand, Australia, Japan, China, India and Europe had been spoken to about the venture. "There have been a number of potential partners spoken to; some want to acquire the asset [outright]." He estimated it would take less than \$100M to develop the mines, noting there were already road, rail and port facilities available.

L&M Coal had investigated the area, south of the Stockton Plateau, under an exploration permit and has applied to Crown Minerals for a mining permit over 190ha. The company will also need an access agreement with the Department of Conservation and resource consents from West Coast Regional Council and the Buller District Council.



Merry Christmas and a Happy New Year!





L&M announced recently it had discovered 128 million tonnes of coal in New Zealand, in four separate exploration permits. The other three areas it hopes to mine are Kaitangata in Otago, Ohai in Western Southland and the Maramarua field in Waikato. A pilot programme is under way at Kaitangata, testing for coal seam gas.

Solid Energy aims to develop more Buller coking coal resources

Solid Energy has reassessed its coking coal reserves on the Buller coalfield with respect to current prices. Solid Energy said in its annual report reserves for the proposed Cypress opencast mine in the Upper Waimangaroa and for Millerton in the Stockton mine have been confirmed. The Millerton reserves are expected to add 10 years to Stockton's production life.

Solid Energy is studying the potential for a coal washery at Stockton which could process and upgrade about 5.5M tonnes of currently stockpiled lower quality coal. The company plans to mine through historic workings, which would also access a further 4.5M tonnes that could be processed in the proposed washery.

Coking and thermal coal prospects in the Reefton and Murchison areas were explored during the year. An exploration permit near Waimangaroa was drilled and the company acquired a mining permit at Charleston.

Drilling continued to extend reserves at the Spring Creek underground mine in the Grey coalfield which Solid Energy is developing in partnership with international trader Cargill. The mine currently has four years of proven reserves and it is planned to extend the mine north-west into the Rapahoe Block to access more than 10M tonnes of resources.

Further studies were undertaken of the coking coal resource in the Grey coalfield, east of the former Strongman Mine in the Mt Davy mining permit, where resources exceed 30M tonnes.

Solid Energy and New Zealand Steel sign coal supply contract

Solid Energy plans to invest more than \$100M developing and extending the Huntly East mine over the next five years following the signing of a major coal contract with New Zealand Steel. The coal to supply the BlueScope owned steelworks at Glenbrook will come from both Solid Energy's Huntly East underground and Rotowaro opencast mines.

"Concluding negotiations and securing the contract is very good news for Solid Energy and particularly the Huntly East mine... [The two companies] have a long association and New Zealand Steel is a valued customer," said Barry Bragg, chief operating officer for Solid Energy.

New Zealand Steel employs approximately 1,400 people at the Glenbrook mill, which was specifically designed to produce steel from nearby iron sands and Huntly coal.

The major expenditure at the underground mine will be the construction of a mine ventilation shaft and the provision of mining equipment such as continuous miners, shuttle cars and conveyors. The mine extension is expected to add 10 to 15 years to its life and increase local employment from 145 to around 200 people.

Energy Minister congratulates Solid Energy for engaging with public

After Solid Energy's annual meeting in Auckland in late November, Energy Minister Gerry Brownlee said the company should be congratulated for engaging with the public. Solid Energy presented its positive message on the future of coal to about 160 people, mainly from the energy and mining industries. It was described as the first of its kind for a state owned enterprise and could be the first of regular annual public meetings involving SOEs.

Over the past year, Solid Energy paid the government a \$34M dividend but it has forecast a \$100M payment in the coming year in spite of world coal prices falling back from previous record levels. Mr Brownlee said there was a lack of understanding of the contribution SOEs made to revenue and the government was keen to encourage more public interaction.

Solid Energy said that even with just mid-range future energy prices, its existing operations (including new developments soon to start) would generate nearly \$2 billion of future value and this is predicted to increase to \$4 billion within 20 years.



Merry Christmas and a Happy New Year!





Solid Energy highlighted the size of the resource by stating it has access to the equivalent of 15 Maui gas fields - 150 years of current energy use. The lowest cost resources are the Southland lignite fields, which could provide energy at 10% the cost of present electricity generation. However, capturing and storing the CO₂ byproduct was still up to a decade away and would require investment by governments around the world. A coal to transport fuel conversion plant was about 10 years away and would cost about \$10 billion.

Electricity from coal seam gas now on the national grid

Solid Energy Chief Executive Officer Dr Don Elder announced recently that in a first for New Zealand, coal seam gas from the company's pilot field near Huntly is now producing enough electricity for 500 to 800 homes, using one of the world's cleanest forms of thermal energy. "Gas from the Huntly wells contains only 1% CO₂ and has 98% energy-rich methane. That means the gas has a lower carbon footprint than conventionally-produced natural gas, which up until now was New Zealand's cleanest thermal power," he said.

The 1MW on-site generator is currently fed by four wells taking gas from a 32 hectare section of the coalfield. Gas flow from this small pilot has the potential to power as many as 1000 homes but it is not yet known if the local network connection can accept that much electricity.

The pilot coal seam gas field was developed through a joint venture between Solid Energy and USA oil and gas company, Resource Development Technologies. The joint venture company undertook three years of exploration and assessment before generating electricity.

Solid Energy plans to reopen Maramarua opencast coal mine

After a break of some years Solid Energy is preparing to resume mining operations in the Kopako 1 (K1) pit at the Maramarua opencast mine about 80 km north of Huntly. The company and others had mined coal at Kopako since the late 1950s. Solid Energy had worked the K1 pit alone, and together with Glencol Energy, the K2 pit to supply the Meremere power station. Following Meremere's closure many years ago, mining ceased and both pits were allowed to flood. Glencol now operates the new K3 mine nearby.

Solid Energy said it has installed a pump to drain the flooded pits. Once land use consents are secured and the pits dewatered, the company expects to start mining about 300,000 tonnes of coal a year. A coal handling and processing plant, including a hopper, crusher, conveyor and screens, and contractor's facilities are to be built at the site.

The K2 pit needs to be dewatered so backfill can be placed in the old pit as part of the rehabilitation programme.

NZ coal exports rise sharply and expected to grow further in 2009

New Zealand's coal production increased by 21% in the latest June quarter compared with the same quarter of 2007, according to the New Zealand Energy Quarterly, published by the Ministry of Economic Development.

Much of the increase was due to a return to full production of Solid Energy's Stockton bituminous coal export mine.

Coal exports increased by more than 70% compared with the June quarter 2007. This was the third-highest level of exports on record, and is expected to grow as production from the Pike River coal mine ramps up.

INTERNATIONAL NEWS

Australia

Newcastle Coal at 6 month low due to slowing Chinese demand

Power station coal prices at Australia's Newcastle port fell to near their lowest in six months on concern Chinese demand is slowing.

The weekly index for power station coal prices at the New South Wales port dropped 6.1% to A\$128.98 a tonne by the end of September. The index has declined 34% since reaching a record \$194.79 a tonne in early July.

Coal demand in China may ease after China Shenhua Energy Co., its biggest producer, boosted output by 14% in August.



Merry Christmas and a Happy New Year!





Macarthur Coal lands dry and high

Macarthur Coal has reported a 19% gain in quarterly coal production, though sales were down. The company also said there was little evidence the global credit freeze was hitting demand for the company's injection coal.

The Coppabella mine, hard hit by one-in-100-year rains, is expected to return to full production early next year, though Macarthur did not repeat its target of having it at full production in January. "Production has improved significantly over the course of the year as the mine gradually recovers from the flood events earlier in the year. The improving trend is expected to continue over the next few quarters," the company said. Macarthur said first-quarter coal production was 1.12M tonnes, up from 0.94Mt in the previous quarter. Sales dropped to 1.09Mt, from 1.23Mt as stockpiles ran down.

Macarthur said the Dalrymple Bay Coal Terminal and related infrastructure near Mackay were improving capacity but miners were having trouble getting coal through it after the rains. While capacity at Dalrymple Bay has risen to the equivalent of 65-70Mt a year, coal loaded in September was only equivalent to an annual rate of 48.3Mt.

China

Chinese coal giant's output up

Before the recent downturn in world markets, China Shenhua Energy Co. Ltd. said that it produced 15.8M tonnes of commercial coal in August, rising 14% from a year ago. The coal giant's exports amounted to 1.3Mt, slumping 44%.

Turnover by its own railways reached 10.7 billion tonne-kilometres in the month, leaping 10.3% from a year earlier. It transported 11.4Mt of coal by sea, inching up 1.8%, including 6.9Mt shipped at the Huanghua Port and 1.7Mt shipped at the Shenhua Tianjin Coal Dock.

The firm generated 10 billion kWh of electricity in August, soaring 38.3% from the same period of 2007.

Coal, power firms ink supply deals

Six major coal producers based in Shanxi province signed long-term supply contracts with seven of the country's top electricity companies.

Under the contracts, the power companies - including Huaneng, Huadian and Guodian - will receive a total of 115.8M tonnes of coal from 2009 to 2013.

Li Xiaopeng, vice-governor of Shanxi province, said cooperation between the big coal and power providers would help to tackle supply shortages. Li emphasized the importance of sustainable development and pledged to create a good investment climate for investors.

Three local coal companies will also sign strategic cooperation framework agreements and investment contracts with three State-owned power producers. Wang Huisheng, president of the State Development and Investment Corp (SDIC), said in a media report that the company would invest further in Shanxi in the next 10 years.

The SDIC aims to build a coal-water-electricity-methanol-olefin industrial chain focusing on olefin products.

Closure of 2,500 coal mines

About 2,500 coal mines will be shut down and 1,600 restructured within the next two years. They each have an annual production capacity of less than 300,000 tonnes.

In a notice posted on the State Administration of Coal Mine Safety's website, the number of such mines will be reduced to 10,000 from the present 14,000 by 2010. The number of mines to be closed in each coal-rich province has been circulated to local governments. The administration wants to encourage large mining firms to merge with smaller ones to boost work safety.

The country had closed down more than 18,000 small coal mines by the end of last year. They had a total annual production capacity of 250M tonnes. More than 8,800 mines have also been merged into 3,700, increasing the annual production of each from 32,000 tonnes in 2005 to 60,000 tonnes last year.



Merry Christmas and a Happy New Year!





China's largest opencast coal mine ready for production

China's largest opencast coal mine in Haerwusu in northern Inner Mongolia Autonomous Region is set to start production. The estimated coal output was forecast at 7M tonnes in the fourth quarter this year, but the company didn't specify the exact date when the mine would be put into production.

With a designed annual capacity of 20M tonnes of raw coal and service life of 79 years, Haerwusu Coal Mine is said to be the largest opencast mine in China.

The total investment of the project topped US\$1.02 billion. Its coal reserves total about 1.73 billion tonnes, which are regarded as low ash, low sulphur, extra low phosphorus and high heating value thermal coal.

Located in the central part of Zhungeer Coalfield, Huaerwusu Opencast covers an area of 67 sq.km, with 12 minable coal seams in the opencast district. The main minable seam averages 20m in thickness.

Shenhua Ningxia Coal Group boosts CTL project with Sasol

Shenhua Ningxia Coal Group recently signed an agreement on stage II feasibility study of its proposed joint venture coal-to-liquid (CTL) project with South Africa's Sasol.

The research results of the stage II feasibility study will serve as main decision-making basis for investors to invest in the CTL project with an annual capacity of 3.6M tonnes and for national economic regulator to approve the program.

The joint feasibility studies also involve Foster Wheeler Energy Limited and Wuhuan Engineering Co., Ltd. The proposed CTL project is expected to attract US\$5-7 billion of investment shared equally by the two parties.

Earlier, Sasol announced that it would focus on the CTL project in the Ningxia Hui Autonomous Region and shelve the second one in Shaanxi Province, due to tightened Chinese control on proposed CTL projects.

Coal piling up at Chinese harbours on weak demand

China is seeing more and more coal pile up at major transport harbours due to weakening demand. The Qinhuangdao harbour bureau said that the harbour in northern China recorded a coal pileup of 8.44M tonnes, about 3M tonnes more than regular levels. A surplus of coal at major consumption areas is also increasing. The Guangzhou harbour in southern China had about 2.2M excess tonnes of coal recently.

India

Eight foreign firms among 17 bidding for coal exploration

Leading coal miner Coal India Ltd (CIL) has received bids from 17 national and international companies for extracting coal from 18 abandoned underground mines belonging to three of its subsidiaries.

The bidders are Xindia Steels, Walter Southeast Asia, Afcon Infrastructure, Essel Mining and Industries, Sunflag Iron and Steel, Anglo American Services India, Indo-Australia Mining, Reliance Infrastructure, Zhengzhou Coal Mining Machineries, Essar Mineral Resources, Electrosteel Castings, Sainik Mining and Allied Services, Tiandi Science and Technology, Future Metals, European Ventures, Rio Tinto India and Bucyrus DBT Europe GmbH.

The proposals are now being evaluated by the Central Mine Planning and Design Institute (CMPDI). CMPDI, a subsidiary of CIL, is one of India's largest consultancy firms in the field of exploration, mine planning and environment management.

Thermal plants face coal shortage

India's Central Electricity Authority (CEA) said in a recent report that 50 out of 81 thermal power plants in India had stocks less than 7 days of consumption in September. This is the highest number of plants having stocks below the critical level in recent times.

The CEA report cited non-receipt of coal, inadequate linkage and higher generation, as well as law and order problems as reasons for the current situation.



Merry Christmas and a Happy New Year!



At present, India has 81 coal-based thermal power stations which are largely fed by coal supplied by Coal India Ltd (CIL), the country's largest coal production utility, and its subsidiaries. India is planning to add about 78,700MW of power capacity in the current Plan period (2007-2012), about 64% from coal-based thermal power stations.

JSPL inks JV with group companies for coal-to-oil project

Jindal Steel & Power Ltd has floated a joint venture company with three other Jindal group companies to implement its proposed project for synthesising oil and gas from coal. The new venture has been christened Jindal Coal to Liquid Ltd.

JSPL has tied up with Sasol Lurgi, the South African-German venture considered a pioneer in the field, for the project. The project will use coal to synthesise gas which will be used in the steel plant itself. Along with gas, the project will also produce motor fuels, 55-65% of which will be diesel which is in short supply at present as state-run refiners have failed to cope with unforeseen spike in demand. The company has projected a capacity of producing 80,000 barrels a day of oil which will be cracked for motor fuels.

Indonesia

Bayan lifts force majeure at coal mine

Indonesian coal miner PT Bayan Resources Tbk had lifted force majeure imposed after heavy rain disrupted production at its Wahana coal mine in South Kalimantan.

However, the company said that it is in the process of recovery and is "still trying its best to restore the production capacity in the shortest possible time".

Wahana mine in Satui regency started open pit mining in December 2007, according to the company's prospectus. As of March 2008, the mine had produced 188,600 tonnes of coal with mineable bituminous coal reserves of 14.5M tonnes.

Japan

Japan utilities to pay China coal import tax

Japanese utilities have agreed to pay an export tariff for thermal coal imported from China, adding to the burden of the utilities already faced with higher energy prices.

The additional costs could prompt Japanese utilities, to reduce their volumes of thermal coal imports from China.

China recently imposed an export tax of 10% on thermal coal as it seeks to ease a severe power shortage that has forced half the nation to ration electricity. Japan has settled its thermal coal contract price with China at US\$131.40 a tonne for the current business year.

The introduction of the export tax on coal has been expected to give China less incentive to sell spot coal cargoes abroad, and they could soon raise term prices.

Mongolia

Peabody Energy signs Inner Mongolia coal mine deal

Peabody Energy Corp. has signed a deal with Inner Mongolian officials to develop a large surface mine and build an associated coal gasification plant.

The open-cut mine will be located on a site with coal resources currently estimated to be as great as 3 billion tonnes. A more precise estimate will emerge from confirmatory drilling.

The majority of coal from the mine will be dedicated for fuel supply to the coal conversion plant, which will have an annual capacity of 1.2Mt of methanol, or equivalent fuel and chemical production.

Mozambique

Australian Company wins coal handling tender

The Australian company Sedgman Limited has won the tender launched by Riversdale Mining, and its Indian partner, Tata Steel, to undertake a design and implementation agreement for a coal handling and preparation plant at Riversdale's Benga coal project in the western Mozambican province of Tete.



Merry Christmas and a Happy New Year!





Sedgman is now required "to file a final Design and Implementation Agreement and project definition report with Riversdale Mining and Tata Steel by the end of December 2008". These documents "will address all coal handling infrastructure requirements for the initial 800 tonnes per hour (tph) facility, and the expansion of the total plant to 3,000 tph". This is to include "all materials, plant and equipment associated with the construction of the new facilities".

Riversdale says the initial facility, at Benga, in Moatize district, will be built in 2009, and should be scaled up to 3,000 tph by 2012.

South Korea

Korean firms win big coal deal in Indonesia

A Korean company has confirmed a huge Indonesian coalmine exploitation project deal.

Inni-Korea Resource Tuesday signed a memorandum of understanding with three Indonesian companies on the exploration of a 50,000-hectare mine area in Kotabaru County, Southern Kalimantan, Indonesian media outlets reported. The mines are believed to contain 3.8 billion tonnes of coal deposits.

The Korean company agreed on the development of infrastructure and preparation of production in a joint venture with its Indonesian partners, and will invest US\$50M in the first phase of the project.

The Indonesian government also pledged its full support for the project. The Vice President of the Investment Coordinating Board of Indonesia said he hoped the project will create many local jobs and benefit both countries.

Both parties also agreed to an eco-friendly exploitation principle. Part of the profits from the project will be used in aiding financially troubled local residents.

UK

UK Coal now expects low overall full-year results

UK Coal PLC reported lower production for the third quarter and said it expects overall results for the year to be significantly below its prior expectations, citing lower production outlook and coal price.

Output in the third quarter, particularly in September, was behind original expectations for all four deep mining operations, for unconnected reasons, together with the surface mining operations being affected by wet weather.

However, UK Coal's revenues were approximately £119M, compared to £94M in the last year.

The company expects an average fourth quarter sales price of £1.85-1.90/GJ, taking fixed price contracts into account, making the average out-turn for the full year within the company's previously announced projections.

The company also expects full-year Deep Mine sales to be no more than 6.2M tonnes and Surface Mines to realise about 1.8M tonnes.

USA

Supreme Court accepts Navajo coal case

The U.S. Supreme Court has agreed to take up an appeal from the federal government involving coal royalties on the Navajo Nation.

The tribe has alleged that Peabody Energy conspired with the U.S. Department of Interior to persuade the tribe to accept a lower royalty than other government officials believed the tribe should be paid.

The Navajos claim the government's breach of trust cost them as much as \$600M in lost coal royalties.

The U.S. Court of Appeals for the Federal Circuit ruled last year that the federal government failed to uphold its trust duties to the Navajo Nation and that the tribe is entitled to damages from the government.



Merry Christmas and a Happy New Year!





TECHNOLOGY & OTHER NEWS

Conference on CO₂ capture and storage

More than 200 delegates from around the world attended the Australian Cooperative Research Centre for Greenhouse Gas Technologies (CO2CRC) conference held in Queenstown in early December. The New Zealand Government (through FRST) is involved in the programme, alongside partners including Solid Energy, Genesis and GNS. Altogether, New Zealand organisations contribute about \$500,000 to the project's \$22M total budget.

CO2CRC chief executive Peter Cook said "It's the only way we have at the moment of capturing emissions from fossil fuels," Dr Cook referred to the Huntly coal fired power station as one example of a viable entity for the technology in this country. He added it would have wider applications in heavy industry countries such as India and China.

IEA warns companies to invest in carbon capture

The International Energy Agency has told governments and resource companies to put their money where their mouth is on CCS, warning that unless activity accelerates rapidly, it might not be a commercial option until after 2030.

In a 266-page report, the IEA said CCS was "the only technology available to mitigate greenhouse gas emissions from large scale fossil fuel usage", with the potential to deliver 20% of the greenhouse gas reductions needed to halve global emissions by 2050.

Yet despite bold statements such as G8 leaders recently proposing to build 20 CCS large scale demonstration projects by 2010, it concluded "current spending and activity levels are nowhere near enough to achieve these deployment goals".

Costs of projects have risen significantly in recent years, and instead of stepping up their efforts, public and private investors have pulled back, while no country has produced the comprehensive legal and regulatory framework needed to make CCS commercially viable.

"The window of opportunity is closing for the global community to cost-effectively address climate change. CCS technologies must play a key role, but first they must be proven in the next decade. If we do not successfully demonstrate CCS soon, it will raise costs for other climate mitigation options."

The report argued that 20 to 30 full scale CCS demonstration projects were needed to bring down costs and find a commercially viable technology. On current technology, it warns, the cost of using CCS for a coal fired plant is about \$US60 to \$US75 per tonne of emissions saved, putting it way behind wind or nuclear power as an option.

In another recent report, Energy Technology Perspectives 2008, IEA urged the world to invest \$US30 trillion in a combination of CCS, renewable energy, nuclear power and energy efficiency to meet the target of halving emissions by 2050.

First meeting of Australian Carbon Storage Taskforce

The Australian Minister for Resources and Energy told the first meeting of the Carbon Storage Taskforce in October that Australia can play an important global role in developing economically responsible climate change policy. The Taskforce has been charged with developing by June the National Carbon Mapping and Infrastructure Plan which will prioritise the development of geological storage sites for CCS and plan necessary pipeline infrastructure.

The Minister said: "The Carbon Storage Taskforce is pivotal to the development of the government's \$500 million National Low Emissions Coal Initiative and complements the research and development work to be undertaken by the National Low Emissions Coal Research Centre." He said the government's commitment to reduce Australia's greenhouse gas emissions by 60% (on 2000 levels) by 2050 will require substantial CO₂ reductions from Australia's coal fired power stations. Coal provides around 80% of Australia's total electricity, and accounts for 32% of Australia's greenhouse gas emissions.



Merry Christmas and a Happy New Year!





He stated the government is committed to helping develop large scale demonstration projects in order to assess the feasibility of CCS. The high calibre of representatives would ensure the taskforce has the necessary expertise to develop a plan to assist Australia in developing what is an essential technology.

Australia has more than 10 CCS projects under way. The Australian Coal Association believes there could be up to four industrial scale demonstration projects in Australia by 2020.

World's first green coal power plant

Swedish electricity provider Vattenfall has developed the world's first clean coal-fired power plant in the eastern German town of Spremberg.

CO₂ is captured, turned into liquid and transported hundreds of kilometres. It is then stored 3,500m underground in natural gas reservoirs. The level of CO₂ which escapes into the atmosphere is minimal.

Drax to mix biomass with coal

Drax said it had bought equipment that will cut its CO₂ emissions by more than 2.5M tonnes a year. It has signed a £10M contract with Doosan Babcock Energy for direct-injection biomass co-firing systems for all six of the coal-fired units at its 4,000 MW plant in North Yorkshire.

The new facility, which will allow Drax to mix renewable biomass materials - such as straw, wood and food and agricultural residues - with coal will be the largest of its kind in the world.

Drax said the deal was a critical step in the development of its co-firing project. The combination of the new facility and Drax's existing co-firing capability would give the company a total renewable capacity of 500MW, "making us the largest single-site renewable generator in the UK".

Drax said it was making good progress on upgrading its turbines to increase their efficiency. The project, when completed, is expected to cut another 1 million tonnes of CO₂ emissions.

Drax said the combination of greater turbine efficiency and increased bio-mass capability would cut its annual emissions by more than 15% by 2011.

DOE announces solicitation for loan guarantees

The U.S. Department of Energy (DOE) announced a solicitation for up to \$8.0 billion in federal loan guarantees for projects that employ advanced technologies that avoid, reduce or sequester emissions of air pollutants or greenhouse gases in the areas of coal-based power generation, industrial gasification, and advanced coal gasification facilities. This marks the third round of solicitations for DOE's Loan Guarantee Program, which encourages the commercial use of new or significantly improved energy technologies and is an important step in paving the way for clean energy projects.

This solicitation will make available \$6 billion in loan guarantee authority for incorporating carbon capture and storage (CCS) or other emissions-reducing technologies into industrial gasification activities, retrofitted and new coal-based power generation facilities. An additional \$2 billion in loan guarantee authority will be made available for advanced coal gasification projects, which convert coal cleanly into electricity, hydrogen, and other valuable energy products.

The Loan Guarantee process is organized into four phases: application, project evaluation, term sheet/conditional commitment, and final approval and closing of a Loan Guarantee Agreement. Selection criteria for the clean energy projects under this solicitation will focus on a project's ability to avoid, reduce, or sequester air pollutants or greenhouse gas emissions; the speed with which the technologies can be commercialized; the prospect of repayment of the guaranteed debt; and the potential for long-lasting success of these technologies in the marketplace.

DOE seeks applications for third round of clean coal power initiative

DOE recently issued the final Funding Opportunity Announcement (FOA) for Round 3 of the Clean Coal Power Initiative (CCPI) which seeks to accelerate the commercial deployment of advanced coal technologies to help supply the United States with clean, abundant, and affordable energy. DOE anticipates making multiple awards under this FOA and, depending on fiscal year 2009 appropriations, may be able to provide up to \$340M to be distributed among



Merry Christmas and a Happy New Year!





selected recipients. The projects will be cost-shared, with the award recipients providing at least 50% of funds for the project. The solicitation contemplates cooperative agreements between the Government and industry to demonstrate, at commercial scale, new technologies that capture CO₂ emissions from coal-fired power plants and either sequester the CO₂ or put it to beneficial use.

For Round 3, a draft FOA detailing the goals and requirements was released in October 2007 for comment. To garner input, a public workshop was held with 105 attendees representing utilities, technology vendors, and project developers. Changes to the final FOA include:

- Carbon capture technologies must operate at 90% carbon capture efficiency.
- At least 300,000 tonnes per year of CO₂ must be captured and sequestered or put to beneficial use.
- Projects must show significant progress toward carbon capture and sequestration with less than 10% increase in electricity costs.
- Projects must use domestic mined coal or coal refuse for at least 75% of energy input.
- Projects must produce electricity as at least 50% of the gross energy output.
- Repayment of the Government's share of project costs is not required.

Applications are due to DOE in January and selection announcements are anticipated for July.

Illinois lawmakers approve clean coal projects bill

Illinois lawmakers agreed in November to aid development of two "clean coal" projects, including a proposed \$2.5 billion power plant near Taylorville. Under the legislation, utilities would be required to buy some of their electricity from the plant, creating a stable market. Illinois also would provide up to \$18M for the planning and studies needed before the Taylorville plant can go forward. The legislation would also require more power companies to meet the state's goal of producing 25% of energy from renewable sources by 2025.

The Taylorville Energy Center, located about 30 miles southeast of Springfield, would burn Illinois coal, which has lost much of the market to cleaner burning coal from other regions. The plant would capture half the CO₂ that is usually released into the air. Tenaska, the Nebraska-based company interested in building the plant, estimates it would create 1,500 construction jobs, along with hundreds of mining and plant operation jobs.

Another proposed plant, in Decatur, also stands to benefit from the legislation. This plant would convert coal into a gas that can be burned cleanly.

IEACCC technical reports released

The IEA Clean Coal Centre has published the following reports (available through www.iea.org):

- 1) *"Fossil Fuel-Fired Power Generation, Case Studies of Recently Constructed Coal- and Gas-Fired Power Plants" by Colin Henderson* - The IEACCC was asked to help build global knowledge on coal use potential in the Plan of Action for Climate Change arising from the July 2005 G8 Meeting in Gleneagles, Scotland. In particular, the Communiqué invited the IEA 'to carry out a global study of recently constructed plants building on the work of its Clean Coal Centre, to assess which are the most cost effective and have the highest efficiencies and the lowest emissions, and to disseminate this information widely.'
- 2) *Significant achievements of European Coal and Steel Community R&D programmes in the development of clean coal power generation technology by A.J. Minchener and J.T. McMullan* - The European Commission has funded research on the production and use of coal, since the European Coal and Steel Community (ECSC) Treaty came into force in 1952. Financial support covered mining, coal preparation and conversion, and R&D in coal combustion and gasification. Since the end of the ECSC Treaty in 2002, R&D in the coal and steel area has been funded by the Research Fund for Coal and Steel (RFCS). The programme is managed by DG Research according to similar principles to those applied to the ECSC Programme, but with new guidelines. The areas of emphasis in this review are coal combustion and gasification. Here, in the 1970s and 1980s, there were major programmes to develop coalbased alternatives to oil and gas, in response to the oil crises of the period. After the start of the 1990s, the main focus became the development of clean coal technologies for power generation.

Most ECSC R&D was undertaken via collaborative projects. This report highlights some of the major achievements, and the topics emphasised are:



Merry Christmas and a Happy New Year!





- a) Improving the performance of pulverised coal fired power plant - Here, work was undertaken to improve performance through: prediction and minimisation of the impact of coal blends on combustion, individual burner characterisation, and improving PC airflow distribution, measurement and control. The work was carried out through laboratory and large scale testing, the development of combustion models, plant optimisation studies, development of on-line monitoring techniques, and improved operational control strategies.
- b) Reducing slagging and fouling for pulverised coal fired plant - This had three main themes: fundamental studies to improve overall understanding of the processes of ash deposition, probes and predictive tools to enable the measurement of deposition extent, and supporting studies to reduce ash deposition in large-scale PF boiler plant. The programme has generated a wealth of information and has considerably extended the understanding of the mechanisms and processes of ash deposition.
- c) Improved environmental control for pulverised coal fired plant - This work has been very successful. It was shown that careful selection of combustion modification techniques could result in significant reductions in NO_x emissions. A range of measures have been established, including low NO_x burners, air staging, flue gas re-circulation, and re-burning. Overall, this has led to a number of techniques that have been applied by EU industry, both within the European Union and in external markets.
- d) Co-combustion and fluidised bed applications - The programme supported key projects to address many important co-utilisation issues. These included practical laboratory and pilot scale tests of coal combustion with natural wood, agricultural waste, paper waste, agroindustrial waste, waste edible oils, refuse derived fuel (RDF), plastic waste, meat and bone meal (MBM), and sewage sludge. Most of the work focused on CFBC applications as this technology is particularly suited to co-firing applications.
- e) Valorisation of coal processing residues - The ECSC Programme supported various initiatives to minimise the impact of such coal residues, together with coal mining wastes, by characterising these materials and evaluating them for their potential applications. This included techniques to utilise the energy content of such residues, both to ensure comprehensive utilisation of resources and to achieve a significant environmental benefit. Advanced power generation In accordance with the ECSC terms of reference, the majority of the projects on advanced power generation focused on activities offering prospects of demonstration and replication of the technology under development. The results from these research activities contributed a significant part of the R&D achievements in the field of coal utilisation. As such, they enabled European industry, through co-operation at Community level, to make significant progress in the development and introduction of advanced power generation systems.
- f) Control of CO₂ emissions - Some initial work was undertaken within the ECSC Programme, which considered both PF and IGCC processes. The emphasis was on separation membranes, and on coal reactivity studies. Since the end of the ECSC programme, it has been recognised that IGCC may be the technology of choice when CO₂ mitigation becomes a necessity. Consequently there has been an upturn in interest in methods for gas separation and this topic is of key importance in the ongoing RFCS programme and in the EC supported Framework R&D Programmes.
- g) Exploitation of R&D results - The results arising from the ECSC coal utilisation R&D Programme have played a key role in the development of clean and efficient coal-based power generation. Work on PF combustion has contributed greatly to improving the performance of existing units within Europe, and has assisted in the deployment of newer designs of plant, with advanced steam cycles and state of the art environmental control systems.

Similarly, with CFBC, the ECSC work has greatly assisted in the full understanding of the process, leading to improved designs of plant capable of burning a wide range of coals and alternative feedstocks in an efficient and environmentally acceptable manner. For IGCC, the ECSC work led to the construction and operation of various pilot plants, from which two complete large-scale demonstration plants were installed in Europe. Subsequently, considerable support work was provided through ECSC, including component development and process measurement methods.



Merry Christmas and a Happy New Year!





- h) The way forward via the RFCS programme - The Treaty establishing the ECSC expired on the 23 July 2002. The ECSC funds were transferred to the European Community to create a common fund for research in the coal and steel area. This is being used to support the 'Research Programme of the Research Fund for Coal and Steel', which is managed by EC DG Research according to principles similar to those of ECSC RTD. The RFCS programme began in 2002, and the first projects are still underway, with the level of results yet in the public sector being very limited.

EVENTS

10-11 Feb 2009, 4th International conference on underground coal gasification, London, UK, Julie Lauder, UCG Partnership Limited, Network House, Bradfield Close, Woking, Surrey GU22 7RE, UK, Tel: +44 870 803 0665, Fax: +44 870 803 2065, Email: julie.lauder@ucgp.com, Internet: www.ucgp.com/conferences/next-conference

12-13 Feb 2009, 9th Underground coal operators conference, Wollongong, NSW, Australia, Peter Vrahas, University Conferences & Functions, University of Wollongong, Wollongong, NSW 2522, Australia, Tel: +61 2 4221 8173, Fax: +61 2 4221 8001, Email: vrahas@uow.edu.au, Internet: www.uow.edu.au/conferences/Coal_2009

17-18 Feb 2009, 4th Annual coal-to-liquids and gas-to-liquids conference, Brisbane, Qld., Australia, Informa Australia, Level 2, 120 Sussex Street, Sydney, NSW 2001, Australia, Tel: +61 2 9080 4307, Fax: +61 2 9290 3844, Email: registration@informa.com.au, Internet: www.informa.com.au/ct>l

26 Feb 2009, Coal UK conference and awards 2009, London, UK, Claire Lewis, The McCloskey Group, 2 Pages Court, St Peters Road, Petersfield GU32 3HX, UK, Tel: +44 1730 265095, Fax: +44 1730 260044, Email: claire.lewis@mccloskeycoal.com, Internet: www.mccloskeycoal.com/conferences

23 - 27 Feb 2009, 11th National Power New Zealand, SkyCity Convention Centre, Auckland, New Zealand, Tel: +61 2 9021 8808, Fax: +61 2 9281 3950, Email: cs.au@terrapin.com, Internet: www.terrapin.com/2009/npnz_nz

26-27 Feb 2009, Platts 3rd annual carbon capture and storage conference, Brussels, Belgium, Sophie Adams, Platts EMEA Conference & Events Division, 20 Canada Square, Canary Wharf, London E14 5LH, UK, Tel: +44 20 7176 6658, Fax: +44 20 7176 8512, Email: sophie_adams@platts.com, Internet: www.platts.com/Events/2009/pc965

3-4 Mar 2009, 2009 Coaltrans India conference, New Delhi, India, Coaltrans Conferences Ltd, Nestor House, Playhouse Yard, London EC4V 5EX, UK, Tel: +44 20 7779 8945, Fax: +44 20 7779 8946, Email: registrations@coaltrans.com, Internet: www.coaltrans.com

11-13 Mar 2009, McCloskey's coal conference of the Americas 2009, Cartagena, Colombia, Claire Lewis, The McCloskey Group, 2 Pages Court, St Peters Road, Petersfield GU32 3HX, UK, Tel: +44 1730 265095, Fax: +44 1730 260044, Email: claire.lewis@mccloskeycoal.com, Internet: www.mccloskeycoal.com/conferences

19-20 Mar 2009, 17th Annual Platts coal properties & investment conference, Palm Beach Gardens, FL, USA, Ron Berg, Platts Boston Office, 34 Crosby Drive, Bedford, MA 01730, USA, Tel: +1 781 430 2118, Email: ron_berg@platts.com, Internet: www.platts.com/Events/2009/pc910/

25-26 Mar 2009, Emissions Trading & Climate Change Policy, Duxton Hotel, Wellington, New Zealand; Tel: +64 9 912 7637, Fax: +64 9 912 7639, Email: sarjane@conferenz.co.nz, Internet: www.conferenz.co.nz/reviewing-emissions-trading-and-climate-change-policy-summit.html

25-27 Mar 2009, World coal to liquids 2009 conference, Washington DC, USA, Email: info@world-ctl2009.com, Internet: www.world-CTL2009.com

20-21 Apr 2009, 7th Coaltrans China conference, Beijing, China, Coaltrans Conferences Ltd, Nestor House, Playhouse Yard, London EC4V 5EX, UK, Tel: +44 20 7779 8945, Fax: +44 20 7779 8946, Email: registrations@coaltrans.com, Internet: www.coaltrans.com

27-30 Apr 2009, Coal Prep 2009 conference, Lexington, KY, USA, Al Deurbrouck, 6915 Hilldale Dr, Pittsburgh, PA 15236, USA, Tel: +1 412 653 0281, Email: adeurbrouck@earthlink.net, Internet: www.coalprepsow.com

18-20 May 2009, 4th International conference on clean coal technologies, Dresden, Germany, IEA Clean Coal Centre, 10-18 Putney Hill, London SW15 6AA, UK, Tel: +44 20 8780 2111, Fax: +44 20 8780 1746, Email: mail@iea-coal.org.uk, Internet: www.iea-coal.org.uk



Merry Christmas and a Happy New Year!





coal.org.uk

1-3 Jun 2009, 15th Coaltrans Asia conference, Bali, Indonesia, Coaltrans Conferences Ltd, Nestor House, Playhouse Yard, London EC4V 5EX, UK, Tel: +44 20 7779 8945, Fax: +44 20 7779 8946, Email: registrations@coaltrans.com, Internet: www.coaltrans.com

13-14 Aug 2009, 5th Coaltrans Australia conference, Brisbane, Qld., Australia, Coaltrans Conferences Ltd, Nestor House, Playhouse Yard, London EC4V 5EX, UK, Tel: +44 20 7779 8945, Fax: +44 20 7779 8946, Email: registrations@coaltrans.com, Internet: www.coaltrans.com

19-21 Aug 2009, Coal-Gen 2009 conference, Charlotte, NC, USA, Jennifer Lindsey, COAL-GEN 2009 Registration Department, 1421 South Sheridan Road, Tulsa, OK 74112-6600, USA, Tel: +1 918 832 9313, Fax: +1 918 831 9161, Email: jenniferl@pennwell.com, Internet: www.coal-gen.com

25-27 Oct 2009, Coaltrans London 2009 conference, London, UK, Coaltrans Conferences Ltd, Nestor House, Playhouse Yard, London EC4V 5EX, UK, Tel: +44 20 7779 8945, Fax: +44 20 7779 8946, Email: registrations@coaltrans.com, Internet: www.coaltrans.com

26-29 Oct 2009, 15th International conference on coal science & technology (ICCS&T), Cape Town, South Africa, Mrs Angelique Freyer, Syngas and Coal Technologies, Sasol Technology Research and Development, 1 Klasie Havenga Avenue, PO Box 1, Sasolburg 1947, South Africa, Tel: +27 16 960 4505, Fax: +27 11 219 1095, Email: angelique.freyer@sasol.com, Internet: www.iccst.info

FEEDBACK

This e-Newsletter is published for the Coal Association of New Zealand Inc. by CRL Energy Ltd.

We value your feedback on issues discussed in this e-Newsletter.

For comments or enquiries about specific articles, please contact:

The Editor

CRL Energy Ltd

PO Box 31-244 Lower Hutt

Phone: 04 570 3715 Fax: 04 570 3701

DISCLAIMER

The views contained here may not represent the views of Coal Association of New Zealand (CANZ) Inc., its members and affiliates. CANZ makes no representation, warranty or guarantee as to the accuracy or completeness of the information (including news, editorials, prices, statistics, analyses and the like) provided through this publication. In no event shall CANZ or its members and affiliates be liable to any person for any decision made or action taken in reliance upon the information provided herein.



Merry Christmas and a Happy New Year!

